Schools' Mental Health Services and Young Children's Emotions, Behavior, and Learning

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Abstract: Recent empirical research has found that children's non-cognitive skills play a critical role in their own success, that young children's behavioral and psychological disorders can severely harm their future outcomes, and that disruptive students harm the behavior and learning of their classmates. Yet relatively little is known about wide-scale interventions designed to improve children's behavior and mental health. This is the first nationally representative study of the provision, financing, and impact of school-site mental health services for young children. Elementary school counselors are school employees who provide mental health services to all types of students, typically meeting with students one-on-one or in small groups. It is particularly challenging to estimate the impact of these counselors on student outcomes, given counselors' non-random assignment to schools. First, cross-state differences in policies provide descriptive evidence that students in states with more aggressive elementary counseling policies make greater test score gains and are less likely to report internalizing or externalizing problem behaviors compared to students with similar observed characteristics in similar schools in other states. Next, difference-in-differences estimates exploiting both the timing and the targeted-grade-levels of states' counseling policy changes provide evidence that elementary counselors substantially influence teachers' perceptions of school climate. The adoption of state-funded counselor subsidies or minimum counselor-student ratios reduces the fraction of teachers reporting that their instruction suffers due to student misbehavior and reduces the fractions reporting problems with students physically fighting each other, cutting class, stealing, or using drugs. These findings imply that there may be substantial public and private benefits derived from providing additional elementary school counselors.

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1. Introduction

There are several social and economic concerns which could potentially justify substantial investments in mental health interventions for young children. Researchers have argued that interventions may be especially cost effective if they focus on young children and on non-cognitive skills (e.g., Heckman, 2000). Recent research has found that students' non-cognitive skills plays a critical role in their own success (e.g., Heckman, Stixrud, and Urzua, 2006), that young children's behavioral and psychological disorders can severely affect their outcomes (Nagin and Tremblay, 1999; Currie & Stabile, 2006, 2007), and that disruptive students harm the behavior and learning of their classmates (Figlio, 2007; Aizer, 2008; Carrell and Hoekstra, 2008; Neidell and Waldfogel, forthcoming). At least one in five young children "have mental disorders with at least mild functional impairment" (U.S. Dept. of Health & Human Services, 1999), and some researchers estimate that 80 percent of children needing mental health services fail to receive these services (Kataoka et al., 2002). Mental health interventions could potentially improve a student's behavior, emotional well-being, inter-personal skills, and ability to cope with problems, in turn leading to improved physical health, academic performance, and future earnings. In addition to any private benefits enjoyed by the recipient of the intervention, there may be valuable positive spillover effects on peers, classmates, teachers, and family members.

Schools may serve as convenient locations to effectively reach the young children most in need of mental health interventions (Atkins et al., 2003; Weist et al., 2003). Despite increasing attention in both the academic literature and popular media to topics such as children's mental health problems, school safety, student bullying, and disruptive classroom behavior,[1] there is little prior evidence concerning the provision, financing, and effectiveness of school-site mental health services for young children. Elementary school counselors in the U.S. are school district employees who deal almost exclusively with

[1] Parents, school administrators, and politicians have increasingly emphasized the need to reduce bullying and to improve children's physical safety on school grounds. The federal No Child Left Behind Act (NCLB) requires states to come up with a list of unsafe schools and to allow students to transfer out of schools that have been deemed "persistently dangerous." NCLB also gives students the right to transfer schools if they have been the victim of a violent crime. Numerous states publish annual school report cards that include the number of serious disciplinary incidents occurring at each public school. In the wake of incidents of school violence, many parents and educators argue that there are too few counselors in schools (Winter, 2005).

students' behavioral and mental health issues. Counselors typically meet with students either one-on-one or in small groups (Adelman & Taylor, 2003), though some counselors will work with entire classrooms of students or assist teachers with lessons promoting students' social and emotional development. Certification requirements for public school counselors vary only slightly across states, with most states requiring counselors to possess a graduate degree in counseling or school psychology (*Requirements for Certification…*, 2001; ASCA, 2006). As of the 2001-02 school year, there were more than 40,000 elementary school counselors employed in the United States, but more than 30% of all public school districts offering elementary schools did not employ any elementary-level counselors (based on Common Core of Data, 2005).

Researchers lament that "there are very large portions of the country where school-based mental health and empirically supported treatments are completely absent" (Evans & Weist, 2004). In addition, funding for school counseling could be reduced in the near future as districts are forced to cut their budgets due to financial pressure and as schools respond to school accountability programs required under the *No Child Left Behind Act* (Whitson, 2002; Zins et al., 2004). States and districts might decrease funds for counseling programs because they can cut these programs with relatively little political fallout and they may believe that counseling programs are not strongly related to students' test scores. Counseling cutbacks may be particularly common in places where budgeting decisions are decentralized and where superintendents and principals face significant pressure to simultaneously decrease spending and improve students' test scores. In many large urban districts, such as New York City, elementary school principals have recently received increased control over budgeting so that they must sacrifice other school-level services if they choose to offer any counseling to children. Many school counselors are concerned about the future of their profession in light of schools' shifting priorities. Less than two years after the passage of the *No Child Left Behind Act*, the American School Counselor Association adopted a new national model for counselors that emphasized counselors' roles in supporting students' academic growth (ASCA, 2003).

Combining multiple data sets, including newly assembled state-level policy data, this research project is the first national study of the provision, financing, and effects of elementary school counselors. Estimates reveal that about 13 percent of U.S. public school students receive school-site counseling services during third grade. Children who are male, non-Asian, live with only one parent, or have parents that recently became divorced or separated are much more likely to receive counseling. Children are much more likely to receive counseling if their state directly subsidizes counselors or even simply recommends a minimum counselor per student ratio.

Controlling for students' initial test scores during the fall of kindergarten and for various other factors, greater availability of school-site elementary counseling services due to these state policies is associated with higher student test scores and better mental health and behavior among third grade students, as measured by students' survey responses. These positive correlations provide descriptive evidence that students in states with more aggressive elementary counselor policies are faring better than similar students in similar schools in other states. Given that inter-state variation in counselor policies may be correlated with omitted state-level variables affecting student outcomes, these findings alone should not lead to strong causal claims about the impact of elementary counselors.

To better identify the causal effects of elementary counselors, additional analyses reveal how changes in states' elementary school counselor policies over time have influenced school climate, as measured by teachers' responses to numerous survey questions. The identification of these counselor effects exploits the timing of states' policy changes. Additional analyses ensure that this identification strategy is not biased due to endogenous policy adoption or omitted state-level variables; these additional analyses employ a triple differences approach using changes in high school teachers' responses to further control for general statewide trends in teachers' attitudes. The adoption of elementary school counselor policies is one of the few instances in which states change elementary schools' resource allocation without substantially changing resource allocation at high schools. If anything, states' non-random adoption of elementary counselor policies seems to typically put a downward bias on estimates of the magnitude of the counselor policy effects, presumably because states are more likely to adopt elementary

counseling policies when their schools face more severe challenges related to student behavior. Both the difference-in-differences and triple differences estimates suggest that adopting a counselor subsidy or minimum counselor-student ratio reduces the fraction of teachers reporting that their instruction suffers due to student misbehavior and reduces the fractions reporting problems with students physically fighting each other, cutting class, stealing, or using drugs.

The next section reviews the literature related to elementary school counseling and young children's mental health. Section 3 describes states' public elementary school counselor policies, examines the prevalence of elementary counseling among various types of children and public schools in the United States, and then examines the relationship between state counseling policies and the fraction of students receiving counseling services. Section 4 examines the effects of the adoption of counseling policies on teachers' views concerning the extent to which student misbehavior is a problem at the school, and Section 5 concludes.

2. Related literature

This paper's analyses relates to two literatures: (i) studies of the rates of children's mental health problems, and (ii) studies of the impact of school-site interventions and services on students' test scores, behavior, and mental health status.

2.1 Rates of mental health problems

Some of the most comprehensive studies of mental health problems and treatments among young children in the United States come from the MECA survey, which is fully titled the Methodology for Epidemiology of mental disorders in Children and Adolescents. This survey examined various types of mental services used by children in four cities, asking parents extensive questions about the precise nature of their children's mental health services and health insurance status. In the MECA sample, 13 percent of children between the ages of 9 and 17 had an anxiety disorder causing at least mild impairment, while 6.2 percent had mood disorders, 10.3 percent had disruptive disorders, and 2.0 percent had substance-use disorders (U.S. Dept. of Health & Human Services, 1999). Children and adolescents who lacked private

health insurance were just as likely to receive mental health services as those with private insurance, often because the uninsured used services in non-clinical settings such as schools and welfare agencies (Glied et al., 1998).

In another study, Sturm, Ringel and Andreyeva (2003) use a multi-state data set, the Urban Institute's National Survey of America's Families (NSAF), to compare mental health need with service use of 6-17 year olds. The NSAF asked parents how often their children used mental health services during the previous twelve months, but it did not ask parents to differentiate between service received in clinical versus non-clinical settings. Sturm, Ringel and Andreyeva found that there is a large amount of between-state variation in rates of children's need for services, service-use, and unmet need.

2.2 Evidence concerning school-site mental health interventions affect on students' academic achievement and behavior

Two prior studies investigate the impact of student-counselor ratios in elementary schools on student outcomes using plausibly exogenous variation in these ratios. Carrell and Carrel (2007) exploit cross-semester variation in the counselor-student ratios in schools across a large Florida school district, variation that is partially influenced by the University of Florida's school counseling graduate students in their practicum and internship assignments. Carrell and Carrell find that a greater counselor-student ratio leads to both fewer disciplinary incidents and a lower rate of recidivism for students who already committed a disciplinary incident. Reback (2009) conducts regression discontinuity analyses exploiting Alabama's statewide policy of fully funding elementary schools' counselors with allocations based on the schools' prior year enrollments, with discrete cutoffs for additional half-time counselor appointments. The regression discontinuity analyses suggest that an increase in counselors leads to rates of suspensions and weapon-related incidents but does not have a substantial effect on average student test scores. It is important to keep in mind that, given their identification strategies, both of those studies' results may reflect the effects of temporary changes in counselor availability at elementary schools, whereas the analyses in this paper may capture more permanent changes in counselor availability. Short term

increases in counselor availability lead to reductions in relatively severe behavioral problems but do not necessarily improve students' routine behavior affecting test scores.

Reviews of earlier, small-scale studies of the effect of counseling interventions on young students' academic outcomes suggest that it is difficult to draw strong conclusions (Prout & Prout, 1998; Whitson & Sexton, 1998). These reviews discuss the limitations of even the best executed randomized studies, such as their short durations, small sample sizes, and subjective outcome measures. Stage and Quiroz's (1997) meta-analysis of non-experimental studies of interventions targeting disruptive classroom behavior reveals that the majority of these interventions were associated with a decline in disruptive behavior, measured either by teacher rating scales or ethnographic observation. Again, it is difficult to generalize from the conclusions of these studies.[2]

3. Elementary counseling services in United States public schools

3.1 State counselor policy data

To obtain information on states' elementary school counselor policies, I surveyed state administrators about elementary school counselor finance policies. During the fall of 2003 and winter of 2004, my research assistants and I emailed and called members of the American Education Finance Association who were listed as working for their state's department of education. We inquired whether school districts in their state received state funding that was specifically targeted for the use of counselors or school psychologists and that was distinct from special education funding.[3] We also inquired whether districts (or schools) in their state were required to employ a minimum number of counselors per elementary school student. Next, we asked them about their states' historical elementary counselor policies and compared their responses with the responses of other members of their state's department of

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[2] See Zins et al. (2004) for an excellent review of the strengths and weaknesses of specific types of emotional learning programs for young children.

[3] The specific questions initiating these inquiries were: (1) In your state, do districts receive funding from the state that is specifically targeted for the use of counselors or school psychologists? (Or, alternatively, does money spent on counselors come out 1-for-1 from other parts of a district's budget?) (2) If districts do receive targeted funding for counselors/psychologists, is this funding distinct from special education funding or is it part of special education funding?

education, as well as with information published by the National Association of School Boards (2005), the American School Counselor Association (ASCA, 2005), and the earlier survey results of Glosoff and Koprowicz (1990). Finally, we compared our information with relevant state legislative code. Any inconsistencies were ultimately resolved through additional communications with state officials.

Elementary school counselor policies vary tremendously across states. Table 1 describes states' policies directly subsidizing elementary school counselors during the 2001-02 school year. Only five of the forty-eight continental states provided aid specifically for elementary school counselors: Alabama, Delaware, Georgia, Nevada, and Texas. Four of these states provided subsidies to all elementary schools, while Texas awarded competitive grants limited to schools in 64 districts.[4]

The expected magnitude of the effect of a counselor subsidy on the provision of counselors is not obvious. If the size of the subsidy is much larger than the amount of local resources that would have otherwise been devoted to counselors, then there will definitely be a large impact. In other cases, the impact could be small if districts primarily use the state subsidies to reduce the amount of local resources devoted to counselors. In practice, however, there is often a "flypaper effect" for government spending: money tends to stick where it is thrown. Hines and Thaler (1995) review the flypaper effect literature, where most studies find that local and state governments increase expenditures by at least 40 percent of the amount of block grants. School districts significantly increase expenditures as a result of state grants (Dee & Levine, 2004; Duncombe & Yinger, 1998). Fisher and Papke (2000) review studies of local government responses to educational grants, finding that most categorical grants are somewhat fungible but still lead to increased local expenditures in the targeted area.

As described in Table 2, during the 2001-02 school year, 12 additional states imposed mandatory minimum counselor-student ratios that apply to elementary-level grades without state aid specifically targeted to counselors. Four of these 12 states required district-wide minimum counselor-student ratios for all grades combined, (Arkansas, North Carolina, North Dakota, & Oklahoma), while Louisiana imposed district-level minimum ratios specifically for students in elementary grades. The other seven states

[4] Texas' grant program was later eliminated due to state budget cuts.

imposed school-level as opposed to district-level minimum ratios for elementary schools (Idaho, Missouri, Montana, New Hampshire, South Carolina, Vermont, & Virginia). Given that a substantial fraction of overall school operating expenditures in each of these twelve states is funded from state revenues, it would be incorrect to view these mandatory minimum counselor-student ratios as an unfunded mandate. Rather, they are mandates which force districts to allocate some of their state revenues toward elementary counselors.

Seven other states simply recommended that elementary schools maintain a minimum counselor per pupil ratio. Connecticut, Iowa, and Wisconsin suggested that elementary schools should meet the American School Counselor Association's recommendation of one counselor per 250 students, Michigan and Maine suggested that the ratio be one per 300 and one per 350 respectively, and Indiana suggested a minimum ratio of 1 to 600. Tennessee's state education finance formula included allocations to districts that are considered sufficient to hire one counselor per 500 students, but this too was simply a recommended level of provision, as the state aid was fungible and schools were not actually required to hire any counselors. Interestingly, the suggested ratios often call for more counselors per pupil than in states with official policies funding or requiring counselors, implying that some leniency is often required when forcing schools to devote resources to counselors.

The remaining 24 continental states did not subsidize counselors or require or recommend any minimum counselor-elementary student ratio. Many school districts in these states do not employ any elementary-level counselors, especially in California, Illinois, Minnesota, and New York which collectively employ elementary counselors in only about 40 percent of their relevant districts (based on Common Core of Data, 2005). A survey initiated by the California state government estimated that the elementary counselor-per-student ratio in California was as low as one counselor per 3,009 students (Study of Pupil Support Ratios, Programs, and Services, 2003).

3.2 ECLS-K data

The descriptive analyses in this paper use a national sample of more than 9,000 third grade public elementary school students found in the Early Childhood Longitudinal Survey-Kindergarten Cohort (ECLS-K). The ECLS-K (2004) is a panel data set that began by sampling kindergarten students during the 1998-99 school year, and then followed up on them in the spring of 2000 (first grade) and the spring of 2002 (third grade). The ECLS-K used stratified sampling methods, with schools containing classrooms randomly selected from counties or county areas and then kindergarten students randomly selected from these schools (ECLS-K, 2005). Some first grade students were added during the spring 2000 sample wave to account for first grade students attending schools that did not offer kindergarten classes (ECLS-K, 2005). The data set assigns a sample probability weight to each observation so that, even with some attrition and missing values for certain survey components, researchers can weight their analyses to attempt to find estimates that are nationally representative for all children attending kindergarten during 1998-99 or for all children attending first grade during 1999-2000 (ECLS-K, 2005).

The ECLS-K analysis below focuses on outcomes for spring of 2002 when the vast majority of the ECLS-K sample attended third grade. Although approximately ten percent of the sample attended second or fourth grade that year due to retention or early promotion, I keep these off-grade students in the sample so that the estimates are nationally representative of the first grade class of 1999-2000 and so that the estimates are not biased from selection issues. For ease of description, I refer to the 2001-02 observations of these students as "third grade" observations.

The ECLS-K outcome of interest for this paper is teachers' responses to the survey question asking whether their third grade students received "individual or group counseling from a trained professional" at the school during the school day (ECLS Spring 2002 Teacher Questionnaire, 2002).[5] Teachers gave valid responses to this question for 9,195 public school students in the sample, spread across 3,880 classrooms in 1,609 schools. Teachers' responses suggest that 13.5 percent of third grade ECLS-K students received counseling. Teachers should have a relatively accurate sense of whether their

[5] I am very grateful to Dr. Jerry West and his colleagues at the National Center for Education Statistics for granting my request to add this specific question to the third grade teacher survey. Similar information is not available in the earlier waves of the ECLS-K, (kindergarten and first grade).

students are receiving school-site services, particularly among third grade students who typically stay with the same teacher during most of the school day.[6]

Given that the elementary school counselor policies examined in this paper are policies designed to make greater counseling services available to the general student population, it may be important to confirm that states with these policies do not tend to have more or less extensive special education services than other states. Fortunately, the ECLS-K contains additional information for any student with an individualized education program (IEP), a record required by federal law for each student receiving special education or related services. For students with IEP's, the ECLS-K contains survey responses from a special education teacher about the diagnoses of the student's disabilities and the prescribed services to address these needs.[7]

3.3 Rates of counseling of ECLS-K third grade students

Using the ECLS-K data and appropriate cross-sectional sample weights, Figure 1a reports estimates of the rates of counseling for various types of third graders attending U.S. public schools. For each category, the left-most group is the baseline category and the remaining groups' bars are shaded more darkly if the difference in rates of counseling between this group and the baseline group is statistically significant.

There is moderate variation in rates of counseling across racial groups, with 14.0 percent of White students, 15.9 percent of African American students, 9.8 percent of Hispanic students, 6.8 percent of Asian students, and 15.8 percent of 'other race' students receiving counseling. The lower rates of counseling among Hispanics, and even lower rates among Asians, are each different from the rates among White students at the .01 level of statistical significance. Asian children's cultural heritages often tend to discourage externalizing problems and/or seeking help for problems (Ho et al., 2007; Serafica, 1999; Yeh

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[6] Teachers' responses in the ECLS-K concerning school-site counseling are likely to be more accurate than parents' responses used in other surveys. One study of the MECA data showed inconsistent responses given by adolescent children and their parents (Leaf et al., 1996).

[7] Using the IEP portion of the ECLS data, Schneider & Eisenberg (2006) examine patterns of ADHD diagnoses and find that these diagnoses are more prevalent in states with more extensive school accountability programs.

et al., 2004), so this could at least partially explain the lower rates of counseling among Asian elementary students.

Children's family structure is also correlated with rates of receipt of counseling. Students are more likely to receive counseling if their birth-parents were not married when the student was born (16.9 percent counseling rate versus 11.7 percent counseling rate) or there was only one parent in the student's household when the student was in first grade (15.8 percent versus 11.8 percent). Whether the student was an only child, had one or two siblings, or had more than two siblings when the student was in first grade was not associated with substantial or statistically significant differences in rates of counseling during third grade. The type of after-school care received by students during first grade was also not associated with statistically significant differences in counseling, though the rate of counseling was slightly higher (14.2 percent) for students who attended a daycare center after school or were supervised by a non-relative adult (15.0 percent).[8]

Changes in household structure between the spring of first grade and the spring of third grade account for relatively large differences in rates of counseling. Either the loss of a parent from the household (20.0 percent counseling rate) or the addition of a parent to the household (15.8 percent) was associated with higher rates of counseling, and these trends are related to higher rates of counseling among students whose parents became separated or divorced (17.6 percent). Changes in the number of siblings in the household mildly increase students' likelihood of receiving counseling, though it is difficult to interpret these differences because one cannot differentiate between the many reasons for changes in the number of siblings (e.g., births, moving out due to graduation, moving out due to divorce, etc.). Changing residential locations can pose challenges to young children and is associated with unstable household structure, so it is not surprising that students who changed residences at least once between the spring of first grade and the spring of third grade were more likely to receive counseling (16.9 percent versus 12.5 percent).

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[8] Relatively little is known about the impact of relative versus non-relative after school supervision, and the slightly higher rates of counseling among students attending center-based after-school care may reflect affluent parents preferring to use a mix of after-school activities rather than center-based programs (Waldfogel, 2006).

Counseling services also seem to accompany special education services. More than 26.4 percent of third grade students with Individualized Education Plans (IEP's), formal documents establishing eligibility for special education services, receive counseling services. Not surprisingly, counseling rates are even higher (62.7 percent) if a student's IEP specifically cites a need to modify behavior. The reported counseling rates for special education students may be due to teachers observing these students meeting with special education psychologists, as opposed to meeting with school counselors or school psychologists serving the general student population. It is therefore worth noting that the same explanatory variables listed above continue to predict receipt of counseling services if one excludes special education students from the sample.

Figure 1b displays rates of counseling broken down by state elementary school counselor policy and by characteristics of third graders' schools and school districts. Counseling rates are substantially higher in states that recommend that schools adopt a minimum number of counselors per student (17.7 percent) and are especially high in states that directly subsidize elementary counselors (20.4 percent). In terms of geography, counseling rates were slightly lower in the Northeast and West regions of the United States and counseling rates were slightly higher in medium-sized cities than in large cities, small cities, or rural areas. Counseling rates are relatively high in middle class communities, defined by either household income or the fraction of adults with bachelor's degrees. Counseling rates are lowest in districts with moderate operating expenditures per pupil but similar across high-spending and low-spending districts. This trend might result from the greater resources of higher spending districts and the greater perceived need for counseling services in lower spending districts.

While Figures 1a and 1b reveal the raw, student-level relationships between rates of counseling and various characteristics, the next analysis explore whether each of these factors influence the school-level percentage of students receiving counselors conditional on the other factors. This analysis will also provide the "first stage" for the next section's analysis of the relationships between counselor availability and student outcomes. I estimate the following regression model for school *j* in state *s*:

(1) $$\%Counseled_{js} = \gamma_0 + S_s\gamma_1 + X_j\gamma_2 + \varepsilon_{js}$$

where $\%Counseled_{js}$ is the percentage of third-grade students receiving counseling at school *j*, and S_s is a vector of state-level control variables including counselor policies, the statewide fraction of public school spending funded by state tax revenues, and Census region fixed effects. The X_j vector includes assorted school-level variables including the school-level variables used in Figure 1b as well as the estimated school-level mean variables for the student-level variables listed in Figure 1a. These school-level independent variables also include controls for student ability, as proxied by linear and squared terms for mean student scaled performance on math and reading assessments conducted during the fall of kindergarten. All school-level means and proportions of students are computed by finding weighted averages of student-level variables based on the appropriate sampling weights. The school-level observations are also weighted so that the results are nationally representative of third grade students who attended first grade during the 1999-2000 school year.

Table 3 presents summary statistics of all of the independent variables from equation (1), as well as their estimated coefficients and corresponding standard errors and p-values. Direct subsidies of elementary counselors continue to have the strongest effect on counseling rates of any state policy, as they are associated with a more than 10 percentage point increase in the percentage of students receiving counseling compared to schools in states without any elementary counseling policy. Requiring or recommending a minimum ratio of counselors per students is also associated with increased counseling coverage, though the estimated effects are not as statistically significant as the impact of a subsidy policy. As with the raw correlations presented in Figure 1b, the recommended ratios appear to induce greater counseling coverage than the required ratios, which may reflect the higher ratios given in recommendation states than in required ratio states. The three counselor policy variables are jointly significant at the .001 level.

Controlling for all of the other independent variables in Table 3, there is greater counseling coverage in schools that are located in states with centralized public school financing, located in districts with lower fractions of adults who are high school dropouts, and not located in large cities. There are also especially large increases in counseling coverage if a higher fraction of students' parents became divorced

or separated between first and third grade, with a one percentage point increase in this fraction associated with about a 1.3 percentage point increase in counseling coverage. This is the only type of household composition variable for which a one percentage point increase in the fraction of students in that category leads to a more than one percentage point increase in the fraction of students receiving counseling. Throughout most of the distribution of mean fall Kindergarten test scores, increases in mean reading scores holding mean math scores constant are associated with declining counseling coverage, whereas the opposite is true for increases in mean math scores holding reading scores constant. Schools with greater counseling coverage thus seem somewhat similar to other schools in terms of students' overall initial skill levels, though their students may be relatively stronger than expected in math and weaker than expected in reading.

4. State counselor policies and student outcomes: Evidence from the ECLS-K

Given the strong relationship between state counselor policies and the provision of counseling services, the next step is to examine the link between greater counselor availability and student outcomes. If between-state variation in counselor policies were exogenously determined and unrelated to important, omitted state-level variables, then one could use these policies as instrumental variables in a model revealing the causal effect of counselor availability on student outcomes. However, states' counselor policies may be related to unobserved state-level variables, such as other types of child services in the state. States' counselor policies may also be endogenous due to direct policy responses to a latent need for mental health services.

While there are almost always important differences across states, there are not many obvious links between stronger counselor policies and observed state-level characteristics influencing student outcomes. Western states are less likely to adopt elementary counselor policies and smaller states are more likely to adopt policies. Aside from that, states' elementary counselor policies do not appear to be related to variables that would have obvious systematic effects on student outcomes. The fall kindergarten test scores of students in the ECLS-K data are fairly similar across states with different policies; states

with counselor subsidies actually have slightly lower fall kindergarten math scores than all other types of states, while states with recommended counselor-student ratios have higher scores in math but not in reading. Reduced-form evidence does not suggest a link between states' elementary counselors and other mental health policies; for example, states with different types of counselor policy (or no policy at all) are roughly equally likely to require insurers to offer mental health services.[9] While there will inevitably be some unobserved differences across states offering different types of policies, estimating a two-stage instrumental variables model may be interesting for descriptive purposes, as it will at least reveal the correlation between greater induced availability of counseling and student outcomes.

The impact of counseling availability on student outcomes is potentially complicated by peer effects, whereby students will be influenced by counselor availability because their peers are more likely to receive counseling services. Given this complexity, the regression model examining counselor availability and ECLS-K outcomes continue to uses data that have been aggregated from the child level to the school level, so the coefficients might be influenced by both direct and indirect effects of counselor availability on students.

Table 4 displays estimated second-stage coefficients of the predicted values for $\%Counseled_{js}$ from two-stage least squares models using equation 1 as the first-stage equation with the counselor policy indicator variables omitted from the second stage. Table 4 shows estimates for assorted second-stage dependent variables for these two-stage least squares models, with standard errors that are adjusted for state-level clustering. For ease of comparison, the effect sizes are reported as the standard deviation change in the dependent variable associated with a five percentage point increase in the fraction of students receiving counseling at the school. Based on the first-stage analyses, this five percentage point increase is a plausible effect of a counseling policy change. Greater counseling availability due to aggressive state policies is associated with higher third grade test scores in both math and reading, even after controlling for other variables such as fall kindergarten test scores. A five percentage point increase

[9] Frank and Glied (2006, p. 86) provide information on states' mental health insurance requirements. About half of all states in each category of elementary counselor policy either mandate a benefits package or mandate availability of services from mental health professionals. The one small exception is that states that mandate a minimum school-level counselor-student ratio are more likely to also impose mental health insurance mandates (five out of the seven states in this category have a mental health insurance mandate).

in counselor availability is associated with a .11 standard deviation increase in the school-level mean standardized math score and a .07 standard deviation increase in the school-level mean standardized reading score, with both estimates statistically significant at the .05 level. There is not any relationship between increased counselor availability and the use of Individualized Education Plans, suggesting that counselors for the general student population may indeed be used as a completely separate service from psychologists who deal exclusively with special education students.

Greater counselor availability is also positively related to teachers' mean assessments of their students' social attitudes or behaviors, as measured by five different social rating scales, though none of these relationships are statistically significant. Each of these scales aggregates information from teachers' responses to several different survey questions about a student.[10] These results might understate the relationship between counseling and student mental health, because teachers might tend to grade their students' social attitudes and behaviors on a curve. Another form of teacher assessment also suggests beneficial but statistically insignificant effects of counseling availability: a five percentage point increase in counseling rates is associated with a .04 standard deviation decrease in the fraction of students that the teacher reports are "seldom" or "never" working to the best of their abilities. In addition, greater counseling availability is associated with a decline in the fraction of parents who are concerned that their children are less active than other children.

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[10] As the ECLS-K user manual explains, each of the following five scales have multiple parts: "The **Approaches to Learning** scale measures behaviors that affect the ease with which children can benefit from the learning environment. It includes six items that rate the child's attentiveness, task persistence, eagerness to learn, learning independence, flexibility, and organization. In the third- and fifth-grade administration, an item 'child follows classroom rules' was added to the SRS to increase variance in the self-control scale. The **Self-Control** scale (Teacher SRS) has four items that indicate the child's ability to control behavior by respecting the property rights of others, controlling temper, accepting peer ideas for group activities, and responding appropriately to pressure from peers. The **Interpersonal Skills** scale (Teacher SRS) has five items that rate the child's skill in forming and maintaining friendships; getting along with people who are different; comforting or helping other children; expressing feelings, ideas, and opinions in positive ways; and showing sensitivity to the feelings of others. **Externalizing Problem Behaviors** scale (Teacher SRS) includes acting out behaviors. The kindergarten and first-grade forms have five items on this scale that rate the frequency with which a child argues, fights, gets angry, acts impulsively, and disturbs ongoing activities. To increase the variance on this scale, an item was added in third and fifth grade asking about the frequency with which a child talks during quiet study time. The **Internalizing Problem Behavior** scale (Teacher SRS) asks about the apparent presence of anxiety, loneliness, low self-esteem, and sadness. This scale comprises four items." (ECLS-K, 2004)

Students' own survey responses about attitudes and behavior are particularly interesting outcomes, given that they would not suffer from the measuring on a curve issue that could diminish between-school variation in teachers' survey responses. Counseling availability is strongly related to improvements in students' tendencies to externalize or internalize problem behaviors, with a 5 percent increase in counseling coverage associated with a .12 and .13 standard deviation improvement in these problem behavior indexes respectively. Greater provision of counselors due to state policies is associated with a moderate increase in students' interest and confidence in math but not for reading or for academic subjects in general, which is consistent with the larger effects found for math test scores than for reading test scores. Greater counseling availability is actually associated with worse self-reported outcomes for how well students get along with their peers, though this relationship is not statistically significant.

To reiterate, these results should be interpreted with caution as they might be biased due to omitted state-level variables. On the other hand, the beneficial effects associated with greater counseling availability reported in Table 4 are robust to the inclusion of various types of additional control variables, such as prior socio-emotional ratings of the students as reported by their first grade teachers.

5. State counselor policies and teachers' perceptions of school climate: Difference-in-differences evidence from the SaSS

5.1 Data Description

Given that states' adoption of aggressive elementary counselor policies could be correlated with important, omitted state-level variables, which could cause the estimates in Table 4 to either overstate or understate the effects of counselor policies, it may be important to instead examine how the adoption of these policies are related to changes in outcomes over time. Fortunately, another NCES data set, the Schools and Staffing Survey (SaSS), includes data with outcomes for several years spanning the period during which most states adopted their relatively aggressive elementary counselor policies. The SaSS contains teachers' survey responses to a battery of questions concerning the environment in their school and in their classroom. The SaSS is not a balanced panel data set, but rather it contains representative

samples with more than 30,000 public school teachers surveyed during each wave. Using sampling weights reported in the SaSS, one can find estimates that are representative at the national level and at the state level for the sampled states. To investigate the impact of states' counseling policies between 1987 and 2003, I use a pooled cross-section of SaSS data from the 1987-88, 1989-90, 1993-94, 1999-2000, and 2002-03 school-year waves. As shown in Tables 1 and 2, eight states adopted significant policies during this time period which would increase the provision of counseling at the elementary school level, (Alabama in 1989, Georgia in 2000, Louisiana in 1991, Missouri in 1990, Nebraska in 1996, Nevada in 1995, Oklahoma in 1991, and Texas in 1991). While most state educational policy reforms create changes at all grade levels, seven of these eight state policies were exclusively targeted at the elementary-level, with Oklahoma's reform as the one exception. I combine the SaSS data with states' elementary counselor policy information and with school-level control variables from the NCES' Common Core of Data.[11]

5.2 Empirical Models

I use the SaSS data to estimate four different types of models concerning the impact of counselor policies on teachers' views of the climates in their schools and classrooms. Each of these models examines a binary outcome based on teachers' responses to a survey question concerning school climate or classroom climate. Given that these models examine the impact of time-varying state-level policies, the standard errors in all of these models are adjusted for clustering at the state-year level. This adjustment to the standard errors should suffice, because there are not many years of data in the analysis and serial autocorrelation due to unobserved factors should be relatively low given that the SaSS surveys a new set of teachers in each sample wave. First, for the sake of comparison with the ECLS-K results from the last section, I estimate models which examine the importance of within-Census region variation in states' counseling policies. The first set of results are thus based on maximum likelihood estimation of the following probit model for a sample restricted to elementary school teachers:

[11] The Common Core of Data variables come from the same school year as the SaSS data, except for the 1987-88 SaSS observations which are paired with data from the 1998-89 Common Core of Data because that was the first available year of the Common Core of Data.

(2) $$Y_{it} = \beta_1(\text{ElemCounselorPolicy}_{it}) + X_{it}\beta_{2r} + R_i T_t\alpha + e_{it,}$$

where Y_{it} is one of several dichotomous dependent variables based on teachers' survey responses, and $\text{ElemCounselorPolicy}_{it}$ is a dummy variable equal to one if teacher *i*'s state either subsidizes, requires, or recommends a minimum number of elementary counselors during year *t*. This variable does not equal one for requirements spread across all grade levels, (as in Arkansas, North Carolina, and North Dakota), but does equal one for requirements that specify a minimum amount of counseling services at the elementary level. The X_{it} vector contains a set of control variables for year *t* for teacher *i*'s characteristics and for characteristics of teacher *i's* school that year. The teacher-level control variables are linear and squared terms for the teachers' age, years of teaching experience, and real base salary,[12] as well as indicators for gender and for whether the teacher's ethnicity is white and non-Hispanic.[13] The school-level control variables are the percent of students enrolled in Kindergrarten through 2nd grade, the percent of students enrolled in 3rd through 5th grades, the percent of students who qualify for free school lunches based on their families' income, the percent of students whose race is either Black or Hispanic, and the district-level mean operating revenues per student. In equation 2, these teacher-level and school-level control variables are allowed to have Census-region specific coefficients, (for each region *r* there is a unique vector of coefficients, β_{2r}). This model also controls for Census-region-by-year fixed effects by including the vector of four indicators for Census regions, R_i, interacted with the vector of five indicators for year, T_t.

Second, by exploiting the timing of adoption of elementary counselor policies, I find difference-in-differences estimates by controlling for state fixed effects. These difference-in-difference estimates provide unbiased estimates of the effects of counseling policies if important, omitted state-level variables

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[12] Base salary is adjusted for inflation using the March Consumer Price Index for each school year. In addition to the linear and squared terms for base salary, I also include an indictor equal to one for the few cases in which the teacher's salary is missing or bottom-coded or as low as the $5,000 cutoff for bottom-coding in the 1999-2000 SaSS sample wave. These observations are assigned values of zero for the linear and squared salary terms.

[13] Controlling for these teacher-level characteristics alters the interpretation of the estimated effect of counseling policies, because this removes any indirect effects on statewide trends in teachers' responses caused by counseling policies' impact on the composition of teachers in a state. In practice, the estimates remain very, very similar if one excludes all of these teacher-level control variables from the models below.

are time invariant. The second set of results are thus based on maximum likelihood estimation of the following probit model for a sample of elementary school teachers:

(3) $$Y_{it} = \beta_1(\text{ElemCounselorPolicy}_{it}) + X_{it}\beta_2 + S_i\varphi + T_t\delta + e_{it,}$$

where S_i is a set of state fixed effects based on the location of teacher *i*'s school.

Third, by further exploiting changes in elementary schools counselor policies that did not coincide with changes in policies directly affecting high schools, one can find triple differences estimates by including both elementary and high school outcomes and controlling for state-by-instructional-level, state-by-year, and year-by-instructional level fixed effects. These triple differences estimates rely on the less stringent assumption that any important, omitted state-level variables are either time invariant or have similar effects on elementary schools and high schools. The triple differences estimates could actually be more severely biased than the difference-in-differences estimates if the timing of states' adoptions of elementary counseling policies corresponds with the timing of more general shifts in resources away from high schools toward elementary schools, but this does not seem to occur. For the seven states that added counselor policies or requirements solely at the elementary level, other types of resources did not increase at the elementary level compared to the secondary level.[14] The third set of results are based on maximum likelihood estimation of the following probit model including a sample of both elementary school and high school teachers:

(4) $$Y_{it} = \beta_1(\text{ElemCounselorPolicy}_{it}) + X_{it}\beta_2 + \beta_3(\text{Elementary}_{it})(\text{ElemCounselorPolicy}_{it}) + (\text{Elementary}_{it})X_{it}\beta_4 + S_iT_t\phi + (\text{Elementary}_i)S_i\lambda + (\text{Elementary}_i)T_t\theta + e_{it},$$

where β_3 is now the coefficient of interest, the additional effect of having an elementary counselor policy when teacher *i* teaches at the elementary level rather than the high school level. This model and the remaining model below omits Oklahoma observations from the sample, given that Oklahoma is the one state that simultaneously expanded counseling at both the elementary and secondary levels. The control

[14] Comparing the three years prior to the policy change to the three years after the policy change, for example, changes in the ratios of mean elementary class size to mean high school class size were statistically insignificant in each of these seven states.

variables in equation 4 have school-level specific effects,[15] state-by-year fixed effects are captured by ϕ, elementary-level-by-state fixed effects are captured by λ, and elementary-level-by-year fixed effects are captured by θ.

If elementary counseling policies not only have beneficial effects on elementary-level outcomes but ultimately improve high school outcomes, then these triple differences estimates may be biased because they subtract away the long-term positive effects of elementary counselors on high school students. The final model thus slightly refines the third model by controlling for the potential impact of an elementary school counselor policy adoption on high school teachers' response if the elementary policy adoption occurred at least five years earlier. (It seems reasonable to assume that it would take at least five years for the long-term effects of elementary-level policies to persist into high school, as most students receiving the treatment in elementary school would reach high school at least five years later.) The fourth and final set of results are thus based on maximum likelihood estimation of the following probit model:

(5) $$Y_{it} = \beta_1(\text{ElemCounselorPolicy}_{it}) + X_{it}\beta_2 + \beta_3(\text{Elementary}_{it})(\text{ElemCounselorPolicy}_{it}) + (\text{Elementary}_{it})X_{it}\beta_4 + \beta_5(\text{HighSchool}_{it})(\text{ElemCounselorPolicy}_{it-5}) + S_iT_t\phi + (\text{Elementary}_i)S_i\lambda + (\text{Elementary}_i)T_t\theta + e_{it},$$

where HighSchool_{it} is a dummy variable equal to one if teacher *i* taught in high school during year *t*.

Table 5 displays frequencies and sample sizes for the dependent variables used in these models. I chose variables which may theoretically be influenced by counselor policies and which could be constructed based on nearly identical questions across all of the survey years. While the survey questions allowed respondents to choose one of several responses, the main results below are based on probit models for constructed dichotomous breakdowns rather than based on ordered probit models. Especially for the triple difference models, ordered probit models would require unrealistic assumptions concerning uniform effects of the independent variables across outcome levels. The statistical significance of estimates from ordered probit models are fairly similar to those obtained below from the corresponding

[15] All control variables enter the equation both individually and interacted with the elementary-level indicator variable, except for the fraction of the students in the school enrolled in grades K-2 and grades 3-5 which only enter with the elementary-level interaction term.

probit model results displayed below, which makes sense given that the estimated effects tend to be in the same direction for the two probit models.

5.3 Results

5.3.1 Main Estimates

Table 6 displays the results from probit model estimation of equations 2 through 4 for each type of teacher survey response. Columns 1a through 4a display estimates of the effect of counselor policies on the likelihood that teachers report that something was at least a minor problem at their school, while Columns 1b through 4b display the estimated effect on the likelihood that teachers report that something was a moderate or severe problem. Each panel of each column displays the results from a unique model, with the estimated coefficient of the relevant counselor policy variable, (β_1 of equations 2 and 3 for columns 1 and 2, β_3 of equations 4 and 5 for columns 3 and 4), followed by the corresponding standard error in parentheses, followed by the mean marginal effect associated with this coefficient. The coefficients include asterisks based on the p-values of the one-tailed hypothesis tests concerning whether counselor policies reduce the likelihood that teachers report that various issues are problems at their schools. In almost every specification, the results are consistent with a beneficial impact of states' elementary school counselor policies on teachers' perceptions of school climate.

The first panel of results suggests that states' elementary counselor subsidies or requirements cause teachers to be less likely to report that student misbehavior interferes with their teaching. As is often the case in the rest of Table 6, the estimated effect of counseling policies is relatively small in the models that do not control for state fixed effects, (columns 1a and 1b), and is much larger in magnitude and more statistically significant in the other models. The relatively small effects in columns 1a and 1b of Table 6 suggests that the results from similar models in Table 4 might understate the full benefits of counseling policies; there may be unobserved, state-level variables that are positively correlated with adopting these policies and negatively correlated with beneficial outcomes. In the difference-in-differences models, there are fairly large estimated effects of counseling policies on reports of student

misbehavior interfering with their teaching, with the addition of a policy causing a 3.0 percentage point decline in the fraction of teachers expressing some concern over this issue and a 2.8 percentage point decline in the fraction of teachers expressing even higher levels of concern. Comparing these mean percentage point changes with the frequencies displayed in Table 5, these effects are associated with a five percent reduction and an eight percent reduction respectively. At the .10 level of significance, one can reject the null hypothesis that counseling policies do not influence teachers' perceptions of student misbehavior in favor of the alternative that counseling policies have beneficial effects. The triple differences models continue to suggest that counseling policies reduce teachers' concerns that student behavior interferes with teaching, and the magnitude and statistical significance of these estimates are generally greater than in the difference-in-difference models. In the triple differences model that controls for state-by-year, state-by-instructional-level, and instructional-level-by-year fixed effects and also controls for the potential long run impact of elementary counseling policies on high school teachers' responses, estimates suggest a 5.3 percentage point reduction in at least minor problems and a 3.8 percentage point reduction in more serious concerns. For each of these estimates, at the .01 level, one may reject the null hypothesis that counseling policies do not influence teachers' responses in favor of the alternative that counseling policies have beneficial effects.

For the other teacher survey responses concerning minor problems examined in Table 6, the triple differences estimates are sometimes larger in magnitude than the difference-in-differences estimates, though the gap in magnitudes are usually small considering the standard errors of these estimates. The exact timing of states' adoption of counseling policies thus *might* be weakly correlated with omitted variables associated with negative teacher responses, (adoption of the elementary policies tends to be immediately followed by high school teachers reporting worse things about their schools' climates, ceteris paribus), but one cannot be very confident about this.

Elementary counseling policies have large beneficial effects for reducing the rates at which teachers are concerned about numerous issues, including physical conflicts with students, students cutting class, robbery and theft, and student drug abuse. For each of these outcomes, the differences-in-

differences and triple differences models all indicate mean marginal effects exceeding a one percentage point reduction in reported concern over problems. While 26.3% of elementary teachers feel that physical conflicts are a moderate or severe problem, the point estimates suggest that adopting an elementary counselor policy can reduce this rate by between 3.2 and 5.2 percentage points. While only 21.1% of elementary teachers feel that students cutting class is at least a minor problem at school, adopting an elementary counselor policy reduces this rate by as much as 7.1 percentage points. While only 11.7% of elementary teachers feel that robbery or theft is a moderate or severe problem, adopting an elementary counselor policy can reduce this rate by between 2.4 and 3.2 percentage points. Less than 20% of elementary teachers are concerned about student drug abuse, but estimates suggest that counseling policies reduce this rate by as much as 9.3 percentage points. For each of these outcomes, at the .10 level of significance or better, one can reject the hypothesis that counselor policies do not affect teachers' responses in favor of the hypothesis of a beneficial effect of counselor policies. The triple differences models also suggest a fairly large but statistically insignificant reduction of more than 2 percentage points in the rates of teachers expressing a moderate or severe concern over student tardiness.

The estimated effect of counselor policies on teachers' concerns over vandalism of school property are in the predicted direction and statistically significant for at least mild concerns but not for more serious concerns. The strongest evidence concerning effects on vandalism are in the triple differences models; while 63.9% of teachers express a mild concern over vandalism, these estimates suggest that this rate decreases by about 7 percentage points after the adoption of an elementary counselor policy. The estimated effect of counselor policies on student absenteeism are also in the predicted direction and are statistically significant for the triple differences model predicting whether teachers express at least a mild concern. Interestingly, the magnitude of the estimated effects on absenteeism are less than the magnitude of the effects specifically on students cutting class. It is possible that elementary counseling policies increase students' willingness to attend school and to attend classes without necessarily improving their physical health, so it is the discretionary aspect of student attendance that teachers feel improves when their state has a more aggressive elementary school counseling policy.

These policies are sometimes also associated with declines in concerns over teacher absenteeism. The largest effects on teacher absenteeism are found in the triple differences models predicting whether teachers feel that this is at least a minor problem; while 43.8% of elementary teachers agree that this is a problem, an elementary counseling policy reduces this rate by either 3.3 or 4.8 percentage points in these models. A higher rate of teacher attendance is a plausible spillover effect from improved student behavior due to increased availability of counselors.

To provide a sense of the control variables' coefficients, Table A.2 in the Appendix displays the other estimated coefficients for the model corresponding with column 4a of Table 6, with teachers' mild concern over student misbehavior as the dependent variable. Based on the estimated coefficient of the $(HighSchool_{it})*(ElemCounselorPolicy_{it-5})$ variable, -.086 with a standard error of .060, there may be some long term benefits of elementary counselors in terms of reducing student misbehavior in high school. These and other long term effects are discussed in more detail in the next subsection below. As for the school-level control variables, a higher fraction of students who are eligible for free lunches, a measure of the poverty rates of children's families, is associated with a greater fraction of teachers who feel that student misbehavior interferes with teaching. The same relationship holds for the fraction of ethnic minority students, those whose ethnicity is Black or Hispanic. Each of these estimates is statistically significant at the .01 level. These relationships exist at both elementary schools and high schools, with elementary teachers' responses more sensitive to student poverty levels and less sensitive to students' ethnicities than high school teachers' responses. For elementary teachers, having a higher fraction of enrollments concentrated in earlier grades is associated with teachers being less likely to be concerned with student misbehavior. Holding other factors constant and controlling for state-by-year fixed effects, school district spending per pupil is not significantly related to teachers' concerns about student misbehavior. The teacher-level control variables, however, are almost all statistically significant predictors of teachers' concerns. Holding other factors constant, elementary-level teachers are less likely

to be concerned about student misbehavior if these teachers are female, non-white, lower paid, more experienced, and/or older.[16]

5.3.2 Timing and Duration of the Estimated Effects

As one would expect, the estimated beneficial effects of expanding counselors occur sharply, as similar effects do not occur in the period immediately preceding the policy. To examine this issue, I estimated triple differences models including an interaction term between an indicator for teaching at the elementary level and for teaching in a state that adopts a new elementary counseling policy during the next wave of the Schools and Staffing Survey. The power of this test for leading effects is somewhat limited, because some states adopted their policies before the second wave of the Schools and Staffing Survey and thus do not help to identify leading effects in the difference-in-differences models. The standard errors for this leading indicator's coefficients are up to twice as large as those for the corresponding triple differences coefficients in Table 6, but the results are very consistent with a lack of leading effects. Out of the 17 models, (analogous to those with results in columns 4a and 4b of Table 6), 10 coefficients suggested an increase in teachers' concerns and only 4 coefficients were statistically significant at even the .20 level. This lack of leading effects further supports the argument that states adopting more aggressive counseling policies were not, in general, already experiencing strong improvements or declines in elementary school climate.

As mentioned above, some of the estimated coefficients of the $(HighSchool_{it})*(ElemCounselorPolicy_{it-5})$ term in the models of columns 4a and 4b of Table 6 suggest long-term benefits of elementary counselors related to high school teachers' reduced concerns. For high school teachers' concern over student misbehavior, the estimated mean marginal effects from student cohorts experiencing elementary counseling policies are a 3.0 percentage point decline in mild concerns and a 2.8 percentage point decline in moderate/serious concerns, with one-sided test p-values of .078 and

[16] Based on the quadratic term coefficients, elementary school teachers are at a lower risk of reporting concern over student misbehavior as they gain experience, up until 32.5 years of experience, and as they age, up until 60.7 years of age. Higher base teaching salaries are associated with lower rates of concern until salaries reach about $55,000 (year 2003 $), which is almost the 90th percentile of base salary.

.101 respectively. There is additional evidence concerning long-term benefits for some of the other types of outcomes. At the .10 level, one may accept the one-sided alternative hypothesis of long-term beneficial effects for reductions in moderate/serious concerns over physical conflict between students (*p*-value=.08), vandalism (.04), and student tardiness (.05). The mean marginal effects associated with these estimates are a 2.8 percentage point reduction in high school teachers' concerns over student conflict, a 5.3 percentage point reduction in their concerns over vandalism, and a 5.8 percentage point reduction in their concerns over student tardiness. These long-term effects are notable because the estimated effects of other early education policy interventions often disappear by the time students advance to later grades.

6. Conclusion

The majority of states do not currently require public elementary schools to employ any counselors, but this paper's results consistently suggest that expanding the availability of counselors positively affects student behavior. Greater availability of counselors is also associated with improvements in student learning and in students' mental health, as measured by third grade students' test score gains and these students' responses to a battery of questions concerning externalized and internalized problem behaviors. By generating large and persistent improvements in student behavior, expanded elementary counselor programs may potentially improve student learning during both the early and later grades.

While the estimated effects of counselor policies are substantial, it is difficult to precisely estimate the cost effectiveness of counselors, because most of the dependent variables cannot easily be converted into benefits measured in monetary units. The best identified models document large reductions in teachers' concerns over student misbehavior after the adoption of new, statewide elementary school counseling policies. These survey response patterns may be indicative of very meaningful effects, as longitudinal variation in teachers' survey responses concerning problems such as vandalism are

significantly, positively correlated with longitudinal variation in juvenile arrest rates.[17] Counselors may be very valuable in terms of their preventive cost effectiveness if they reduce truancy and criminal behavior.

Even ignoring the potential preventive cost effectiveness of counselors, the estimates suggest that counselors may be relatively cost effective in terms of their impact on students' test scores alone. Assuming that the estimates in Table 4 do not understate or overstate the causal impact of additional counselors, these estimates help to provide a rough sense of the relative cost effectiveness of hiring additional counselors. The estimates of Table 4 suggest that, among other effects, a 5 percentage point increase in counseling coverage leads to a 0.11 standard deviation improvement in math test scores and a .07 standard deviation improvement in reading scores. (The results in Table 6 suggest that cross-state models like the one used for Table 4 may actually understate the benefits of counselors, so the true benefits might be even larger.) The cost of expanding counseling services so that counselors are able to meet with a 5% greater share of the student population could approach $46 per student per year.[18] Solely considering test score gains and otherwise ignoring behavioral improvements, this relatively modest investment in counselors could thus have larger benefits than those estimated from more costly policies that have been shown to improve student achievement, such as reducing class sizes, hiring teachers with better cognitive abilities, or hiring fewer novice teachers. These test score effects of counselors are measured imprecisely and cannot be interpreted as causal effects in the same way as the evidence concerning how counseling policies reduce teachers' concerns about student misbehavior. More generally, the results suggest that elementary counselors not only improve student behavior but that these

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[17] Longitudinal, within-state variation in public elementary school teachers' concerns over student vandalism is positively related to longitudinal, within-state variation in the arrest rates of 10 to 12 year old children, based on arrests data from the F.B.I. (U.S. Department of Justice, 2009). This relationship is statistically significant at the .05 level. Several of the other teacher response rates, (e.g., student tardiness, teacher absences), are also significantly, positively related to the arrest rates of 10 to 12 year old boys. The effect of counselor policies on short-term and long-term crime rates is beyond the scope of this paper, but I plan to investigate this issue in future work.

[18] Starting counselor salaries typically range from $32,000 to $40,000 a year, and the average additional counselor might cost a school district about $55,000 in terms of salary and benefits. An additional half-time counselor at school of 600 elementary students should be enough to provide additional coverage so that at least 5 percent more of the student population meets with a counselor during each school year, putting the estimated cost of increasing this coverage at about $46 per student. As shown in Table 3, schools in states simply recommending a minimum amount of counseling coverage have an additional 5 percent of their students meet with counselors compared to schools in states without any type of elementary counselor policy.

behavioral improvements cause teachers to feel better about their instructional capacities and could thus plausibly lead to large improvements in student learning. Schools in states with more aggressive elementary counseling policies are doing *something* better for their elementary students: better than similar schools in other states, better than they were previously doing before the policies were adopted, and with more immediate elementary-level improvements than secondary-level improvements.

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Table 1: States that subsidized public elementary school counselors during the 2001-02 school year

State	Description of Subsidy	Initial Year
Alabama	State fully funded counselors are based on the prior year enrollment in the elementary school (average daily membership from the first 40 days of the prior school year): 1-499 students = 0.5 FTE (full-time equivalent) counselor; 500-749 = 1.0 FTE; 750-999 = 1.5 FTE; 1000-1249 = 2.0 FTE; 1250-1499 = 2.5 FTE; 1500 or more = 3.0 FTEs.	1989
Delaware	School districts earned a counselor for each full 150 units of pupils. Units were assigned as follows: 17.4 regular 1-3rd graders equals one unit and 8 learning disabled students equals one unit. School districts also earn state aid for each 250 units of pupils that may be used for counselors or certain other types of expenditures.	pre-1987
Georgia	School districts received $78.40 per elementary school student to hire counselors for grade K-5**.** Districts were required to employ at least one counselor for every 462 FTE K-5th grade students.	2000
Nevada	$50,000 per school district "to support special counseling services for elementary school pupils at risk of failure."	1995
Texas	$7.5 million in grant money to fund elementary school counselor salaries was divided among 64 districts. Districts submitted a competitive application for the counselor grant, and approximately 300 districts applied. Districts receiving the grants had to have a student-counselor ratio no greater than 500 to 1 (including fractional appointments).	1991

Sources: (1) Self-collected survey responses (via email and phone) from state education agency officials; (2) NASBE (2005); (3) ASCA (2005); and (4) Glosoff & Koprowicz (1990).

Table 2: States that required elementary school counselors but did not fund them with targeted state aid, 2001-02

State	Description of Mandate	Initial Year
Arkansas	Districts were required to have one counselor for every 450 students (all grades).	pre-1987
Idaho	Elementary schools were required to employ at least one FTE counselor (or psychologist or nurse) for every 450 students in order to be certified by Northwest Association of Accredited Schools, the main type of school certification in Idaho.	1997
Louisiana	School districts were required to employ at least one counselor for every 400 elementary students.	1991
Missouri	Schools were required to employ at least one counselor for every 500 elementary students.	1990
Montana	Elementary schools were required to employ at least one counselor for every 400 students.	pre-1987
New Hampshire	Elementary schools were required to employ at least one counselor for every 500 students.	pre-1987
N. Carolina	Districts were required to have one counselor for every 400 ADM students (all grades).	pre-1987
North Dakota	Districts were required to have one counselor for every 450 students (all grades).	2000
Oklahoma	Districts were required to have one counselor for every 400 students (all grades). All districts must employ a least 0.5 FTE counselor and all schools must offer some counseling services.	1991
S. Carolina	Elementary schools were required to employ at least one counselor for every 800 students.	pre-1987
Vermont	Elementary schools were required to employ at least one counselor for every 400 students.	pre-1987
Virginia	Elementary school were required to provide the following minimum level of counseling services: One hour per day per 100 students, one full-time counselor at 500 students, one hour per day of additional time per each additional 100 students or major fraction thereof.	pre-1987

Sources: (1) Self-collected survey responses (via email and phone) from state education agency officials; (2) NASBE (2005); (3) ASCA (2005); and (4) Glosoff & Koprowicz (1990).

Table 3: Determinants of the Percentage of Students Receiving Counseling during Third Grade

	Mean	S.D.	Estimated Coefficient	p-value
State-level Elementary Counselor Policy				
State Directly Subsidizes Counselors	0.16	0.36	10.62	0.001
State Requires a Minimum Counselor-Student Ratio	0.09	0.29	1.47	0.477
State Recommends a Minimum Counselor-Student Ratio	0.13	0.34	5.25	0.112
Other State-level Characteristics				
Percent of Education Revenues Funded at the State Level	0.49	0.09	25.37	0.03
Midwest Census Region	0.20	0.40	0.09	0.975
South Census Region	0.40	0.49	-1.19	0.645
West Census Region	0.21	0.41	-1.66	0.578
District level				
Student enrollment in school district	51	150	0.04	0.055
Student enrollment in school district squared			$-3.7*10^{-5}$	0.059
School district spending per pupil ($1000's per pupil)	8.99	2.50	0.08	0.850
Median income in school district ($10,000's)	4.37	1.57	-1.06	0.401
Mean house value in school district ($100,000's)	1.48	0.85	0.76	0.658
Fraction of adults (25+) in school district with B.A. degree or higher	0.23	0.13	0.77	0.956
Fraction of adults (25+) in school district without a high school diploma	0.21	0.10	-36.98	0.007
School level				
School offers a 6th grade	0.33	0.47	-1.16	0.594
School offers an 8th grade	0.06	0.24	4.50	0.295
School enrollment	554	248	-0.0138	0.084
School enrollment squared			$5.3*10^{-6}$	0.278
School is located in a large city	0.13	0.34	-8.51	0.001
School is located in a medium-sized city	0.18	0.38	-1.37	0.564
School is located in a rural area	0.17	0.38	-0.78	0.785
Fraction of students at school who are ethnic minorities	0.38	0.34	7.01	0.195
Fraction of students at school with free/reduced-price lunch	0.46	0.29	1.95	0.701
Average Student-level Characteristics				
Female	0.49	0.20	-1.88	0.507
Black	0.15	0.27	-5.21	0.316
Hispanic	0.20	0.29	-6.70	0.138
Asian	0.03	0.08	-13.30	0.064
"Other" Race	0.03	0.10	12.25	0.149
Age (months)	111	2.5	-7.44	0.592
Age Squared			0.036	0.570
Fall Kindergarten Reading Scaled score	28.5	5.4	-1.28	0.059
Fall Kindergarten Reading Scaled score Squared			0.015	0.103
Fall Kindergarten Math Scaled score	22.2	5.2	1.01	0.170
Fall Kindergarten Math Scaled score Squared			-0.020	0.087
Proportion of Students in Households in which…				
Parents were married at time of child's birth	0.68	0.27	-5.70	0.188
Student was an only child in first grade	0.14	0.15	-1.38	0.756
Student had more than 2 siblings in household during first grade year	0.23	0.23	-1.63	0.655
Student had one parent in household during first grade year	0.20	0.19	3.56	0.431
Student had relative caretaker after school during first grade year	0.09	0.14	7.04	0.194
Student had non-relative caretaker after school during first grade year	0.14	0.17	2.68	0.517
Student had center daycare after school during first grade year	0.06	0.11	-4.50	0.585
Household lost a sibling between first and third grade	0.11	0.14	4.76	0.405
Household added as sibling between first and third grade	0.06	0.10	2.01	0.797
Household changed from 2 to 1 (or 0) parents between first and third grade	0.04	0.09	-1.30	0.884
Household changed from 1 (or 0) to 2 parents between first and third grade	0.10	0.14	1.71	0.760
Parents became divorced or separated between first and third grade	0.12	0.17	12.65	0.010
Child moved residences between first and third grade	0.15	0.17	1.59	0.664

See Notes to Table 3 on the next page

Notes to Table 3: Each row displays the mean and standard deviation of an independent variable, followed by its regression coefficient and corresponding p-value when the percentage of 3rd grade students receiving counseling is regressed on all of these independent variables together. The average student and household variables are computed by finding weighted averages of student-level variables based on the appropriate sampling weights. The school-level observations are also weighted so that the results are nationally representative of third grade students who attended first grade during the 1999-2000 school year. The p-values account for clustering at the state-level. The dependent variable has a weighted mean of 12.7 and a standard deviation of 18.9.

Table 4: The Relationship between mean school-level outcomes for third graders and variation in predicted counseling availability due to inter-state policy variation

Dependent Variable (School-level Mean)	Change (in std. dev.) associated with a 5 percentage point increase in students receiving counseling	T-statistic	*p-value*	N (# of schools)
Mean math test score	.11	2.09	.044	861
Mean reading test score	.07	2.06	.047	859
Percent of students with Individualized Education Plans	.00	-0.04	.969	792
3rd grade teacher's mean Social Rating Scale (SRS) responses for students (1=worst, 4=best)				
Approaches to learning	.05	0.78	.443	862
Self-Control	.05	0.69	.496	861
Interpersonal skills	.05	0.78	.439	862
Externalizing problem behaviors	.01	0.27	.788	861
Internalizing problem behavior	.01	0.16	.872	859
Other responses from the teacher or the parent				
Percent of 3rd grade students teacher says "seldom" or "never" work to the best their abilities	-.04	-0.72	.474	860
Percent of 3rd grade students whose parents are concerned they are less active than other children	-.07	-1.64	.110	860
Mean SRS and academic engagement scores based on students' interview responses (1=worst, 4=best)				
How well student gets along with peers	-.08	-1.17	.248	862
Externalizing problem behaviors	.12	2.09	.044	862
Internalizing problem behaviors	.13	2.19	.035	862
Student's interest/confidence in reading	.00	0.01	.991	862
Student's interest/confidence in math	.05	1.00	.322	862
Student's interest/confidence in all subjects	-.03	-0.58	.563	862

Notes to Table 4: Each row represents the results of a two-stage least squares model, with school-level variables computed by finding weighted averages of student-level variables based on the appropriate sampling weights. The school-level observations are also weighted so that the results are nationally representative of third grade students who attended first grade during the 1999-2000 school year. Sample means and standard deviations for the independent and dependent variables are displayed in Tables 3 and Table A.1 in the appendix. The first stage of each model is a school-level equation using the state counselor policy indicators and the other independent variables listed in Table 3 to predict the fraction of students at the school receiving counseling. In each second-stage equation, the dependent variable is the mean student outcome at that school and the independent variables are the predicted counseling rate and the other covariates, excluding the state policy variables. The F-test for this exclusion restriction has a p-value of less than .001. The coefficients and standard errors for the individual counselor policy indicators in the first stage are .106 (.031 standard error) for directly subsidized counselors, .015 (.025) for a required counselor-student ratio, and .053 (.032) for a recommended minimum elementary-level counselor-student ratio. Given that identification of these models is based on state-level variation in policies, these standard errors and the t-statistics reported are based on standard errors adjusted for state-level clustering. The t-statistics might be biased downward given that the models use estimated school-level mean characteristics of third grade students rather than actual school-level mean characteristics of third grade students.

Table 5: Summary Statistics for the SaSS Dependent Variables:
Proportion of Teachers Responding that Various Issues are Problems at their Schools

To what extent is the following a problem at the school…	At Least a Minor Problem	A Moderate or Severe Problem
Student misbehavior interferes with my teaching[i]	.606 *.489*	.358 *.479*
Physical Conflicts among Students[ii,iii]	.642 *.479*	.263 *.440*
Students Cutting Class[ii]	.211 *.408*	.038 *.192*
Robbery or Theft[ii,iii]	.630 *.483*	.117 *.321*
Vandalism of School Property[ii,iii]	.639 *.480*	.113 *.339*
Student Absenteeism[ii]	.805 *.396*	.340 *.474*
Student Tardiness[ii]	.757 *.429*	.298 *.458*
Teacher Absenteeism[ii]	.438 *.496*	.099 *.298*
Student drug abuse[ii,iii]		.192 *.394*

Notes to Table 5: These proportions are based on the difference-in-differences probit model sample of 50,700 elementary school teachers across the five sample waves, with proportions adjusted using teachers' sampling weights. Corresponding standard deviations are italicized and listed below each proportion.
(i) This variable is the only one above not based on the "To what extent is the following a problem at the school…" series, as it is instead based on "For each of the following statements, indicate whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree." I coded the response as equivalent to a minor problem if the response was "somewhat disagree" and as a moderate or severe problem if the response was "somewhat agree" or "strongly agree."
(ii) For these variables, starting with the 1999-2000 sample wave, there was a minor wording change in the response options from "Serious, Moderate, Minor, Not a problem" to "Serious problem, Moderate problem, Minor problem, Not a problem."
(iii) For these variables, the question in the 2003-04 sample wave changed to: "To the best of your knowledge how often do the following types of problems occur with students at this school?" The response options were: "Happens daily, Happens at least once a week, Happens at least once a month, Happens on occasion, Never happens." To ensure the highest possible similarity in frequencies with the earlier sample waves, I coded these 2003-04 variables as follows: for vandalism and robbery, "on occasion" and "at least once a month" are minor problems and anything more frequent than that is a moderate or severe problem; for physical conflict, "at least once a month" is a minor problem and anything more frequent than that is a moderate or severe problem; for student drug abuse, "at least once a month" or more is a moderate or severe problem. Given that teachers rarely consider drug abuse to be a "minor problem", (it is generally either not a problem at all or a somewhat serious problem), I did not code a minor problem variable for drug abuse. Note that, although there are occasionally these minor changes in the wording of questions from sample wave to sample wave, the inclusion of either year effects or year-by-level-of-instruction effects as controls in the probit models should remove the impact of any fixed shift in the frequencies of various responses.

Table 6: Does Counseling for Elementary School Students Ease their Teachers' State of Mind? Difference-in-differences Estimates of the Impact of a State Subsidizing or Requiring Elementary Counselors

	At Least a Minor Problem				A Moderate or Severe Problem			
To what extent is the following a problem at the school:	(1a) Within-Region Policy Variation	(2a) Difference-in-differences	(3a) Triple Differences	(4a) Triple Differences Controlling for Long-term HS	(1b) Within-Region Policy Variation	(2b) Difference-in-differences	(3b) Triple Differences	(4b) Triple Differences Controlling for Long-term HS
N=	50,698[i]	50,700	110,805	110,805	50,687[i]	50,700	110,805	110,805
Student misbehavior interferes with my teaching	-.042*	-.079*	-.106***	-.142***	-.028	-.080*	-.076**	-.108**
	(.032)	(.059)	(.045)	(.052)	(.036)	(.054)	(.046)	(.051)
	-.016	**-.030**	**-.039**	**-.053**	**-.010**	**-.028**	**-.027**	**-.038**
Physical Conflicts among Students	-.005	-.102**	-.067	-.109	-.044	-.181***	-.112*	-.156***
	(.038)	(.051)	(.079)	(.091)	(.051)	(.072)	(.071)	(.064)
	-.002	**-.034**	**-.022**	**-.036**	**-.013**	**-.052**	**-.032**	**-.045**
Students Cutting Class	-.001	-.132**	-.273**	-.234**	-.003	-.152*	-.205*	-.157
	(.042)	(.067)	(.125)	(.117)	(.076)	(.105)	(.128)	(.138)
	-.000	**-.036**	**-.071**	**-.062**	**-.000**	**-.012**	**-.015**	**-.012**
Robbery or Theft	.021	-.144**	-.182***	-.103**	-.095**	-.195**	-.144**	-.171**
	(.035)	(.065)	(.077)	(.068)	(.055)	(.066)	(.077)	(.082)
	.007	**-.051**	**-.064**	**-.036**	**-.016**	**-.032**	**-.024**	**-.028**
Vandalism of School Property	.010	-.148**	-.219**	-.187**	-.005	-.046	.030	-.045
	(.037)	(.065)	(.094)	(.098)	(.051)	(.086)	(.095)	(.085)
	.004	**-.053**	**-.078**	**-.067**	**-.001**	**-.009**	**.006**	**-.009**
Student Absenteeism	.008	-.117**	-.214**	-.140**	-.069*	-.041	-.028	.006
	(.039)	(.065)	(.098)	(.085)	(.045)	(.087)	(.094)	(.091)
	.002	**-.032**	**-.059**	**-.038**	**-.022**	**-.014**	**-.009**	**.002**
Student Tardiness	.039	-.002	-.037	.012	-.098**	-.063	-.069	-.134
	(.031)	(.059)	(.096)	(.088)	(.044)	(.065)	(.105)	(.120)
	.011	**-.001**	**-.011**	**.004**	**-.029**	**-.019**	**-.021**	**-.040**
Teacher Absenteeism	.025	-.055	-.133**	-.090*	-.031	-.120	-.070	-.061
	(.035)	(.060)	(.064)	(.056)	(.046)	(.095)	(.129)	(.139)
	.009	**-.020**	**-.048**	**-.033**	**-.005**	**-.018**	**-.011**	**-.009**
Student drug abuse					.038	-.203**	-.388***	-.318**
					(.053)	(.094)	(.166)	(.152)
					.010	**-.053**	**-.093**	**-.078**

Notes to Table 6: See Table 5 and the notes to Table 5 for the summary statistics and definitions of each of these dependent variables. Each panel of each column displays the estimated coefficient from a dummy variable for whether the state offers any counseling policy, followed by the standard error in parentheses, followed by the corresponding mean marginal effect in boldface. For example, the second panel of column 2a suggests that the addition of an elementary counselor policy causes a 3.0 percentage point decrease in the likelihood that teachers report that physical conflicts between students are at least a minor problem at their school. Standard errors are adjusted for clustering at the state-year level and observations are weighted by the appropriate teacher sampling weights used to make these SaSS data representative at the state and national levels.
Asterisks denote small p-values for the test of a beneficial counselor policy effect, with significance at the .10 (*), .05 (**), or .01 level (***).
(i) These models have fewer than 50,700 observations because teacher characteristics occasionally fully predict the outcome within a Census region for a particular year. The actual sample sizes range from 50,661 to 50,698 for column 1a and from 50,551 to 50,687 for column 1b.

Figure 1a

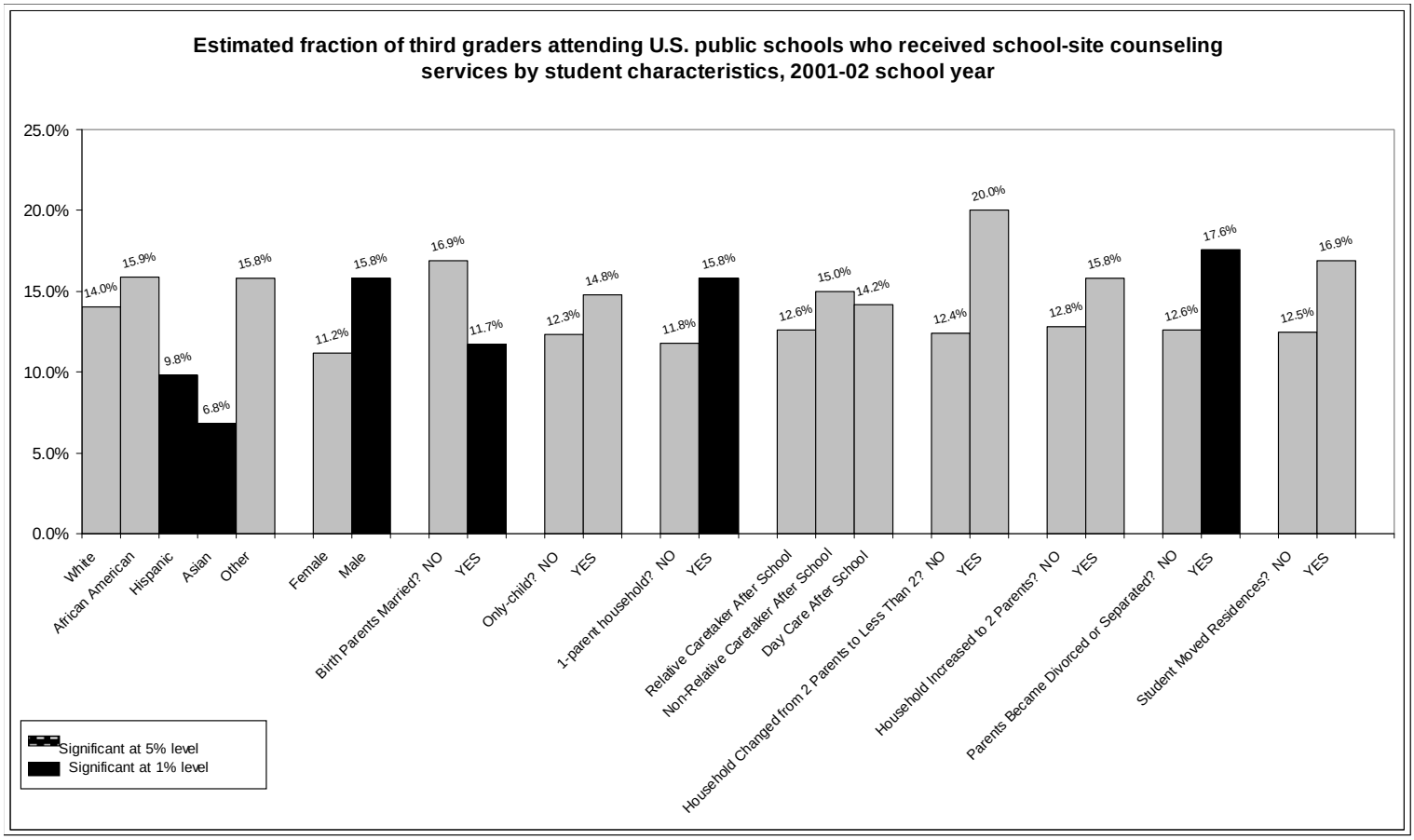
Estimated fraction of third graders attending U.S. public schools who received school-site counseling services by student characteristics, 2001-02 school year
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
14.0%
15.9%
9.8%
6.8%
15.8%
11.2%
15.8%
16.9%
11.7%
12.3%
14.8%
11.8%
15.8%
12.6%
15.0%
14.2%
12.4%
20.0%
12.8%
15.8%
12.6%
17.6%
12.5%
16.9%
White
African American
Hispanic
Asian
Other
Female
Male
Birth Parents Married? NO
YES
Only-child? NO
YES
1-parent household? NO
YES
Relative Caretaker After School
Non-Relative Caretaker After School
Day Care After School
Household Changed from 2 Parents to Less Than 2? NO
YES
Household Increased to 2 Parents? NO
YES
Parents Became Divorced or Separated? NO
YES
Student Moved Residences? NO
YES
Significant at 5% level
Significant at 1% level

Figure 1b

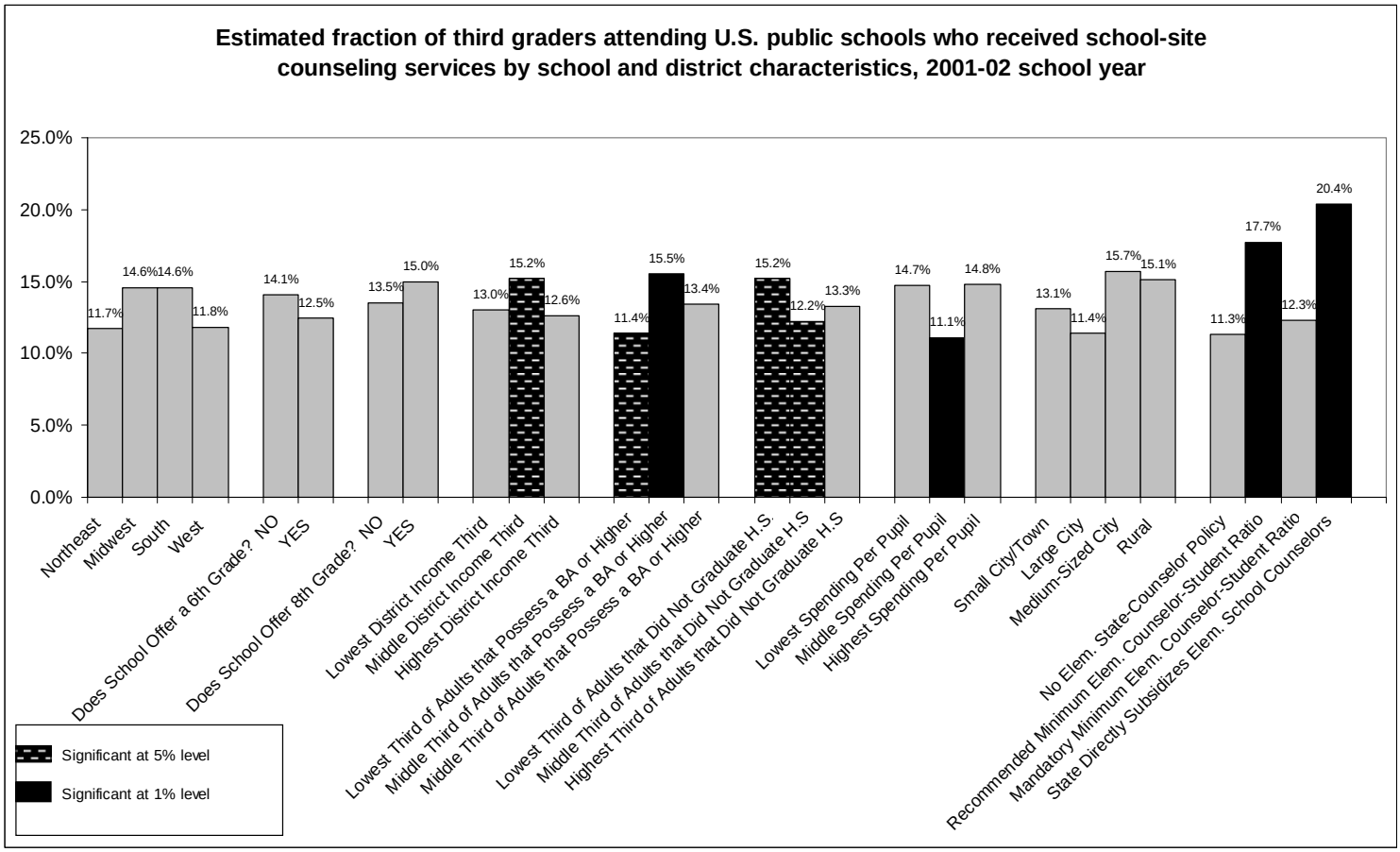
Estimated fraction of third graders attending U.S. public schools who received school-site counseling services by school and district characteristics, 2001-02 school year
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
11.7%
14.6%
14.6%
11.8%
14.1%
12.5%
13.5%
15.0%
13.0%
15.2%
12.6%
11.4%
15.5%
13.4%
15.2%
12.2%
13.3%
14.7%
11.1%
14.8%
13.1%
11.4%
15.7%
15.1%
11.3%
17.7%
12.3%
20.4%
Northeast
Midwest
South
West
Does School Offer a 6th Grade? NO
YES
Does School Offer 8th Grade? NO
YES
Lowest District Income Third
Middle District Income Third
Highest District Income Third
Lowest Third of Adults that Possess a BA or Higher
Middle Third of Adults that Possess a BA or Higher
Middle Third of Adults that Possess a BA or Higher
Lowest Third of Adults that Did Not Graduate H.S.
Middle Third of Adults that Did Not Graduate H.S
Highest Third of Adults that Did Not Graduate H.S
Lowest Spending Per Pupil
Middle Spending Per Pupil
Highest Spending Per Pupil
Small City/Town
Large City
Medium-Sized City
Rural
No Elem. State-Counselor Policy
Recommended Minimum Elem. Counselor-Student Ratio
Mandatory Minimum Elem. Counselor-Student Ratio
State Directly Subsidizes Elem. School Counselors
Significant at 5% level
Significant at 1% level

Table A.1: Summary Statistics for ECLS-K Dependent Variables used in Table 4

Dependent Variable (School-level Mean)	Mean	Standard Deviation
Mean Math Test Score	91.83	13.34
Mean Reading Test Score	117.13	15.82
percent of Students with Individualized Education Plans	.130	.171
3rd Grade Teacher's Mean Social Rating Scale (SRS) Responses for Students (1=worst, 4=best)		
Approaches to Learning	3.01	0.37
Self-Control	3.19	0.35
Interpersonal Skills	3.06	0.35
Externalizing Problem Behaviors	3.28	0.35
Internalizing Problem Behavior	3.35	0.28
Other Responses from the Teacher or the Parent		
percent of Third grade students that the teacher says "seldom" or "never" work to the best their abilities	14.7 percent	18.6 percent
percent of Third grade students whose parents are concerned that they are less active than other children	6.5 percent	11.6 percent
Mean SRS and Academic Engagement Scores Based on Students' Interview Responses (1=worst, 4=best)		
How well student gets along with peers	3.04	0.30
Externalizing Problem Behaviors	3.00	0.35
Internalizing Problem Behaviors	2.80	0.40
Student's interest/confidence in Reading	3.28	0.31
Student's interest/confidence in Math	3.18	0.37
Student's interest/confidence in all subjects	2.94	0.31

Table A.2: Probit Model Estimates Predicting whether Teachers Report that Student Misbehavior Interferes with Instruction

Independent Variable	Coefficient (Standard Error)	Standard Error
$Elementary_{it}$ *($ElemCounselorPolicy_{it}$)	-0.142***	0.052
$ElemCounselorPolicy_{it}$	0.034	0.173
$HighSchool_{it}$*($ElemCounselorPolicy_{it-5}$)	-0.086	0.060
(% of students in grades K through 2)*$Elementary_{it}$	-0.514***	0.085
(% of students in grades 3 through 5)*$Elementary_{it}$	-0.340***	0.088
(% of students eligible for free $lunch_{it}$)	0.317***	0.093
(% of students eligible for free lunch)*$Elementary_{it}$	0.112	0.089
% of students who are black or Hispanic $ethnicity_{it}$	0.706***	0.091
(% of students who are black or Hispanic $ethnicity_{it}$)*$Elementary_{it}$	-0.127	0.090
School District Expenditures per Pupil [$thousands]	0.00013	0.00087
$Elementary_{it}$ *(School District Expenditures per Pupil)	-0.00120	0.00105
Years of Teaching $Experience_{it}$	-0.01513***	0.00380
(Years of Teaching $Experience_{it})^2$	0.00027***	0.00010
$Elementary_{it}$ *(Years of Teaching $Experience_{it}$)	0.01141*	0.00592
$Elementary_{it}$ *(Years of Teaching $Experience_{it})^2$	-0.00021	-0.00013
$Female_i$	-0.08716***	0.01199
$Elementary_{it}$*($Female_i$)	-0.07911***	0.02977
$White_i$	0.20818***	0.03361
$Elementary_{it}$ *($White_i$)	-0.03463	-0.04433
Age_{it}	-0.00153	-0.00709
$(Age_{it})^2$	-0.00001	-0.00008
$Elementary_{it}$ *(Age_{it})	-0.02421**	0.01002
$Elementary_{it}$ *$(Age_{it})^2$	0.00022**	0.00011
Salary is Bottom $Coded_{it}$	-0.20766	-0.15200
$Salary_{it}$ [$thousands]	0.00209	-0.00337
$(Salary_{it})^2$	-0.00002	-0.00003
$Elementary_{it}$ *(Salary is Bottom $Coded_{it}$)	0.30609	-0.20337
$Elementary_{it}$*($Salary_{it}$)	0.01270***	0.00430
$Elementary_{it}$*$(Salary_{it})^2$	-0.00011***	0.00004

Notes to Table A.2: These estimates are based on a probit model with 110,805 teacher-level observations from the Schools and Staffing Survey, the same model with results displayed in the first row of column 4a of Table 6. This model also controls for state-by-instructional-level, state-by-year, and year-by-instructional level fixed effects. Standard errors are adjusted for clustering at the state-year level and observations are weighted by the appropriate teacher sampling weights used to make these SaSS data representative at the state and national levels.
Asterisks denote statistical significance at the .10 (*), .05 (**), or .01 level (***).