

Monthly Variation in ODR per 100 Students per Day

University of Oregon PBIS Workgroup

PBIS Newsletter

Appreciation is extended to Megan Cave for editing and publishing assistance.

University of Oregon PBIS Workgroup. (July 2010). *Monthly variation in ODR per 100 students per day*. Evaluation brief. Educational and Community Supports, University of Oregon, Eugene, Oregon.



Research Statement and Rationale

It seems reasonable to assume that students' behavioral support needs vary across the academic year. Students might require more behavioral support as the school year progresses and behavioral or academic deficits emerge, and the more time elapses since they received instruction in appropriate behavior. These support need patterns might differ by school demographics. To assess what these patterns look like and how they might differ based on school demographics, we examined monthly changes in ODR rates by school level, locale, SES status, minority enrollment, and size.

We used rates of office discipline referrals (ODR) per 100 students per day as a metric to quantify changes across months within the academic year. ODR rates are widely used to evaluate the behavioral climate of schools (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004) and the success of school-wide behavioral interventions (Horner et al., 2009). ODR rates per 100 students per day allow not only comparisons across schools with varying enrollments, but also across time periods of varying lengths, i.e. months within a school year with varying numbers of school days.

Data Presentation

Sample

The cohort of schools in this report included public schools from any U.S. state if they met the following criteria: (a) used SWIS with integrity¹ to collect ODR data during 2007-08, and (b) agreed to share their SWIS data, in aggregated form, for research purposes. Preschools, private schools, alternative schools, and year-round schools were excluded from the analyses.

A total of 2,560 schools nested within 259 districts in 43 states across the United States and were included in the analysis². A majority of schools served elementary grade levels (66.5%; n=1702), followed by middle (17.7%; n=453) and high school levels (6.1%; n=157). Approximately 9.7% of the sample (n=248) schools served non-traditional grade level spans (e.g., K8-12). Approximately 35.6% of schools were located an urban locale (n = 877), 28.2% were suburban (n = 695), and 36.2% were located in a rural locale (n = 893). Average student enrollment for elementary schools was 451.93 (SD=186.50), average middle school enrolment was 686.92 students (SD=281.84), average high school enrollment was 980.18 students (SD=716.08), and average K8-12 enrollment was 444.94 (SD=264.09). The average number of full-time classroom teachers was 28.51 (SD=11.76) at the elementary level, 43.63 (SD=16.82) at the middle school level, 57.02 (SD=37.75) at the high school level, and 29.74 (SD=17.02) in K8-12 schools.

¹ To reduce potential error in the data, several data checks were conducted prior to descriptive analyses which resulted in removal of schools with extreme or outlying SWIS values (e.g., schools sharing SWIS accounts, schools with multiple SWIS accounts, schools where students with ODRs was greater than the school enrollment).

² From the eligible sample, two schools presented with missing data which was addressed through pairwise deletion

Data Sources

The data sources for this evaluation brief were (a) the School-wide Information System (SWIS) and (b) the Common Core of Data provided by the U.S. Department of Education's National Center for Education Statistics (NCES). SWIS is a web-based application that allows school personnel to record, track, and use ODR data to make data-based decisions for behavior support at individual-student, student-group, and school-wide levels (May et al., 2003). ODR from schools that use SWIS and agree to share their data for research purposes become part of an extensive database housed at the University of Oregon, from which the sample for this report was drawn. Demographic information related to school enrollment, diversity, and socio-economic status was drawn from the NCES Database. Private schools and alternative schools were excluded from analyses.

Results

Table 1 and Figure 1 present changes in monthly ODR rates by school level. Overall, ODR rates seem to increase from September to November, decline from December to January, gradually increase again until April, and then decline to or below values at the beginning of the academic year. This same pattern appears evident for elementary, middle, high, and K8-12 schools. As expected, elementary schools had the lowest ODR rates each month, followed by K8-12 schools, and

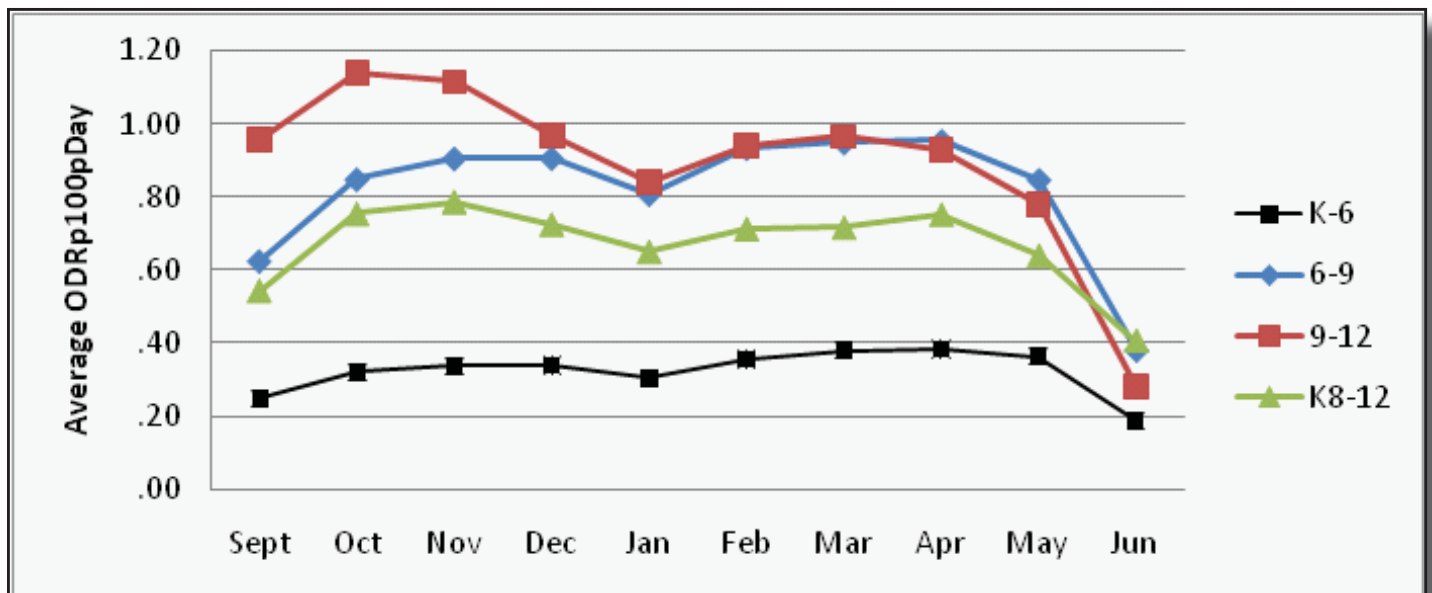
then middle schools. The ODR rates of high schools were highest from September to January, but then gradually dropped below those of middle schools and even K8-12 schools at the very end of the academic year.

It is important to note that standard deviations were large, often approximately equal to or larger than the means. This makes interpretation of the means difficult.

Table 1. Average Major ODR per 100 Student per Day Values Across Grade Levels

Month	K-6	6-9	9-12	K8-12
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Sept	.25 (.31)	.62 (.92)	.96 (1.49)	.54 (.65)
Oct	.32 (.36)	.85 (.96)	1.14 (1.22)	.75 (.84)
Nov	.34 (.37)	.91 (.98)	.97 (1.08)	.73 (.79)
Dec	.34 (.38)	.91 (.98)	.97 (1.08)	.73 (.79)
Jan	.30 (.37)	.81 (.88)	.84 (1.11)	.65 (.88)
Feb	.35 (.39)	.93 (.95)	.94 (1.19)	.71 (.87)
Mar	.38 (.44)	.95 (.97)	.97 (1.00)	.72 (.84)
Apr	.38 (.44)	.95 (1.02)	.93 (.92)	.75 (.92)
May	.36 (.42)	.85 (.93)	.78 (1.03)	.64 (.82)
Jun	.19 (.38)	.38 (.62)	.28 (.53)	.40 (.65)

Figure 1. Average Major ODR per 100 Student per Day Values Across Grade Levels



Results

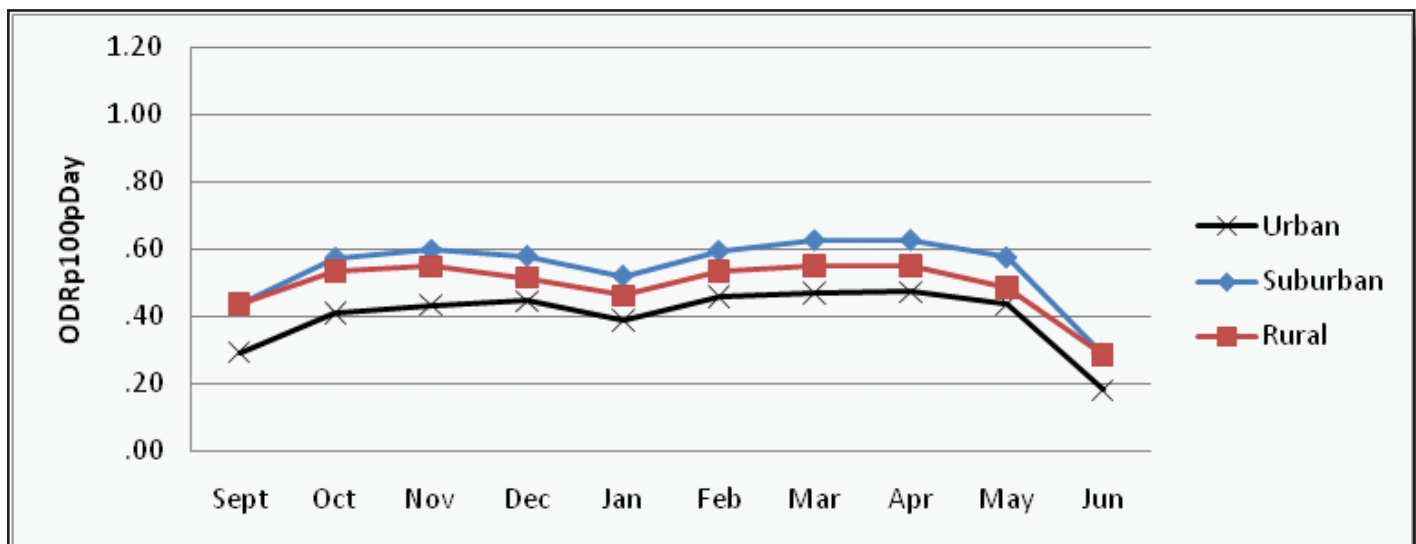
Table 2 and Figure 2 present changes in monthly ODR rates by school locale. The overall monthly fluctuations mirrored those seen above, with ODR rates increasing from September to November, declining in December and January, increasing again through April and then declining to rates equal or lower

to those of the beginning of the academic year. Surprisingly, urban schools had the lowest monthly rates, followed by rural schools. Suburban schools had the highest monthly rates. Standard deviations consistently larger than the means make interpretation of the mean ODR rates again difficult.

Table 2. Average Major ODR per 100 Student per Day Values Across Locale

Month	Urban	Suburban	Rural
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Sept	.29 (.62)	.44 (.65)	.44 (.69)
Oct	.41 (.60)	.57 (.77)	.53 (.66)
Nov	.43 (.66)	.60 (.79)	.55 (.59)
Dec	.44 (.63)	.58 (.68)	.51 (.70)
Jan	.39 (.60)	.52 (.66)	.46 (.61)
Feb	.46 (.63)	.59 (.69)	.53 (.69)
Mar	.47 (.57)	.63 (.75)	.55 (.69)
Apr	.47 (.57)	.63 (.73)	.55 (.59)
May	.44 (.60)	.57 (.70)	.48 (.70)
Jun	.18 (.31)	.29 (.56)	.28 (.61)

Figure 2. Average Major ODR per 100 Student per Day Values Across Locale



Results

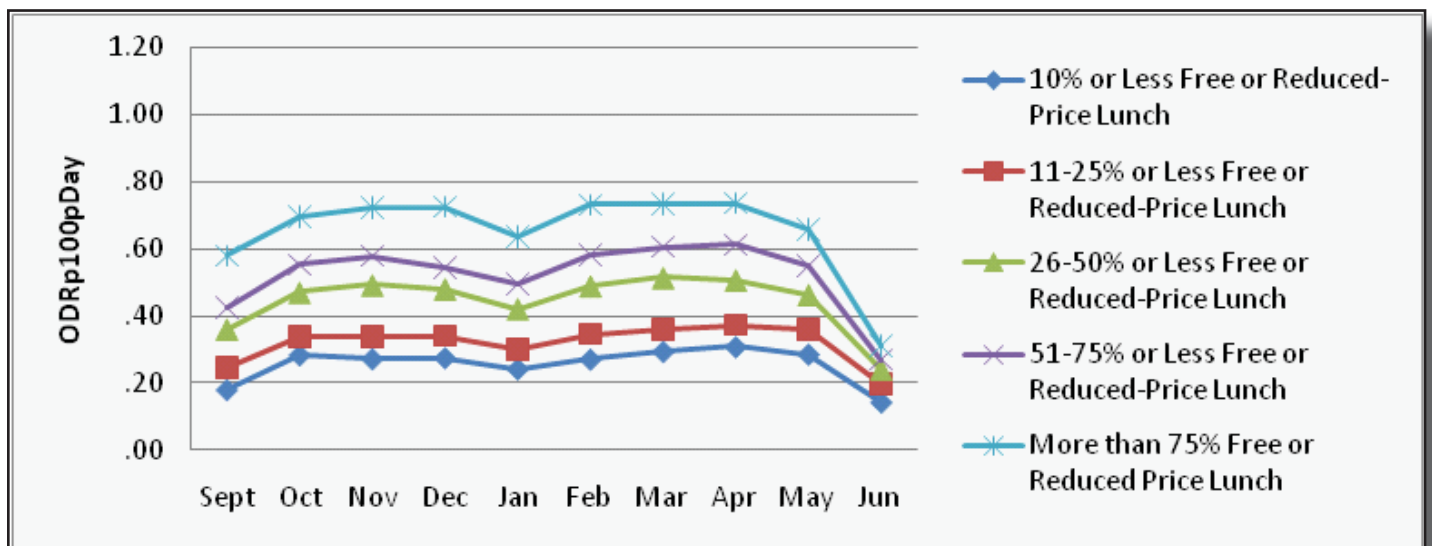
Table 3 and Figure 3 present changes in monthly ODR rates by school-level SES status. The overall fluctuations across months follow the same pattern discussed previously. Schools with the lowest percentage of students on free or reduced-price lunch had

the lowest monthly ODR rates. Monthly ODR rates increased as the percentage of students on free or reduced-price lunch increased. Standard deviations consistently larger than the means make interpretation of the mean ODR rates again difficult.

Table 3. Average Major ODR per 100 Student per Day Values Across SES

Month	<10% FRL	11-25% FRL	26-50% FRL	51-75% FRL	>75% FRL
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Sept	.18 (.27)	.25 (.32)	.36 (.51)	.42 (.66)	.58 (1.05)
Oct	.28 (.43)	.34 (.39)	.47 (.58)	.55 (.72)	.70 (.95)
Nov	.27 (.41)	.34 (.37)	.49 (.59)	.58 (.74)	.72 (.97)
Dec	.28 (.43)	.34 (.37)	.48 (.55)	.54 (.63)	.73 (.96)
Jan	.24 (.38)	.30 (.33)	.42 (.50)	.49 (.63)	.64 (.88)
Feb	.27 (.40)	.35 (.37)	.49 (.55)	.58 (.72)	.73 (.96)
Mar	.29 (.44)	.36 (.38)	.51 (.56)	.61 (.75)	.73 (.83)
Apr	.31 (.44)	.37 (.39)	.51 (.56)	.61 (.74)	.74 (.86)
May	.29 (.39)	.36 (.40)	.46 (.52)	.55 (.67)	.66 (.91)
Jun	.14 (.20)	.20 (.28)	.24 (.48)	.27 (.54)	.31 (.57)

Figure 3. Average Major ODR per 100 Student per Day Values Across SES



Results

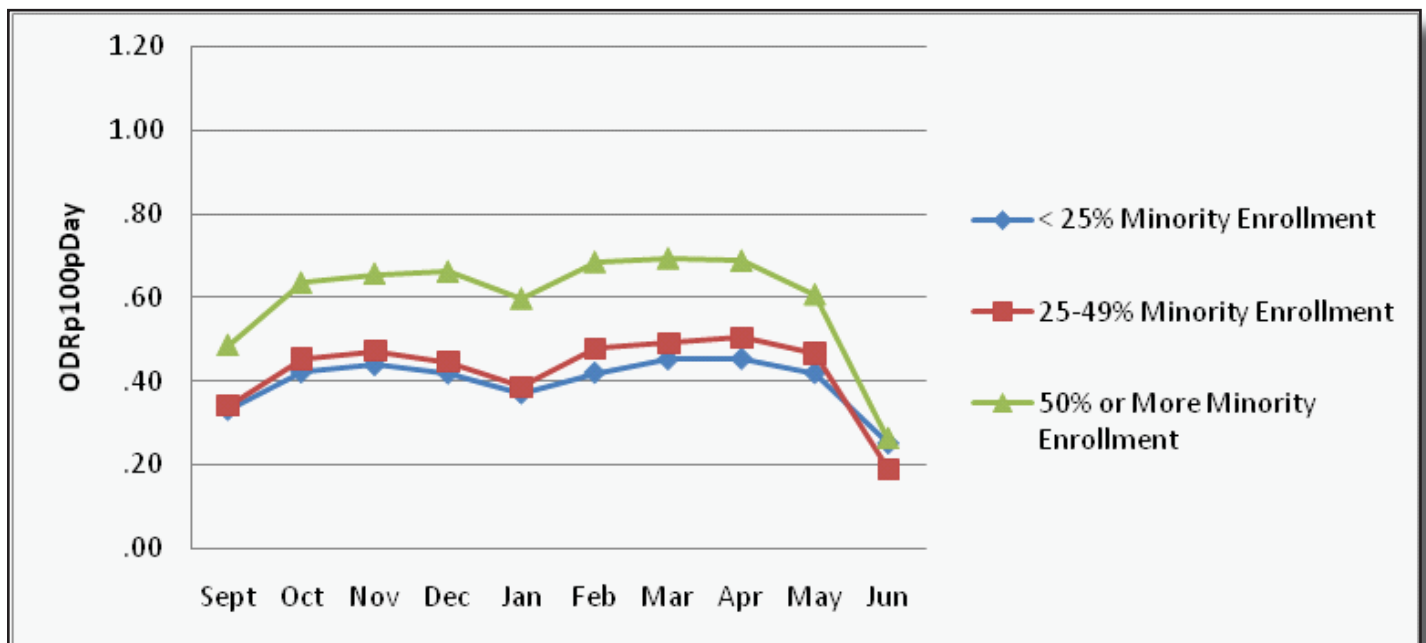
Table 4 and Figure 4 present changes in monthly ODR rates by school-level diversity. The overall fluctuations across months follow the same pattern discussed previously. Schools with the lowest percentage of students from minority backgrounds had the lowest monthly

ODR rates. The higher the percentage of students from minority backgrounds, the higher the monthly ODR rates. Standard deviations consistently larger than the means make interpretation of the mean ODR rates again difficult.

Table 4. Average Major ODR per 100 Student per Day Values Varying Levels of Diversity

Month	<25% Minority	25-49% Minority	>50% Minority
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Sept	.33 (.46)	.34 (.52)	.49 (.90)
Oct	.42 (.53)	.45 (.59)	.63 (.88)
Nov	.44 (.55)	.47 (.62)	.66 (.88)
Dec	.42 (.52)	.45 (.51)	.66 (.84)
Jan	.37 (.49)	.39 (.46)	.60 (.80)
Feb	.45 (.55)	.49 (.57)	.69 (.84)
Mar	.45 (.55)	.49 (.57)	.69 (.83)
Apr	.45 (.55)	.50 (.60)	.69 (.83)
May	.42 (.51)	.47 (.54)	.61 (.81)
Jun	.25 (.48)	.19 (.26)	.26 (.54)

Figure 4. Average Major ODR per 100 Student per Day Values Varying Levels of Diversity



Results

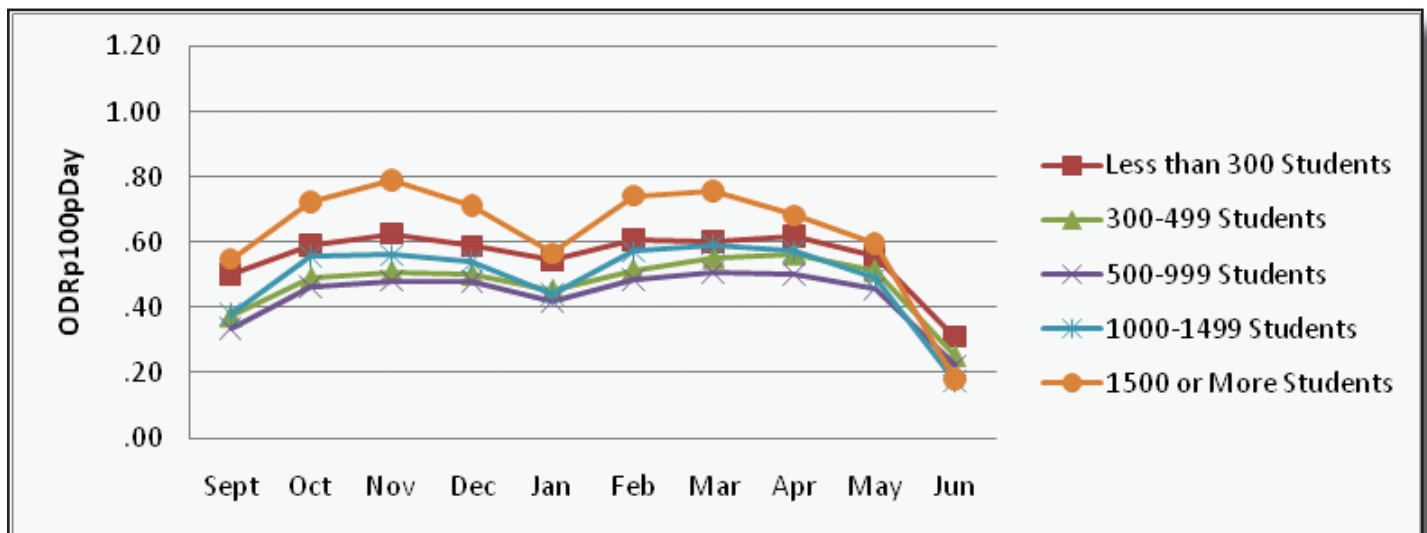
Table 5 and Figure 5 present changes in monthly ODR rates by school size. The overall fluctuations across months follow the same pattern discussed previously. Mid-sized schools (enrollment of 500-999 students) had the lowest monthly ODR rates, followed by schools with an enrollment of 300-499 students, then

schools with an enrollment of 1000-1499 students, and schools with an enrollment of less than 300 students. The largest schools (more than 1500 students) had the highest monthly ODR rates. Standard deviations consistently larger than the means make interpretation of the mean ODR rates again difficult.

Table 5. Average Major ODR per 100 Student per Day Values Among Schools by Enrollment Sizes

Month	<300 Students	300-499 Students	500-999 Students	1000-1499 Students	>1500 Students
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Sept	.50 (1.03)	.37 (.60)	.33 (.43)	.38 (.65)	.55 (.51)
Oct	.59 (.87)	.49 (.70)	.46 (.58)	.56 (.71)	.72 (.51)
Nov	.63 (1.02)	.51 (.68)	.48 (.61)	.56 (.67)	.79 (.58)
Dec	.59 (.91)	.50 (.65)	.48 (.58)	.54 (.57)	.71 (.48)
Jan	.54 (.97)	.45 (.58)	.42 (.53)	.44 (.48)	.57 (.43)
Feb	.61 (.98)	.51 (.64)	.49 (.57)	.57 (.61)	.74 (.58)
Mar	.60 (.90)	.55 (.67)	.51 (.62)	.59 (.63)	.76 (.56)
Apr	.62 (.95)	.56 (.71)	.50 (.58)	.57 (.63)	.68 (.52)
May	.56 (.92)	.51 (.63)	.46 (.55)	.49 (.53)	.59 (.48)
Jun	.31 (.78)	.25 (.40)	.22 (.39)	.17 (.23)	.18 (.24)

Figure 5. Average Major ODR per 100 Student per Day Values Among Schools by Enrollment Sizes



Summary of Findings

Overall, our analyses showed that monthly ODR rates tend to fluctuate. ODR rates increased from September to November, decreased in December and January, then increased through February, March, and April, and decreased again in May and June. School level, locale, SES status, minority enrollment, or enrollment size seemed to impact monthly ODR rates, but appeared to have little impact on the overall fluctuation pattern across the academic year.

The increase in ODR rates during the fall months might be due to the increasing time elapsed since when appropriate behaviors were taught at the beginning of the academic year. The decline in December and January could reflect students' anticipation of the winter break and perhaps renewed interest in school after the break. In the late winter and spring months the sense of novelty might decline as problem behaviors are on the rise, until students anticipate the end of the school year.

Changes in ODR rates across grade levels were as expected, with ODR rates increasing with school level. Changes in ODR rates by locale were somewhat surprising. Urban schools are often assumed to be larger and have higher rates of problem behavior. In our sample, urban schools had the lowest monthly ODR rates. Changes in ODR rates by school-level SES status and minority enrollment were as expected, with schools with high percentages of students from low SES backgrounds and high percentages of students from minority backgrounds having higher monthly ODR rates. School size did not appear to have an easily explainable impact on changes in ODR rates.

References

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