Supplementary Materials for the article "Effects of a Universal Classroom Behavior Management Program in First and Second Grades on Young Adult Behavioral, Psychiatric, and Social Outcomes" published in *Drug and Alcohol Dependence**

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Effects of a Universal Classroom Behavior Management Program in First and Second Grades on Young Adult Behavioral, Psychiatric, and Social Outcomes

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Overview of Cohort 2 GBG Impact

The following descriptions, tables and figures represent the results of analyses of GBG impact on a set of young adult outcomes from the second cohort of students involved in testing the Good Behavior Game (GBG) intervention in Baltimore City Public Schools. The analytical method follows the same procedure and sequential examination described in more detail in Kellam et al. (this special issue).

1. Lifetime Illicit Drug Abuse/Dependence

For cohort 2, for the combined genders simple cross tabulations revealed no significant reduction in lifetime illicit drug abuse/dependence in students from the GBG condition compared to controls (16% for GBG versus 17% for internal controls, p=0.81, and 15% for all controls, p=0.98, unadjusted for baseline or classroom effects). However, for males, the rate for GBG males is lower with 19% reporting illicit drug abuse/dependence compared to 32% of internal controls (p=0.10) and 24% of all controls (p=0.41). For females, the corresponding rates of illicit drug abuse/dependence were 12% for those in the GBG condition versus 6.0% for internal controls (p=0.21) and 8.5% for all controls (p=0.36).

1.1 *GBG Impact on Lifetime Drug Abuse/Dependence Examined with Individual Level Risk Factors and Classroom Variation.* For lifetime illicit drug abuse/ dependence, the best fitting model included main effects for gender, baseline aggressive, disruptive behavior, intervention conditions, and interaction terms of baseline by intervention conditions (p=0.081) and gender by intervention conditions (p=0.058). The baseline by gender interaction is not significant (p=0.38). The p-value for nonlinearity was at 0.08 so we followed up with an additive model where random classroom effects were included.

As for gender, males had nearly twice as high rates of illicit drug abuse/dependence disorder compared to females (p<0.001). Because marginally significant gender by intervention effects were found, we analyzed males and females separately. For males, generalized additive mixture models (GAMM) using baseline aggressive, disruptive behavior and its interaction with each intervention condition to predict illicit drug abuse/dependence disorder prevalence revealed significant reduction in disorder for low aggressive, disruptive males in the GBG condition compared to similarly low aggressive, disruptive males in the internal GBG control condition (p=0.016, controlling for classroom variation; see Figure 1.3). In this cohort, the degree of benefit for GBG decreased with increasing levels of baseline aggressiveness and disruptiveness. These conclusions were based on two tests. First, approximately 10% of non-aggressive/disruptive GBG males had a drug abuse disorder compared to double to triple that rate for non-aggressive, disruptive internal GBG control males (see Figure 1.3 and Row 1 of Table 1, p=0.016[1]; also based on logistic regression fits). However, this benefit of GBG decreased significantly as level of aggressive behavior at baseline increased (p=0.051; see row 6 of Table 1). The best fitting logistic regressions with this interaction revealed that GBG impact was largest for those at the lower level of baseline aggressive, disruptive behavior; GBG had lower risk for the two-thirds of the males whose teacher rated aggressive, disruptive behavior was less than 2.0, and for the top third of the

[1] Note that the log of aggressive, disruptive behavior was used as a predictor so this effect corresponds to the estimated difference at 1, the lowest level of aggressive behavior.

males on this baseline measure predicted risk began to exceed that of the internal GBG control.

For both cohorts, GBG showed benefit at the low level of baseline aggressive/disruptive behavior. However, in contrast to the results for the first cohort, we did not find evidence of GBG impact for the most aggressive, disruptive males on this outcome. Another difference in the effects of the GBG between Cohort 1 and Cohort 2 was the evidence of stronger differences among the control groups' rates of illicit drug abuse disorder. Such differences between controls lower the power of detecting intervention impact. We also note that low aggressive, disruptive internal GBG controls had significantly higher rates of disorder than other low aggressive, disruptive control groups.

For females, we found no significant intervention effects.

1.2 GBG Impact Results on Lifetime Drug Abuse/Dependence including Within-School Variation and Small-Sample Testing. Explicitly taking into account the blocking factor of school when testing for intervention impact, the Mantel-Haenszel continuity corrected test that conditioned on school found an association between GBG and a lower probability of illicit drug abuse or dependence for males ($\chi 2$=2.25, 1 *df*, *p*=0.133). The corresponding small sample test of the value of the log odds ratio for males, accounting for school as a blocking factor, also did not reach the nominal 0.05 significance level (*t*=-1.64, 5 *df*, *p*=0.163). These results are not surprising since neither of these tests took into account the interaction with baseline.

2. Lifetime Alcohol Abuse/ Dependence

Among cohort 2, from simple cross tabulations, there was no significant reduction in lifetime alcohol abuse/dependence in the GBG condition compared to controls (15% for GBG versus 13% for internal controls, p=0.58, and 15% for all controls, p=0.84, unadjusted for baseline or classroom). For GBG males, 19% had alcohol abuse/dependence versus 20% for internal GBG controls (p=0.85) and 20% for all controls, (p=0.82). For females, 12% reported alcohol abuse/dependence from the GBG classrooms versus 7.6% for internal control classrooms (p=0.39) and 10% for all controls (p=0.66).

2.1 GBG Impact on Lifetime Alcohol Abuse/Dependence Examined with Individual Level Risk Factors and Classroom Variation. For lifetime alcohol abuse/dependence, the final model involved linear logistic terms and included main effects for gender, baseline aggressive, disruptive behavior, and intervention groups. No interactions among baseline variables, intervention conditions or gender were significant. In fact, baseline aggressive, disruptive behavior itself was not significantly related to alcohol dependence or abuse (p=0.31). The GBG effect itself was also non-significant (p=0.56) while classroom random effects were significant in this model ($p<0.001$; see Table 2).

2.2 GBG Impact Results on Lifetime Alcohol Abuse/Dependence including Within-School Variation and Small-Sample Testing. Results of testing for intervention impact on lifetime alcohol abuse/dependence that explicitly takes into account the blocking factor of school for combined genders did not find a significant association between GBG and a lower probability of alcohol abuse/dependence (χ^2=0.115 on 1 *df*, p=0.73) using the Mantel-Haenszel continuity corrected test that conditioned on school. The corresponding small sample test of the log odds ratio value accounting for school as a blocking factor showed non-significant results as well (t =0.437 on 5 *df*, p=0.68).

3. Lifetime Regular Smoking

In cohort 2 from simple cross tabulations, there is a consistent but non-significant reduction in lifetime regular smoking in the GBG condition compared to controls; 7% of students from the GBG condition versus 11% for internal controls (p=0.23) and 11% for all controls (p=0.13, unadjusted for baseline or classroom) reported lifetime regular smoking. For males, lifetime regular smoking rates were 8% for GBG versus 14% for internal controls (p = 0.38) and 13% for all controls (p=0.24). Six percent of GBG females reported lifetime regular smoking versus 9% of internal controls (p=0.48) and 10% of all controls (p=0.29). Results for the highly aggressive, disruptive male and female subgroups were unreliable because of very low cell counts in the tables.

3.1 GBG Impact on Lifetime Regular Smoking Examined with Individual Level Risk Factors and Classroom Variation. The final model for combined males and females involved linear logistic terms and included main effects for gender, baseline aggressive, disruptive behavior, intervention group, and interaction terms of baseline by gender (p=0.10). Under this model, the baseline by treatment interaction was not significant (p=0.67). As for the main effects, significance was not found for baseline aggressive, disruptive behavior (p=0.069), gender (p=0.49), nor the contrast of GBG intervention condition against its internal GBG control condition (p=0.18). The non-significant intervention effects were in the predicted direction that favored GBG.

Because of the marginal significance of gender by baseline interaction effects, we also performed separate model analyses for both genders. The best fitting model for either gender was a linear logistic model that revealed non-significant effects of GBG against internal GBG controls for both males (p=0.26) and females (p=0.52) when we included classroom random effects. The figures do indicate a consistent pattern where levels of smoking are lower in the GBG group than they are for the other controls (Fig 3.2 and 3.3). One reason for the non-significance of these results is the relatively large variation in lifetime regular smoking rates across classrooms (p<0.001, see Table 3 and 4).

3.2 GBG Impact Results on Lifetime Regular Smoking including Within-School Variation and Small-Sample Testing. The Mantel-Haenszel continuity corrected test that conditioned on school also showed no significant effects of GBG on probability of regular smoking by males ($\chi 2$=0.79 on 1 df, p=0.37) and by females ($\chi 2$=0.15 on 1 df, p=0.70); however, the corresponding small sample test of the log odds ratio value for both genders, accounting for school as a blocking factor, yielded significant results for females (t=-2.76 on 5 df, p=0.04) but non-significant results for males (t=-1.90 on 5 df, p=0.12).

4. Anti-Social Personality Disorder (ASPD)

In cohort 2 overall rates of Antisocial Personality Disorder (ASPD) were not significantly lower for youth in the GBG condition (14%) compared to internal controls (11%, p=0.54) and all controls (14%; p=0.99, unadjusted for classroom and child level effects). For males, 20% of the GBG group had ASPD versus 20% of the internal GBG controls (p=1.0) and 22% of all controls (p=0.73). For females, the rates were 7.1% for GBG versus 4.5% for internal GBG controls (p=0.50) and 6.5% for all controls (p=0.86).

4.1 GBG Impact on ASPD Examined with Individual Level Risk Factors and Classroom Variation. The final model for ASPD involved linear logistic terms and included baseline aggressive, disruptive behavior, gender and intervention conditions. The overall GBG impact was not significant (p=0.85) nor was baseline aggressive, disruptive behavior a significant predictor of ASPD (p=0.173). The model contains classroom as random effects, which were significant (p<0.001). See Table 5.

For both males and females, we saw an overall lower probability of having ASPD for highly aggressive, disruptive first-graders. There was a non-significant benefit for GBG among high aggressive, disruptive youth and some benefit at low levels of aggressive, disruptive behavior as well. This is in line with our Cohort 1 analysis but with a much weaker effect. See Figure 4.2 and 4.3.

4.2 GBG Impact Results on ASPD including Within-School Variation and Small-Sample Testing. We also report the results of testing for intervention impact on ASPD that explicitly takes into account the blocking factor of school. When we combined females and males, the Mantel-Haenszel continuity corrected test that conditioned on school did not find a significant association between GBG and a lower probability of ASPD (χ^2=0.14 on 1 *df*, p=0.71). The corresponding small sample test of the value of the log odds ratio accounting for school as a blocking factor, was not significant and was actually on the direction opposite from what we predicted, (t=0.52 on 5 *df*, p=0.62). For males, the Mantel-Haenszel test found minimal differences (χ^2=0.02 on 1 *df*, p=0.90). The corresponding t-test of the log odds ratios for each school gave the result as t=-0.61 on 5 *df* (p=0.57).

5. High School Graduation

In cohort 2 from simple cross tabulations, there was no significant difference in high school graduation rate in the GBG condition compared to controls (71% for GBG versus 70% for internal controls, $p = 0.93$, and 70% for all controls, $p = 0.92$, unadjusted for baseline or classroom). The differences for males, were still not significant; 64% of GBG males reported high school graduation versus 56% for internal controls ($p = 0.39$) and 63% for all controls ($p = 0.89$). For females, the corresponding rates were 78% for GBG versus 81% for internal controls ($p = 0.66$) and 77% for all controls ($p = 0.85$).

5.1 GBG Impact on High School Graduation Examined with Individual Level Risk Factors and Classroom Variation. For high school graduation, the best fitting model included main effects for gender, baseline aggressive, disruptive behavior and intervention conditions. None of the possible interactions were significant. The baseline aggressive, disruptive level was a strong predictor of the outcome (p=0.003, see Table 5). The GBG impact was not significant in this model (p=0.91). Random effects representing classroom variation were incorporated in the model and it was significant (p<0.001).

We found that for males, the GBG condition students showed higher rate on high school graduation for both the low and highly aggressive, disruptive groups compared to internal control (see Figure 5.4). A test only involving GBG condition and internal condition boys, showed a p-value of 0.11 for combined GBG effect (GBG condition and its interaction with baseline).

5.2 GBG Impact Results on High School Graduation including Within-School Variation and Small-Sample Testing. We also report the results of testing for intervention impact on high school graduation rate that explicitly takes into account the blocking factor of school. The Mantel-Haenszel continuity corrected test that conditioned on school did not find a significant association between GBG and a higher probability of high school graduation ($\chi 2$=0.007 on 1 df, p=0.93). The corresponding small sample test of the value of the log odds ratio, accounting for school as a blocking factor, did not reach significance either, (t=0.379 on 5 df, p=0.72). We also checked the test results for males only. The p values are 0.62 and 0.68 for the Mantel-Haenszel continuity corrected test and the small sample test of the value of the log odds ratio respectively.

6. Lifetime Generalized Anxiety Disorder (GAD)

In cohort 2 for lifetime GAD, the incidence rate is very low. Here we only list the rate without giving p-values. The overall rate for the GBG condition is 1.8% (3 out of 170) compared to 0.9% (1 out of 117) for internal control and 1.6% (8 out of 485) for all controls. For males, the rates are 2.4% (2 out of 85) for GBG condition and 0% for internal control and 0.4% for all control (1 out of 225). For females, the rates are 1.2% (1 out of 85) for GBG condition and 1.5% (1 out of 67) for internal control and 2.7% for all control (7 out of 260).

6.1 GBG Impact on Lifetime GAD Examined with Individual Level Risk Factors. Given the low incidence rate, we only looked at the model involving females with main effects of baseline aggressive, disruptive level, treatment conditions and their interactions. The combined GBG effect with interaction between baseline and GBG effect was not significant (p=0.88).

6.2 GBG Impact Results on Lifetime GAD including Within-School Variation and Small-Sample Testing.

We have omitted these analyses due to the low incidence rate.

7. Lifetime Major Depressive Disorder (MDD)

In cohort 2 from simple cross tabulations, there was no significant reduction in lifetime major depressive disorder in the GBG condition compared to controls (7.7% for GBG versus 9.7% for internal controls, p=0.56, and 10% for all controls, p=0.39, unadjusted for baseline or classroom). The differences for males, however, were marginally significant compared to internal control only. There are 3.6% of GBG males reported major depressive disorder versus 12% for internal controls (p=0.05) and 7.6% for all controls (p=0.20). For females, the corresponding rates were 12% for GBG versus 7.8% for internal controls (p=0.41) and 12% for all controls (p=0.98).

7.1 GBG Impact on Lifetime MDD Examined with Individual Level Risk Factors. For lifetime MDD, the best fitting model included main effects for gender, baseline aggressive, disruptive behavior and intervention conditions. The baseline aggressive, disruptive behavior was not significant (p=0.77). The GBG impact was not significant in this model (p=0.46). We did not incorporate random effects in this model and did not expect it would cause a significant change in the result. As indicated by a cross tabulation result, we did a further analysis with males only. The GBG impact did not appear to be significant (p=0.20, see Table 7).

7.2 GBG Impact Results on Lifetime MDD including Within-School Variation and Small-Sample Testing. We also report the results of testing for intervention impact on lifetime MDD that explicitly takes into account the blocking factor of school. The Mantel-Haenszel continuity corrected test that conditioned on school did not report a significant association between GBG and a lower probability of MDD ($\chi 2$=0.126 on 1 df, p=0.72) and neither did the corresponding small sample test of the value of the log odds ratio (t=-0.09 on 5 df, p=0.93). The t-test accounted for school as a blocking factor. The cross tabulation result suggested that we consider males by themselves. We note that GBG has shown a strong impact on low risk GBG boys compared to internal control (see Figure 6.4). However, neither of the two tests reached standard significance levels. The p-values for the Mantel-Haenszel test and the paired t-test are 0.14 and 0.29 respectively.

Appendix 1: Cohort 2 Tables

Table 1 (Cohort 2)
GAMM for Lifetime Illicit Drug Abuse/Dependence for Males (N=282 students, 31 Classrooms)

	Type of Effect	Effect (Variable Name)	Coefficient (Logit)	SE	*z*-value	*p*-value
		Intercept	0.722	0.725	0.996	0.320
Fixed main effects						
1	Intervention main effect (adjusted)	GBG vs. internal GBG controls (Tx1)	-2.738	1.127	-2.429	0.016
2	Contrasts among control groups	External controls vs. internal GBG controls (Tx2)	-2.108	1.025	-2.057	0.041
3		Internal ML controls vs. internal GBG controls (Tx3)	-2.336	0.983	-2.377	0.018
		Nonlinear Terms (Variable Name)	Effects	*df*	χ^2	*p*-value
Fixed Nonlinear Effects						
5	Baseline aggressive, disruptive behavior (baseline)	Total Baseline		3	1.168	0.761
		Linear(Baseline)		1	0.974	0.324
		Smooth(Baseline)		2	0.194	0.908
6	Baseline * GBG vs. internal control (Tx1)	Total Baseline * Tx1		3	4.740	0.192
		Linear(Baseline * Tx1)		1	3.798	0.051
		Smooth(Baseline*Tx1)		2	0.942	0.624
7	Baseline * external control vs. internal GBG control (Tx2)	Total Baseline * Tx2		3	2.812	0.422
		Linear (Baseline * Tx2)		1	2.644	0.104
		Smooth(Baseline*Tx2)		2	0.168	0.919
8	Baseline * internal ML vs. internal GBG control (Tx3)	Total Baseline*Tx3		3	6.784	0.079
		Linear (Baseline * Tx3)		1	1.138	0.286
		Smooth(Baseline*Tx3)		2	5.646	0.059
		Effect Name		SD	*p*-value[a]	
Random effects						
9	Classroom	Classroom level		0.335	0.500	

[a]for testing zero variance

Table 2 (Cohort 2)
GLMM Model for Lifetime Alcohol Abuse/Dependence. (N=600 students)

	Coefficient (SE)	*df*	t-value	*p*-value
Main Effects				
Intercept	-1.063 (0.513)	565	-2.071	0.039
Baseline aggressive, disruptive behavior (baseline)	0.267 (0.265)	565	1.010	0.313
Gender	-0.682 (0.239)	565	-2.856	0.005
GBG vs Internal GBG Control (Tx1)	0.237 (0.405)	29	0.585	0.563
External Control vs Internal GBG Control (Tx2)	0.086 (0.392)	29	0.218	0.828
Internal ML Control vs. Internal GBG Control (Tx3)	0.331 (0.419)	29	0.789	0.436
	SD	*p*-value[a]		
Random Effects				
Classroom	0.322	0.000		

[a]for testing zero variance

Table 3 (Cohort 2)
GLMM Model for Males Smoking ≥10 Cigarettes per day. (N=287 students)

	Coefficient (SE)	*df*	t-value	*p*-value
Main Effects				
Intercept	-2.182 (0.528)	253	-4.130	0.000
Baseline aggressive, disruptive behavior (baseline)	0.817 (0.395)	253	2.070	0.039
GBG vs Internal GBG Control (Tx1)	-0.724 (0.631)	29	-1.148	0.260
External Control vs Internal GBG Control (Tx2)	-0.539 (0.589)	29	-0.915	0.368
Internal ML Control vs. Internal GBG Control (Tx3)	-0.091 (0.617)	29	-0.148	0.883
	SD	*p*-value[a]		
Random Effects				
Classroom	0.588	0.000		

[a]for testing zero variance

Table 4 (Cohort 2)
GLMM Model for Females Smoking ≥10 Cigarettes per day. (N=316 students)

	Coefficient (SE)	*df*	t-value	*p*-value
Main Effects				
Intercept	-2.369 (0.674)	283	-3.515	0.001
Baseline aggressive, disruptive behavior (baseline)	-0.216 (0.475)	283	-0.454	0.650
GBG vs Internal GBG Control (Tx1)	-0.579 (0.899)	28	-0.644	0.525
External Control vs Internal GBG Control (Tx2)	0.082 (0.806)	28	0.102	0.919
Internal ML Control vs. Internal GBG Control (Tx3)	-0.085 (0.902)	28	-0.094	0.926
	SD	*p*-value[a]		
Random Effects				
Classroom	1.226	0.000		

[a]for testing zero variance

Table 5 (Cohort 2)
GLMM Model for ASPD. (N = 605 students)

	Coefficient (SE)	*df*	t-value	*p*-value
Main Effects				
Intercept	-0.488 (0.553)	570	-0.884	0.377
Baseline aggressive, disruptive behavior (baseline)	0.371 (0.272)	570	1.364	0.173
Gender	-1.197 (0.254)	570	-4.710	0.000
GBG vs Internal GBG Control (Tx1)	0.090 (0.488)	29	0.185	0.855
External Control vs Internal GBG Control (Tx2)	0.079 (0.464)	29	0.171	0.866
Internal ML Control vs. Internal GBG Control (Tx3)	0.105 (0.510)	29	0.207	0.838
	SD	*p*-value[a]		
Random Effects				
Classroom	0.585	0.000		

[a]for testing zero variance

Table 6 (Cohort 2)
GLMM Model for High School Graduation. (N = 605)

Main Effects	**Coefficient (SE)**	***df***	**t-value**	**p-value**
Intercept	0.398 (0.466)	570	0.855	0.393
Baseline aggressive, disruptive behavior (baseline)	-0.650 (0.221)	570	-2.947	0.003
Gender	0.527 (0.186)	570	2.836	0.005
GBG vs Internal GBG Control (Tx1)	0.047 (0.438)	29	0.108	0.915
External Control vs Internal GBG Control (Tx2)	0.234 (0.415)	29	0.564	0.577
Internal ML Control vs. Internal GBG Control (Tx3)	-0.136 (0.454)	29	-0.300	0.766
Random Effects	SD	*p*-value[a]		
Classroom	0.621	0.000		

[a]for testing zero variance

Table 7 (Cohort 2)
GLMM Model for Males Lifetime MDD. (N=286)

	Coefficient (SE)	*df*	t-value	*p*-value
Main Effects				
Intercept	-2.130 (0.655)	252	-3.250	0.001
Baseline aggressive, disruptive behavior (baseline)	-0.031 (0.508)	252	-0.060	0.952
GBG vs Internal GBG Control (Tx1)	-1.125 (0.848)	29	-1.326	0.195
External Control vs Internal GBG Control (Tx2)	-0.712 (0.758)	29	-0.939	0.355
Internal ML Control vs. Internal GBG Control (Tx3)	-0.791 (0.840)	29	-0.942	0.354
	SD	*p*-value[a]		
Random Effects				
Classroom	0.977	0.000		

[a]for testing zero variance

Appendix 2: Figures on Cohort 2 Impact

1. Lifetime Illicit Drug Abuse/Dependence (Cohort 2)

Fig. 1.1
GBG Impact vs. All 3 Control Groups Combined on Drug Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

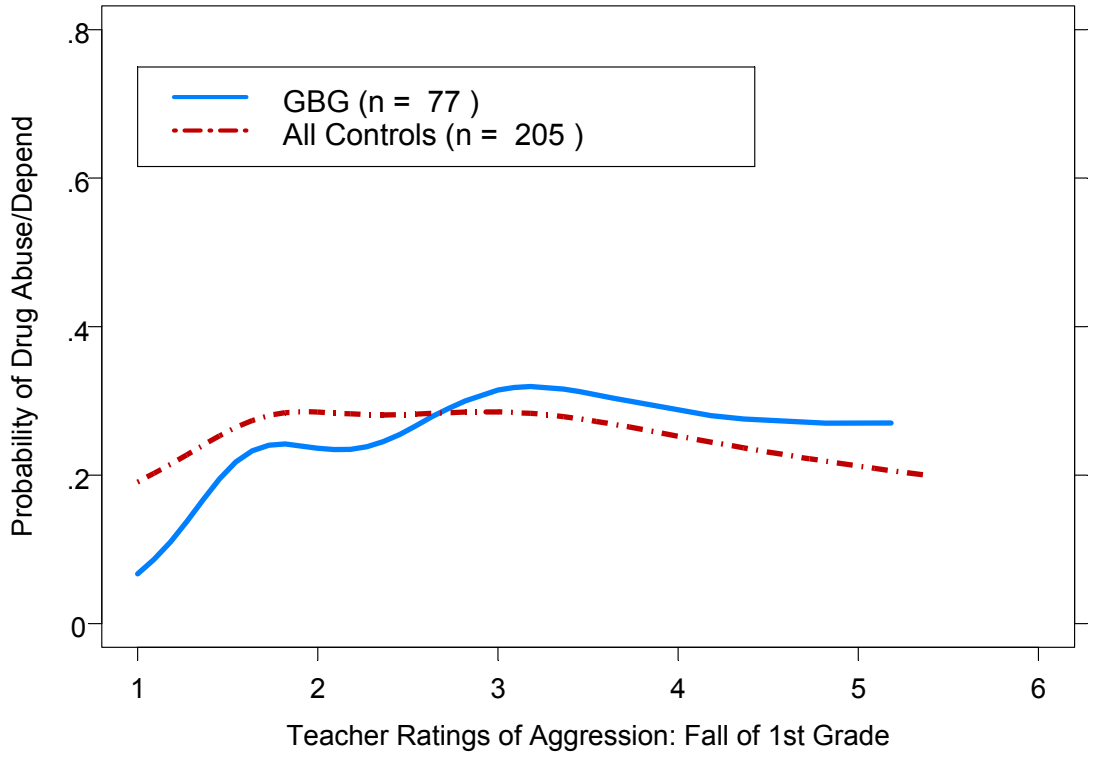


Fig 1.2
GBG Impact vs. All 3 Control Groups Combined on Drug Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)

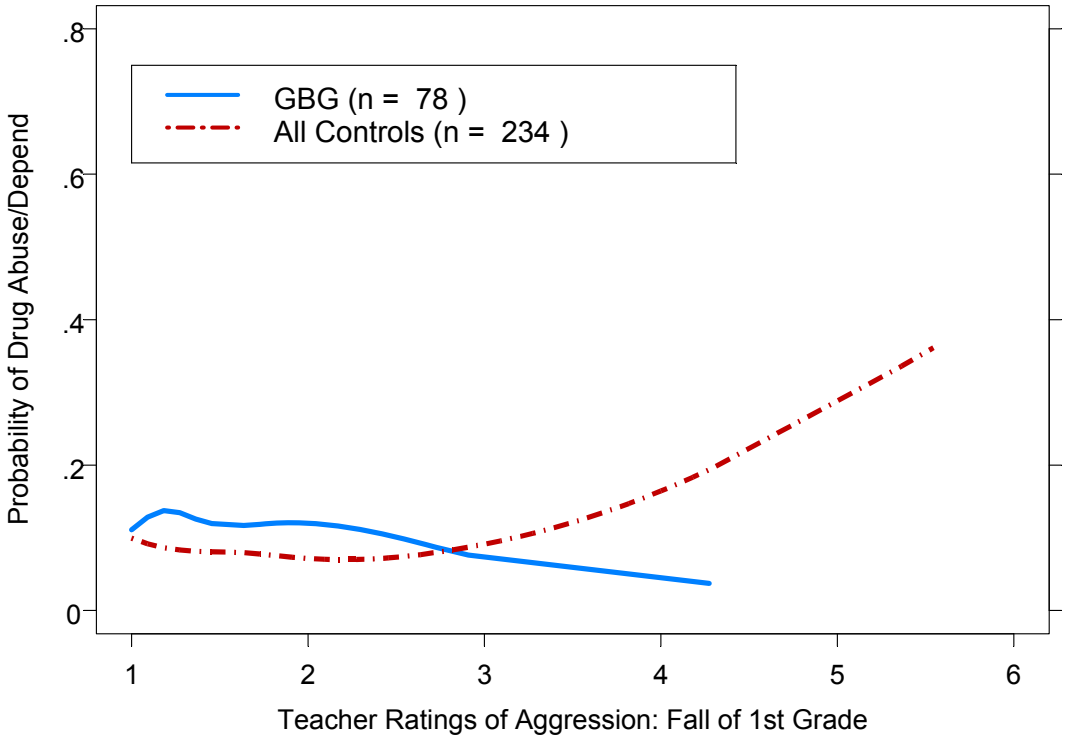


Fig. 1.3
GBG Impact vs. All 3 Control Groups on Drug Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

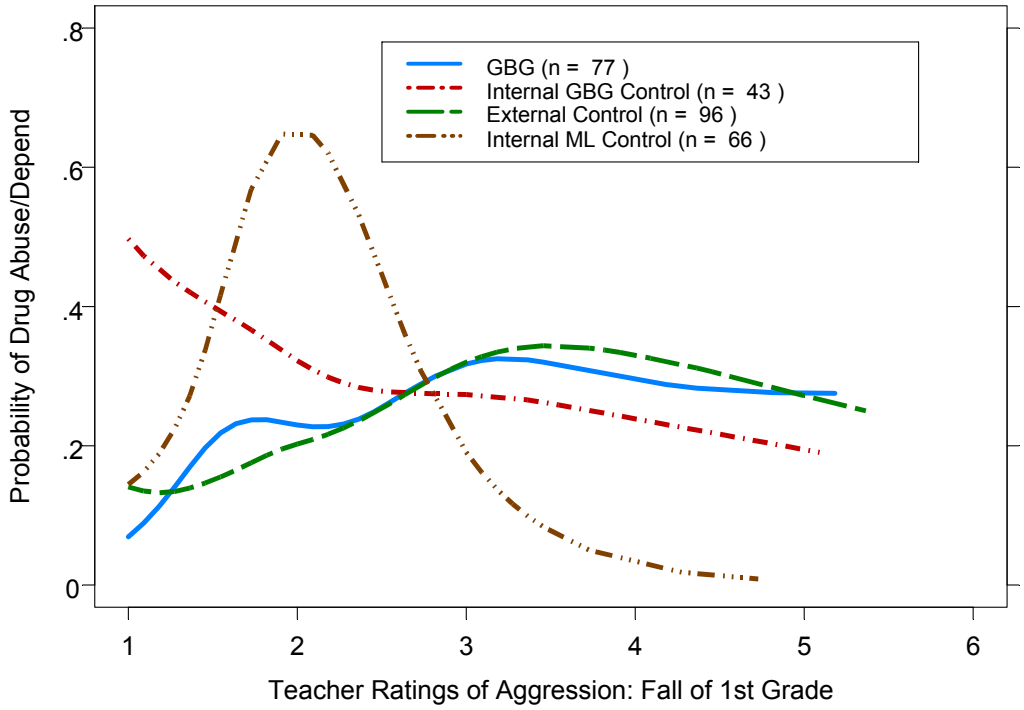
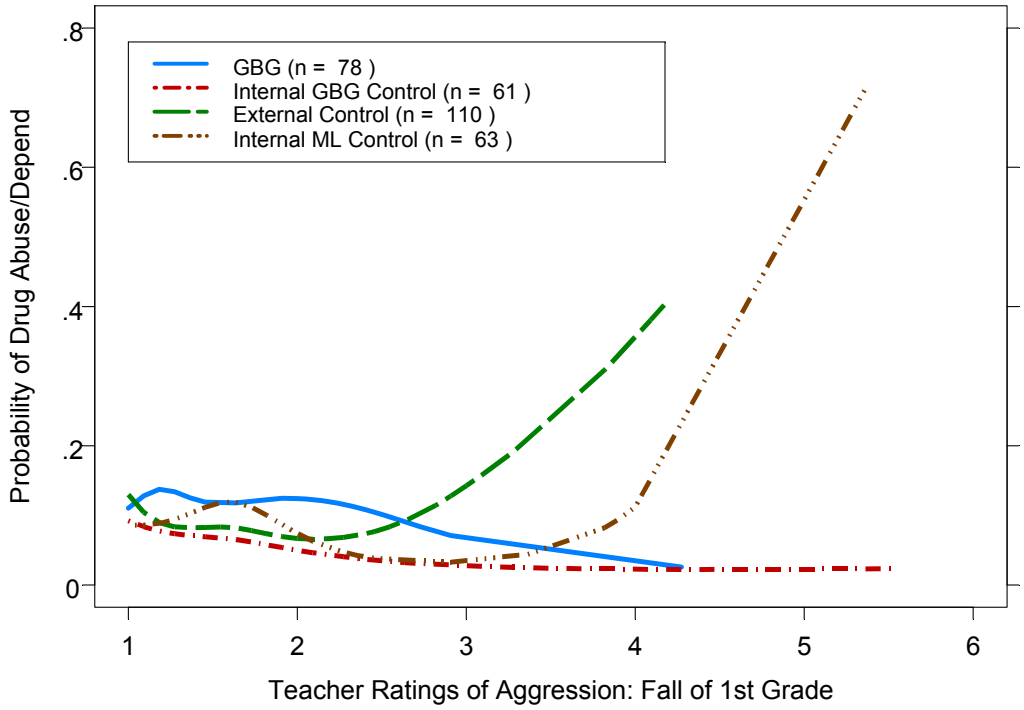


Fig 1.4
GBG Impact vs. All 3 Control Groups on Drug Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)



2. Lifetime Alcohol Abuse/Dependence (Cohort 2)

Fig 2.1
GBG Impact vs. All 3 Control Groups Combined on Alcohol Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

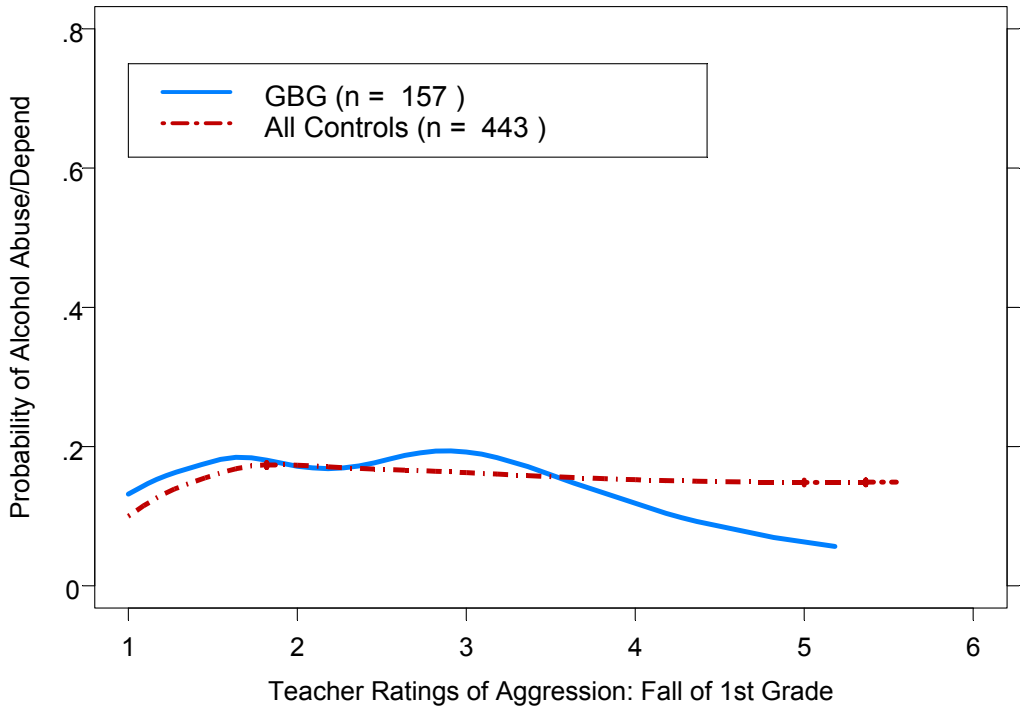


Fig 2.2
GBG Impact vs. All 3 Control Groups Combined on Alcohol Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

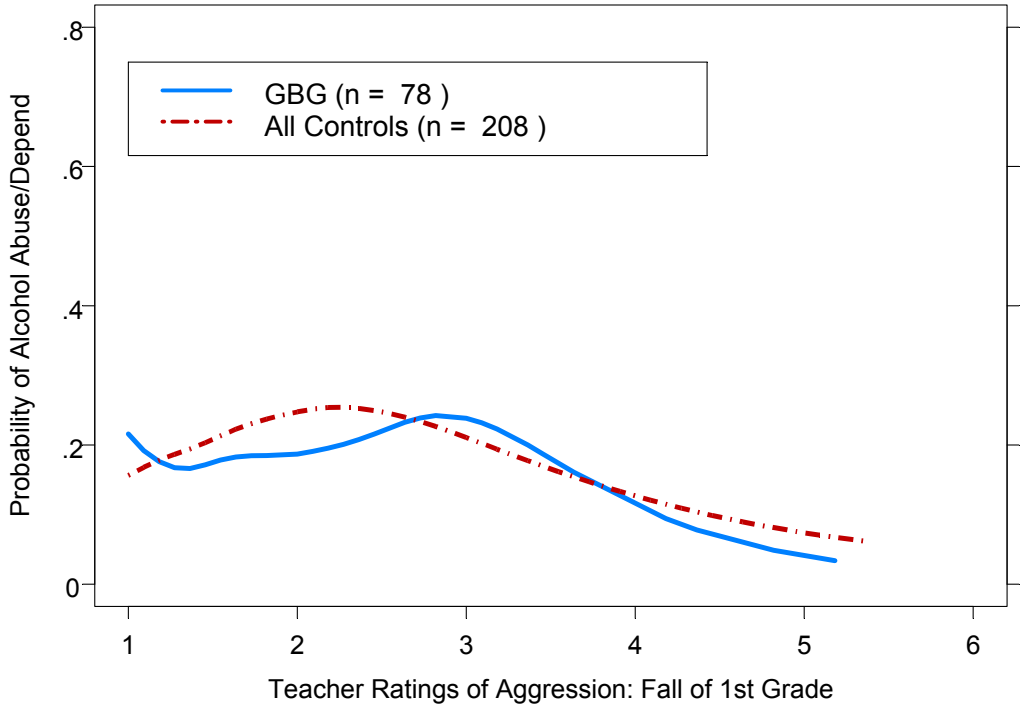


Fig 2.3
GBG Impact vs. All 3 Control Groups Combined on Alcohol Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)

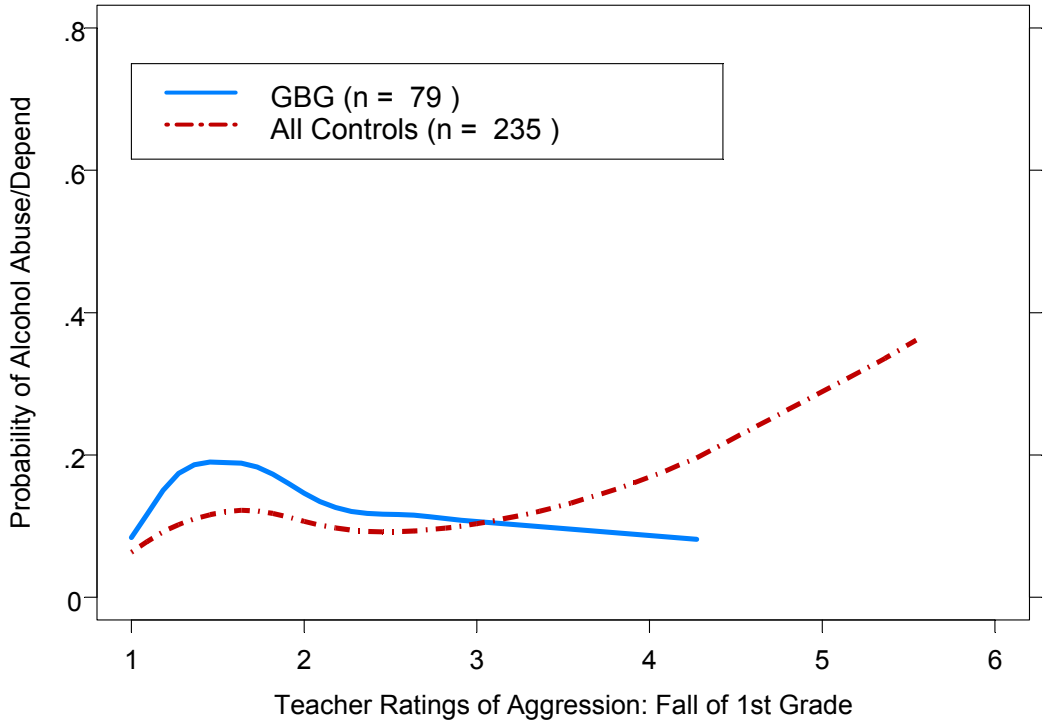


Fig 2.4
GBG Impact vs. All 3 Control Groups on Alcohol Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

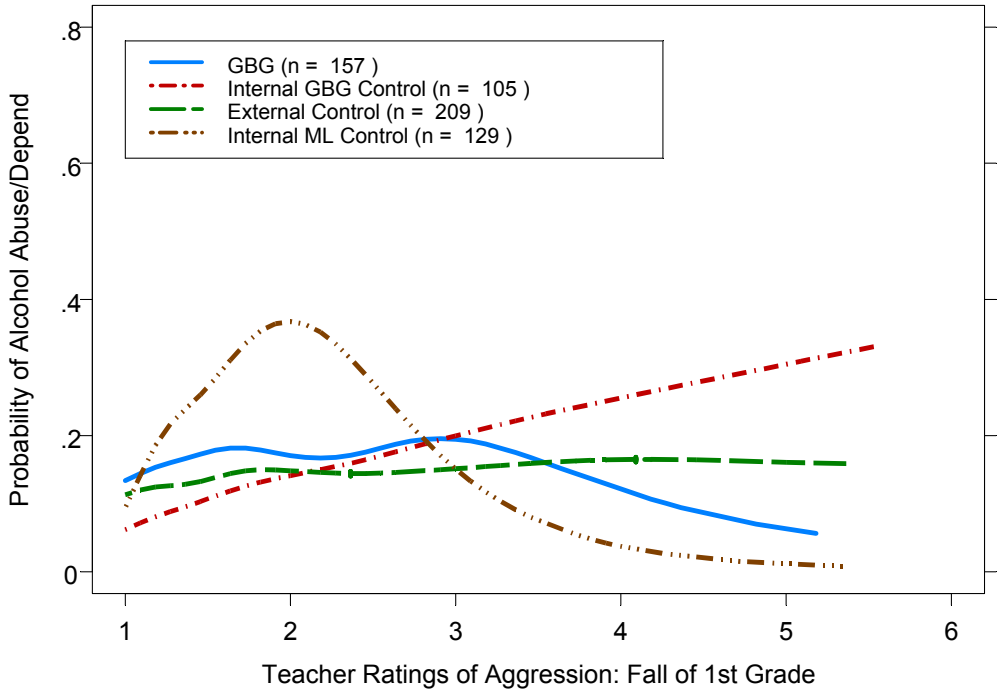


Fig 2.5
GBG Impact vs. All 3 Control Groups on Alcohol Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

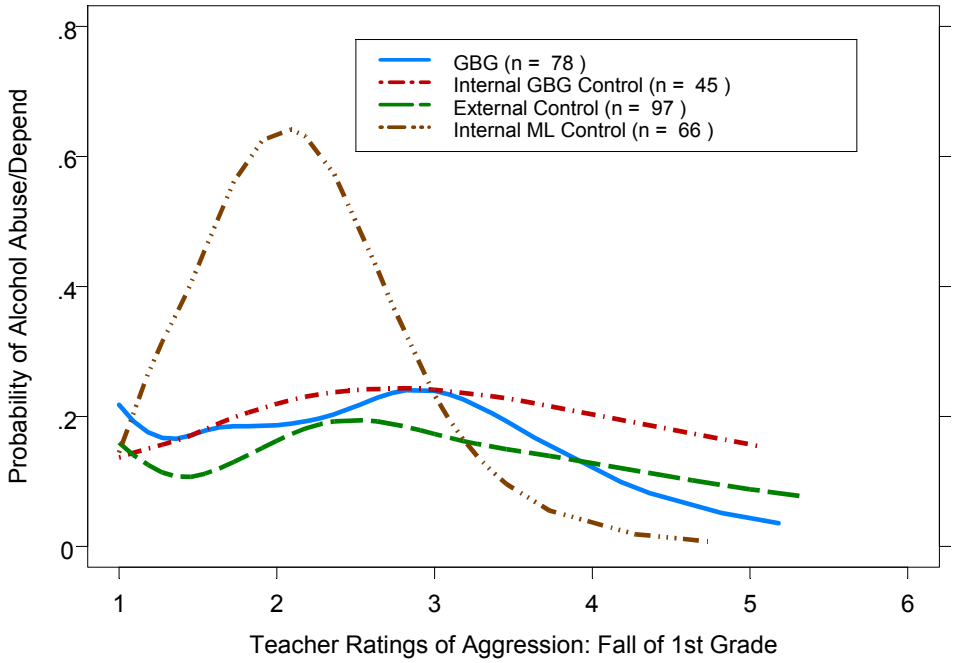
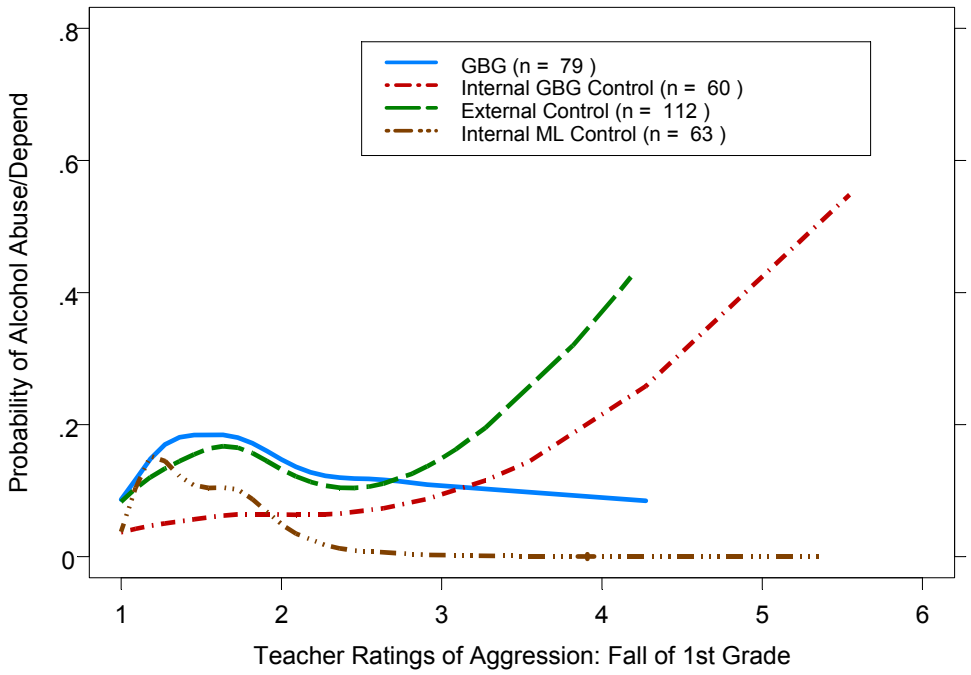


Fig 2.6
GBG Impact vs. All 3 Control Groups on Alcohol Abuse/Dependence Disorder by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)



3. Lifetime Regular Smoking

Fig 3.1
GBG Impact vs. All 3 Control Groups Combined on Lifetime Regular Smoking by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

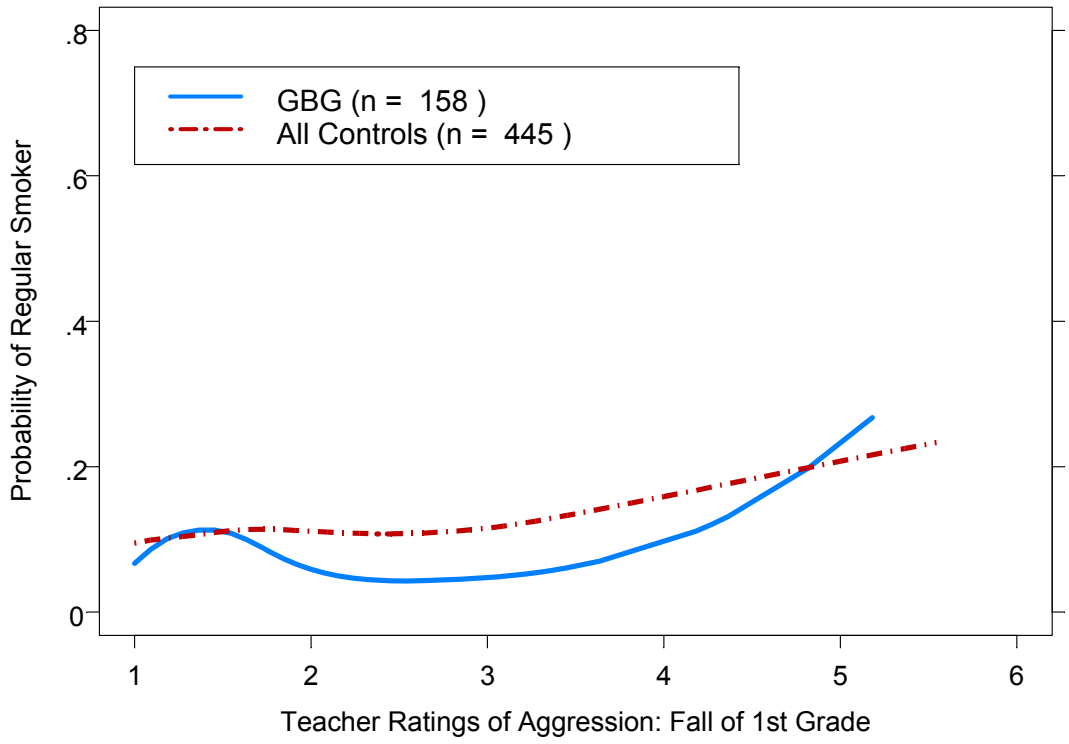


Fig 3.2
GBG Impact vs. All 3 Control Groups Combined on Lifetime Regular Smoking by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

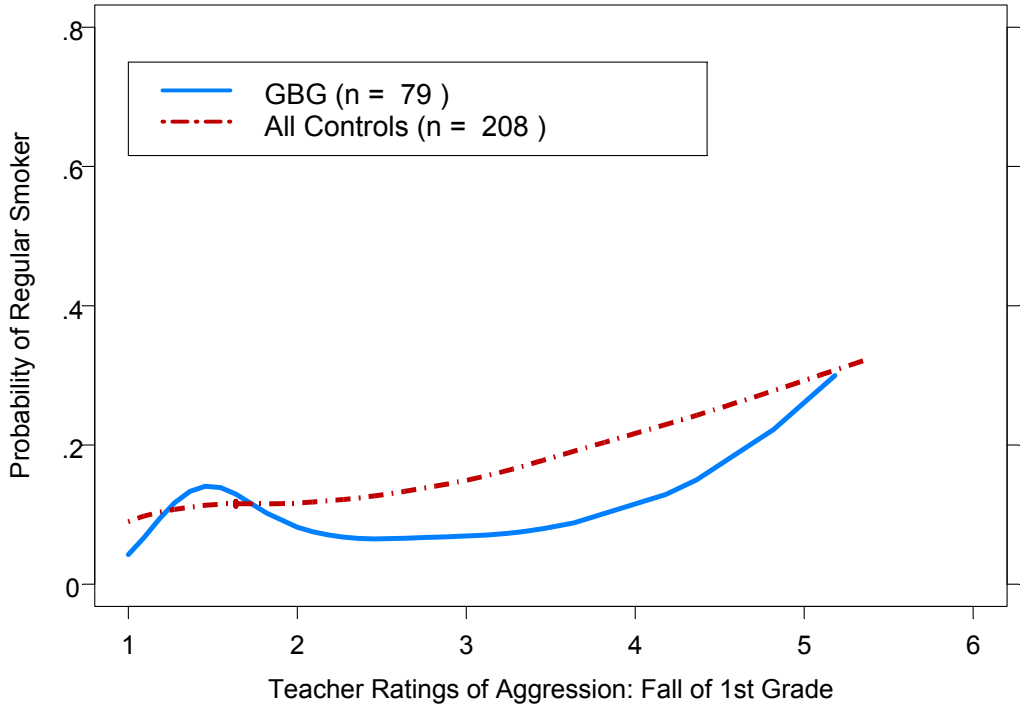


Fig 3.3
GBG Impact vs. All 3 Control Groups Combined on Lifetime Regular Smoking by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)

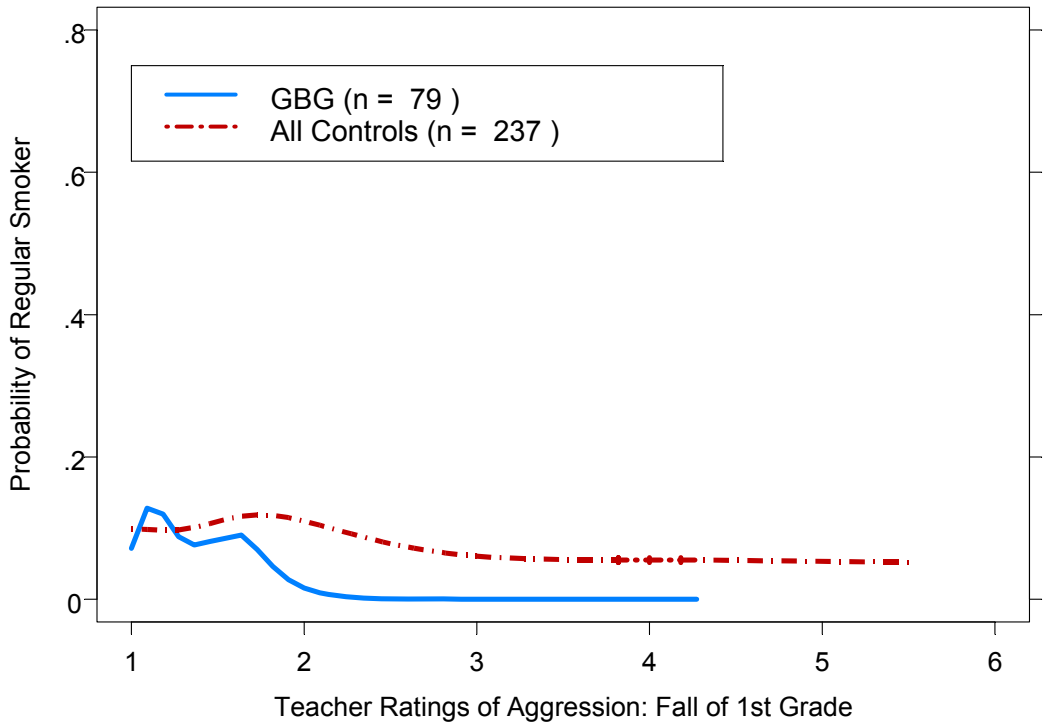


Fig 3.4
GBG Impact vs. All 3 Control Groups on Lifetime Regular Smoking by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

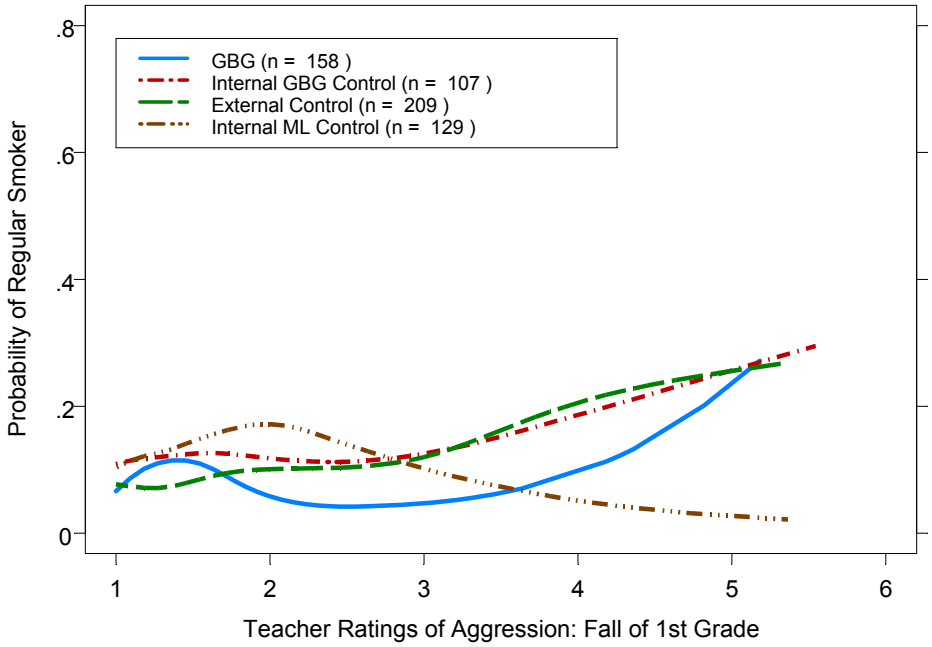


Fig 3.5
GBG Impact vs. All 3 Control Groups on Lifetime Regular Smoking by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

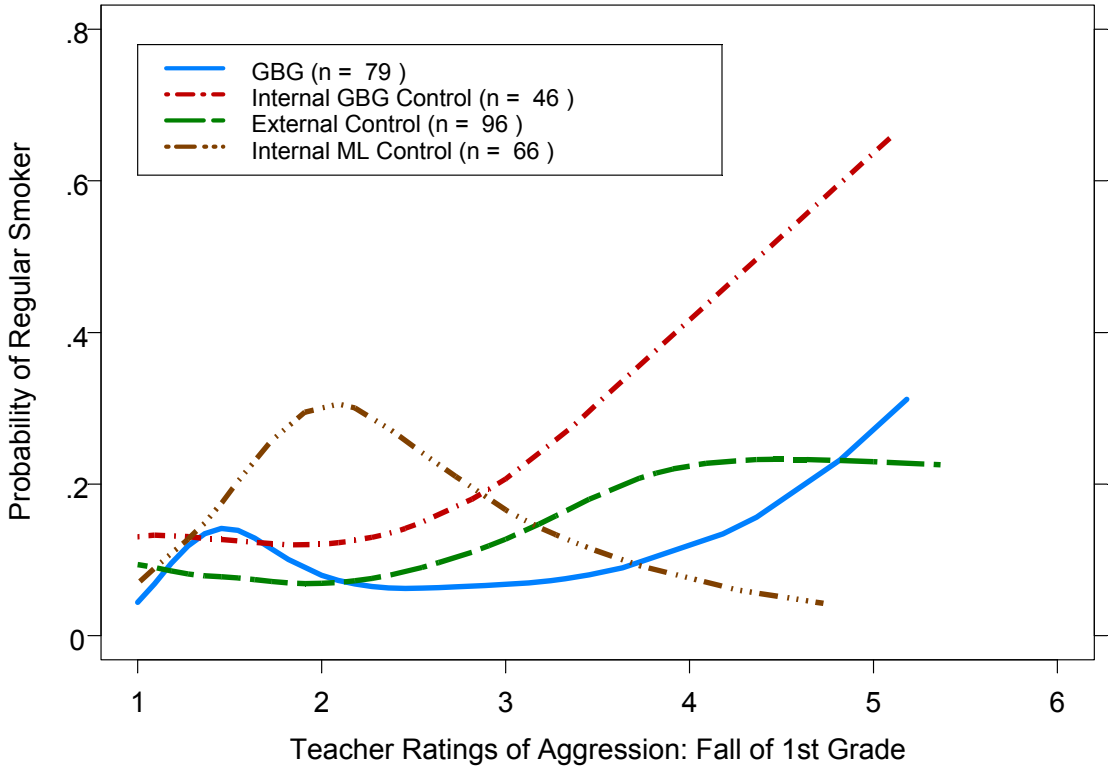
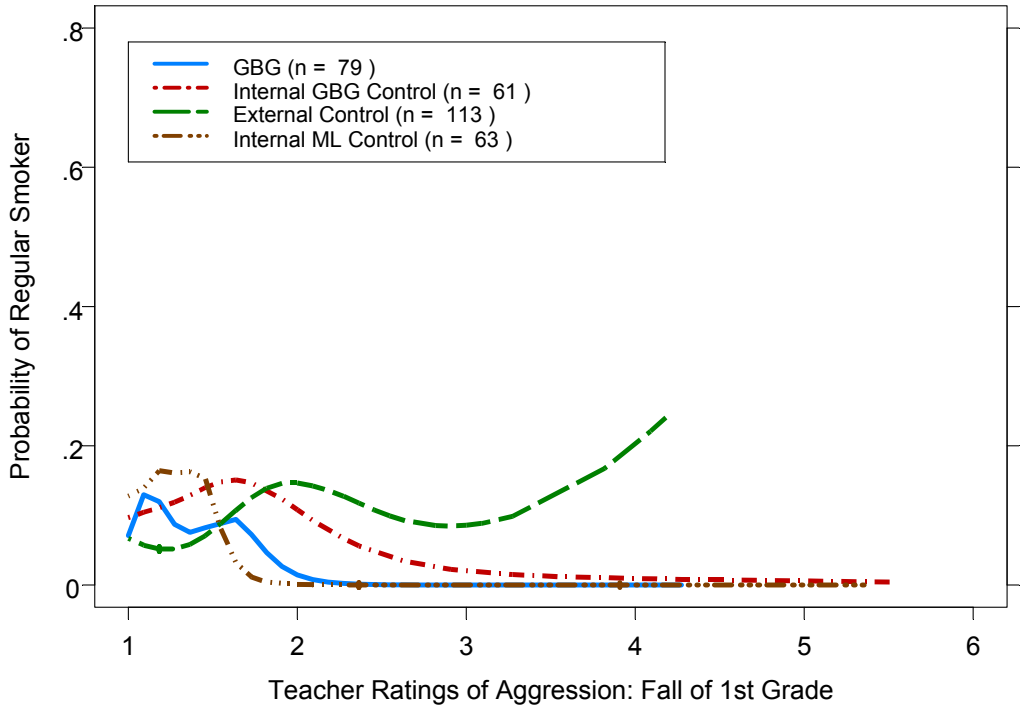


Fig 3.6
GBG Impact vs. All 3 Control Groups on Lifetime Regular Smoking by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)



4. Anti-Social Personality Disorder (ASPD)

Fig 4.1
GBG Impact vs. All 3 Controls Combined on ASPD by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

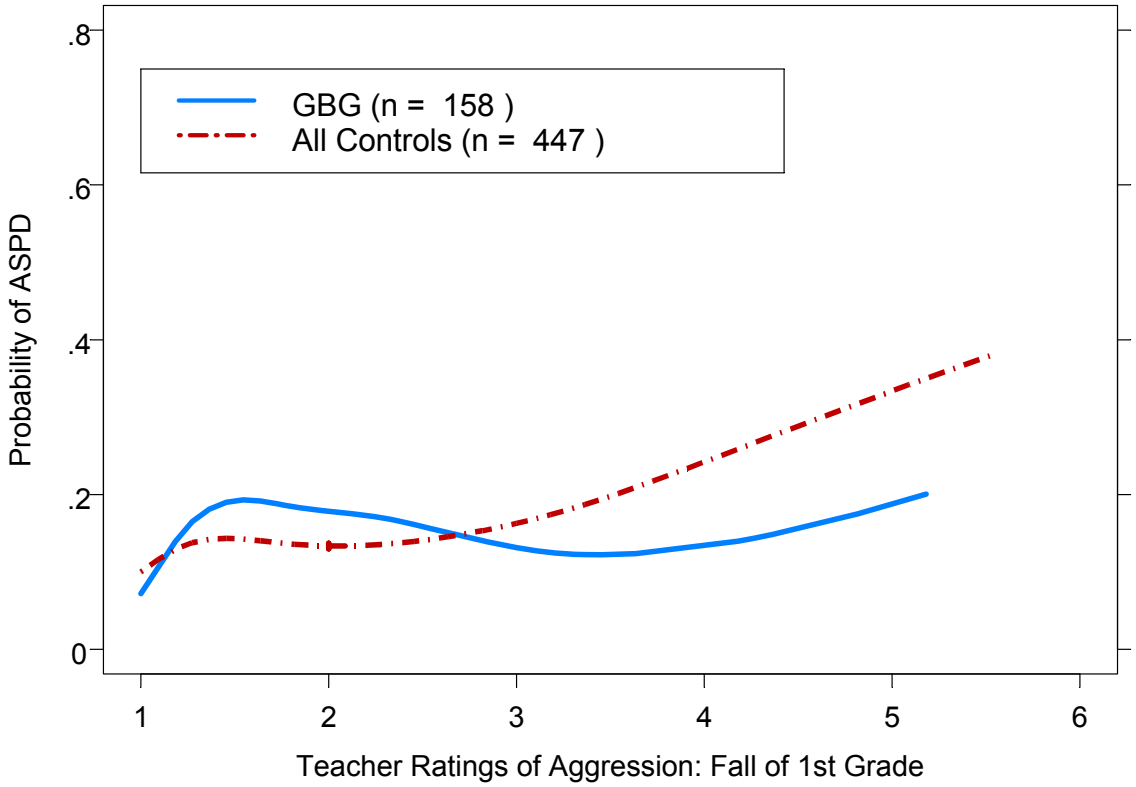


Fig 4.2
GBG Impact vs. All 3 Controls Combined on ASPD by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

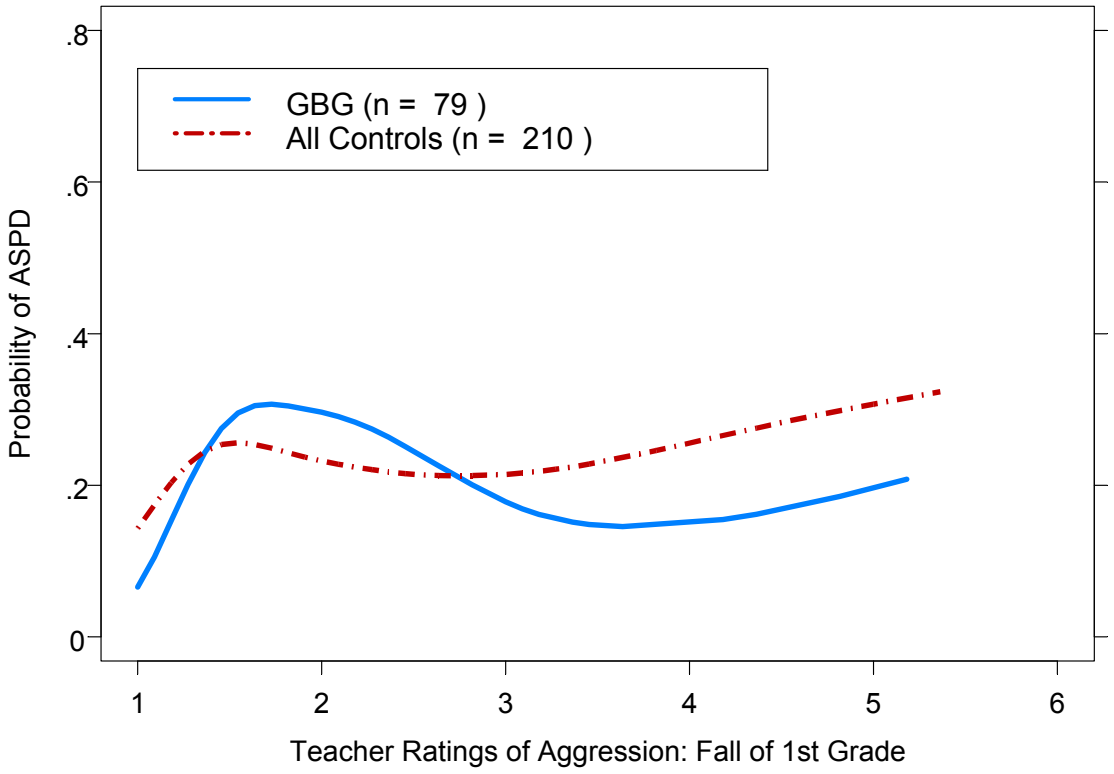


Fig 4.3:
GBG Impact vs. All 3 Controls Combined on ASPD by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)

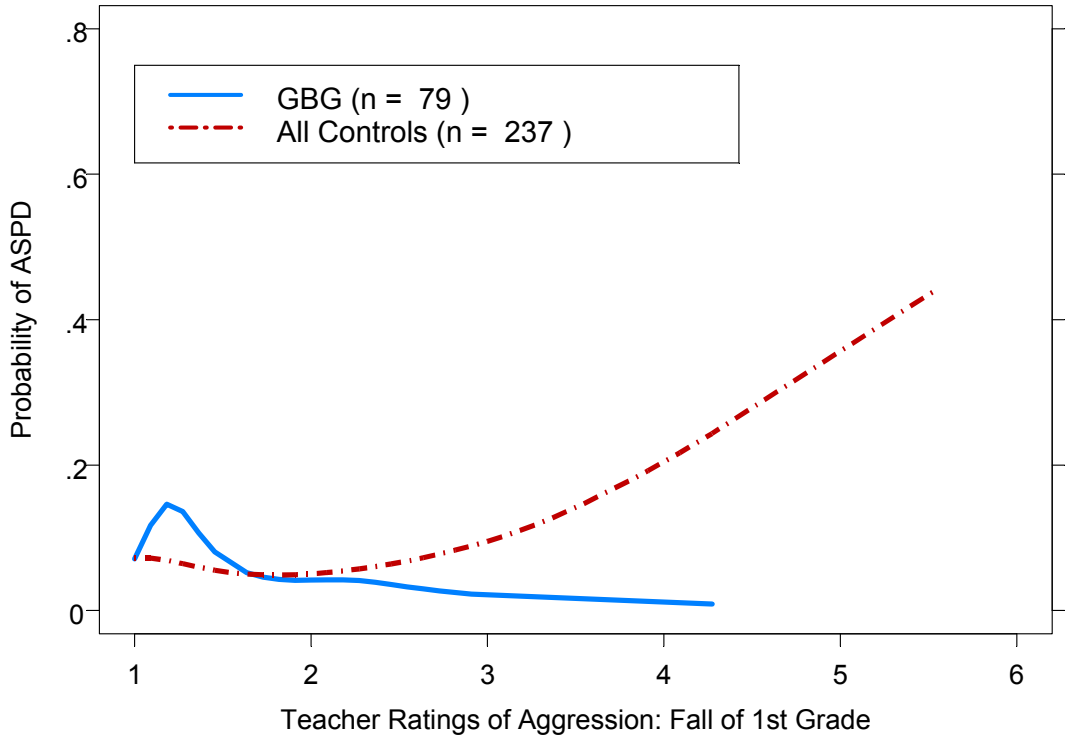


Fig 4.4
GBG Impact vs. All 3 Controls on ASPD by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

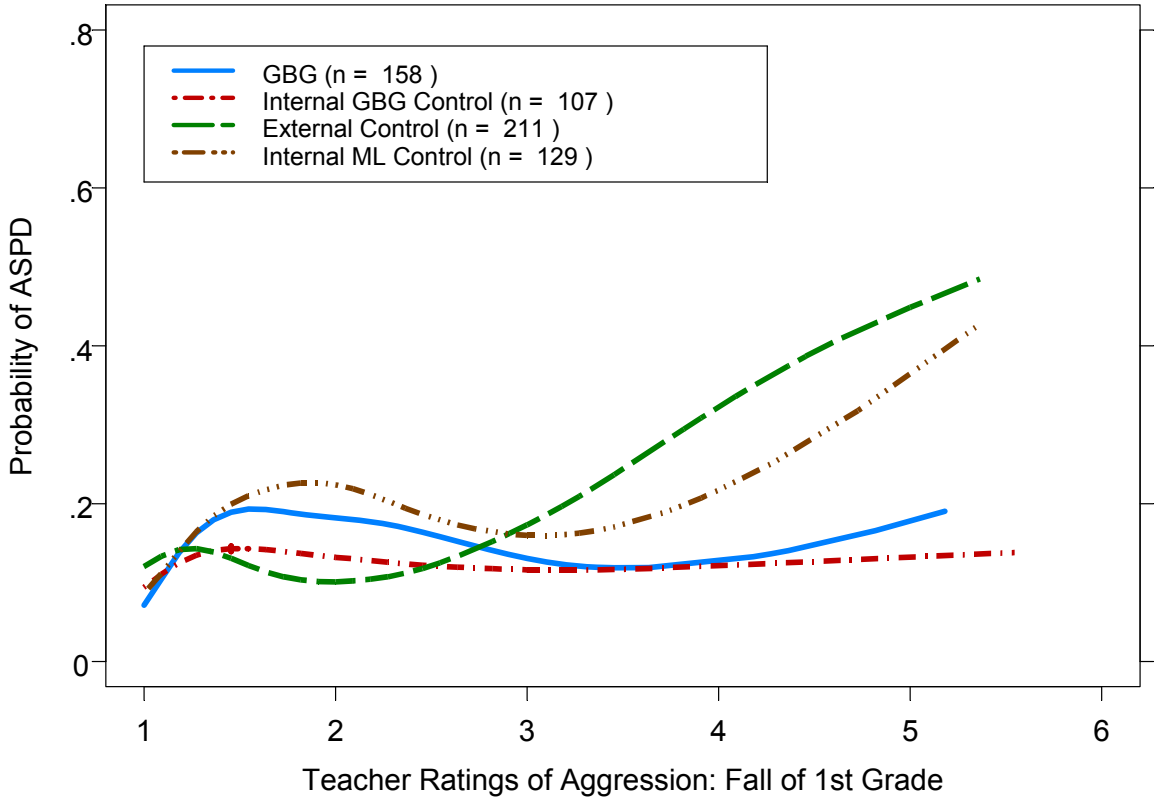


Fig 4.5
GBG Impact vs. All 3 Controls on ASPD by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

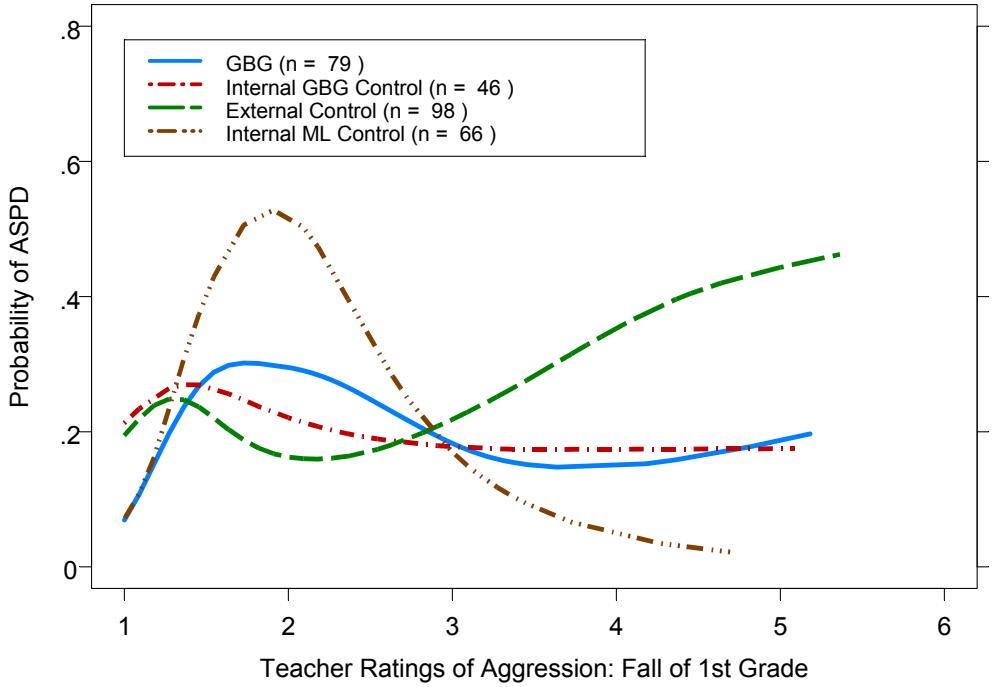
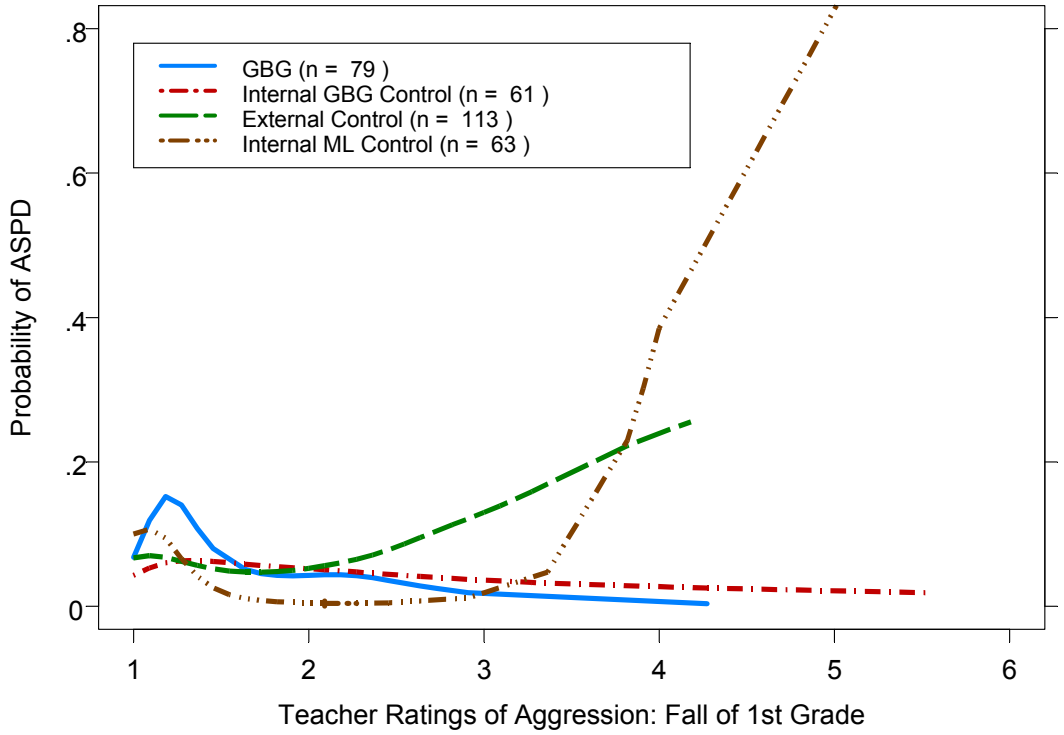


Fig 4.6
GBG Impact vs. All 3 Controls on ASPD by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)



4. High School Graduation

Fig 5.1:
GBG Impact vs All 3 Control Groups Combined on High School Graduation by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

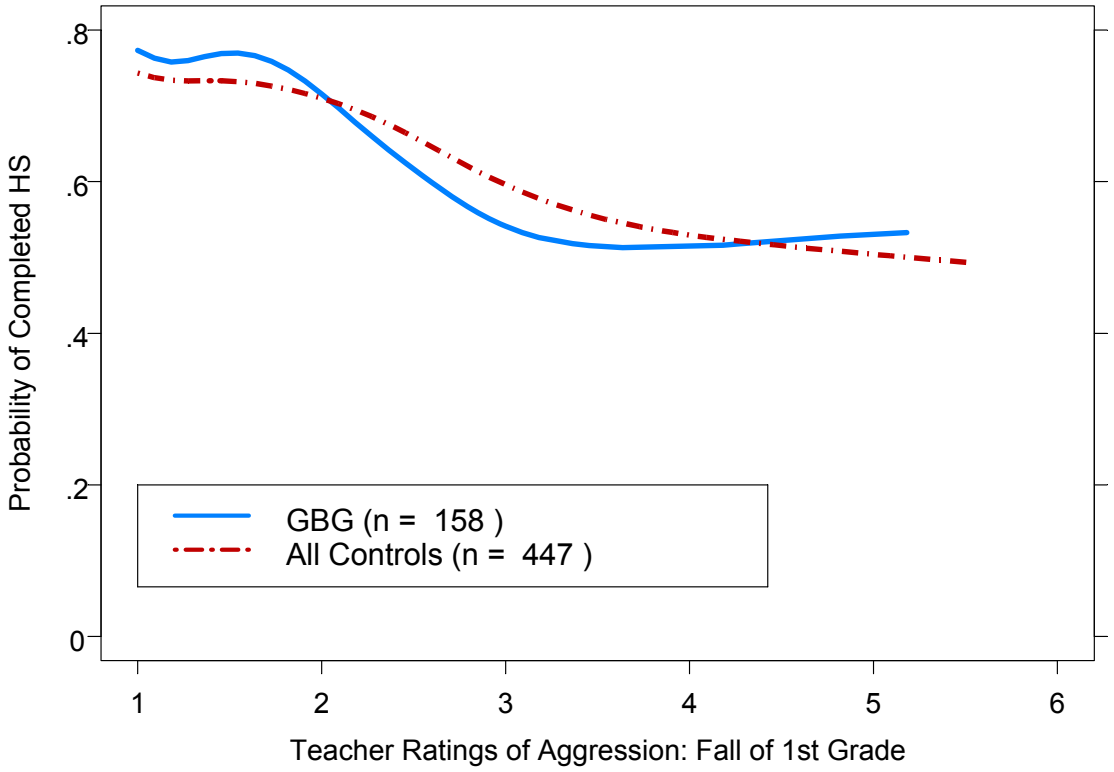


Fig 5.2:
GBG Impact vs All 3 Controls on High School Graduation by Baseline Aggressive Disruptive, Behavior for Males and Females (Cohort 2)

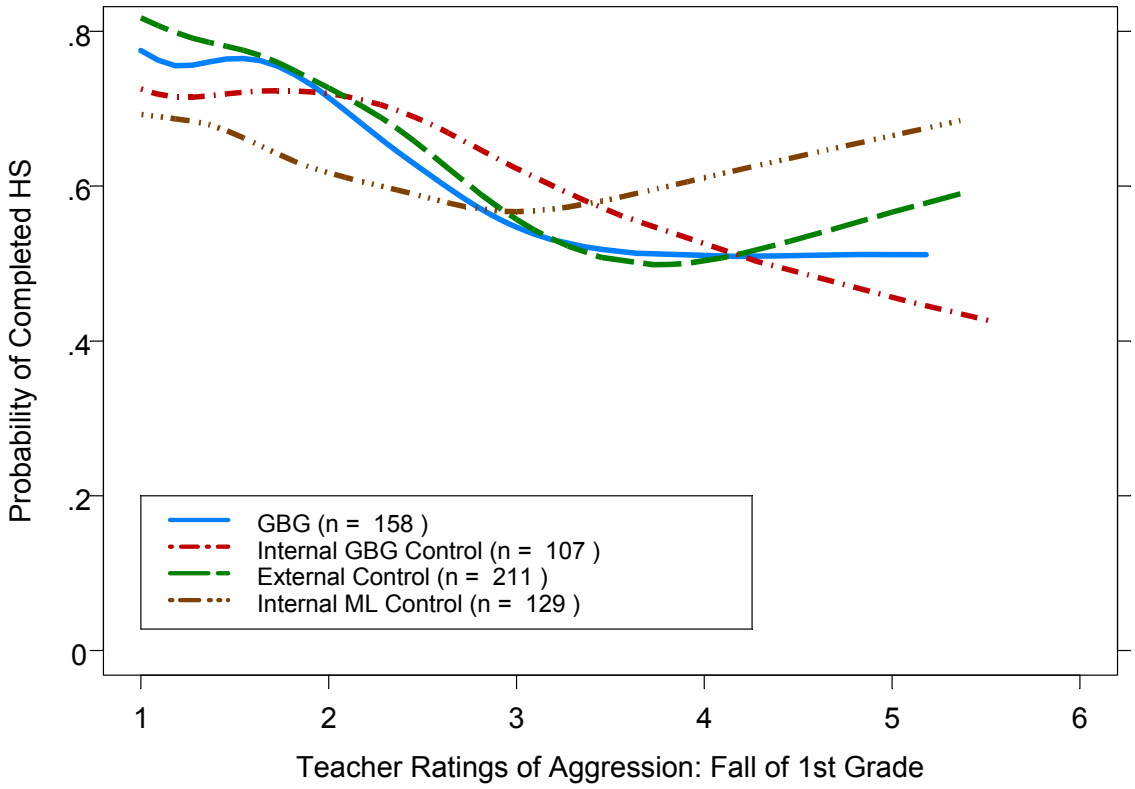


Fig 5.3:
GBG Impact vs All 3 Control Groups Combined on High School Graduation by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

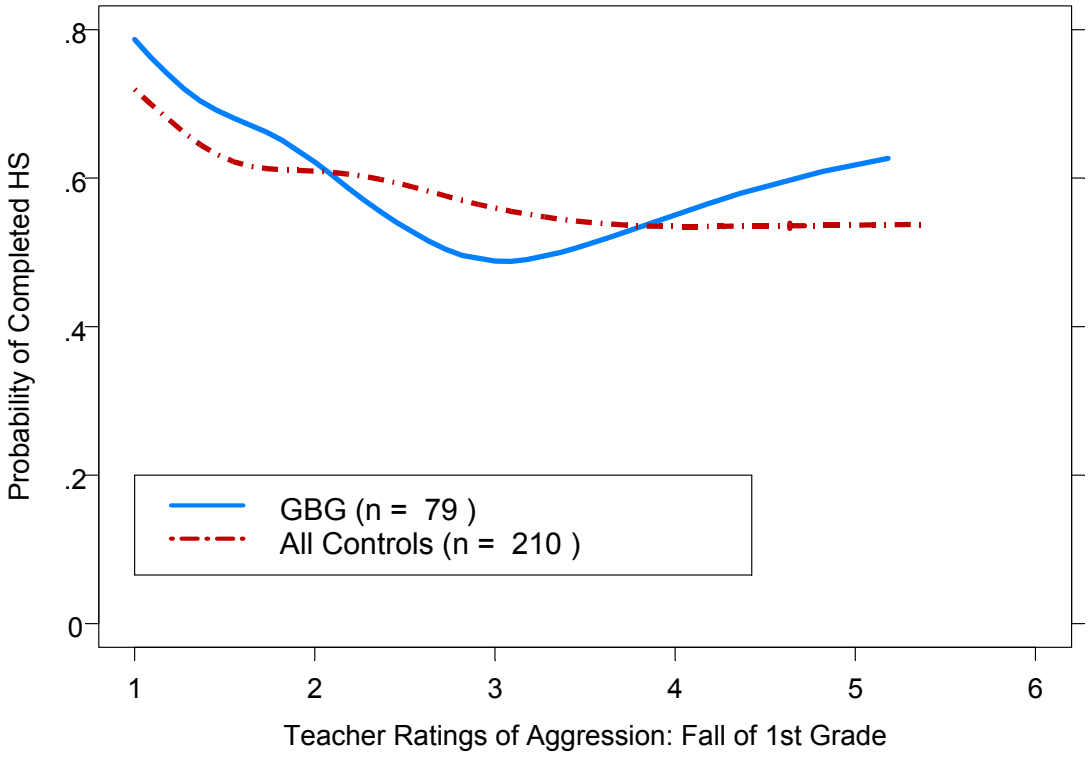


Fig 5.4:
GBG Impact vs All 3 Control Groups on High School Graduation by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

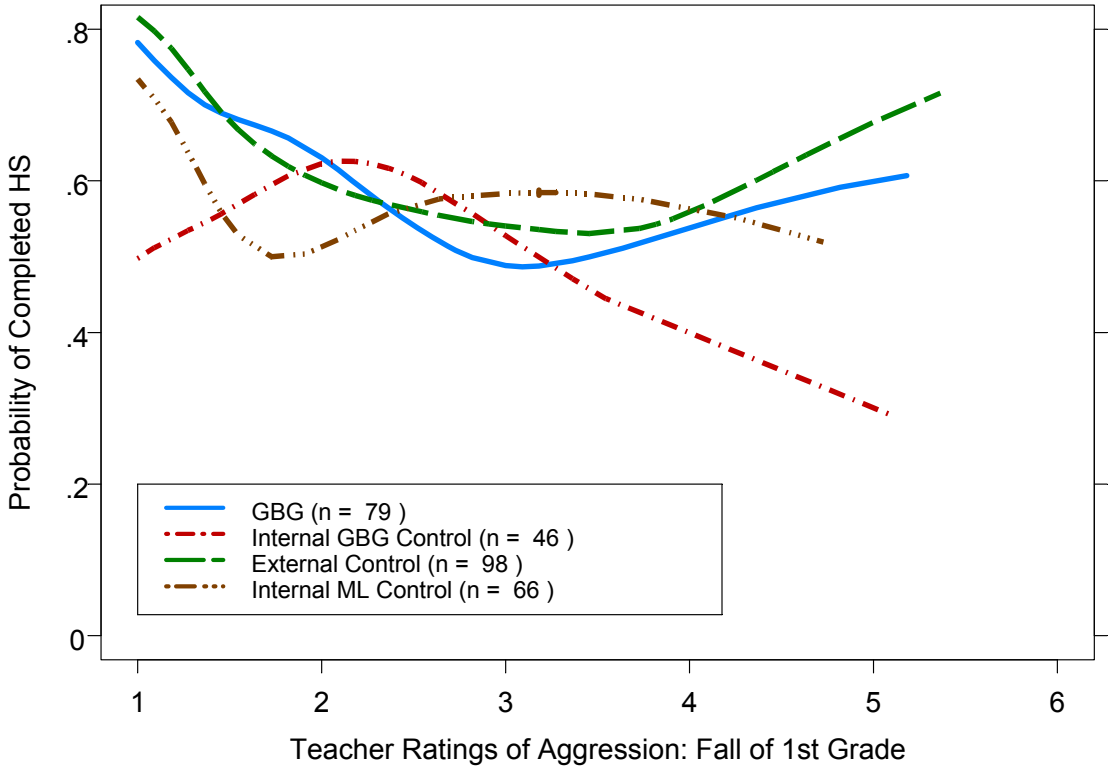


Fig 5.5:
GBG Impact vs All 3 Control Groups Combined on High School Graduation by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)

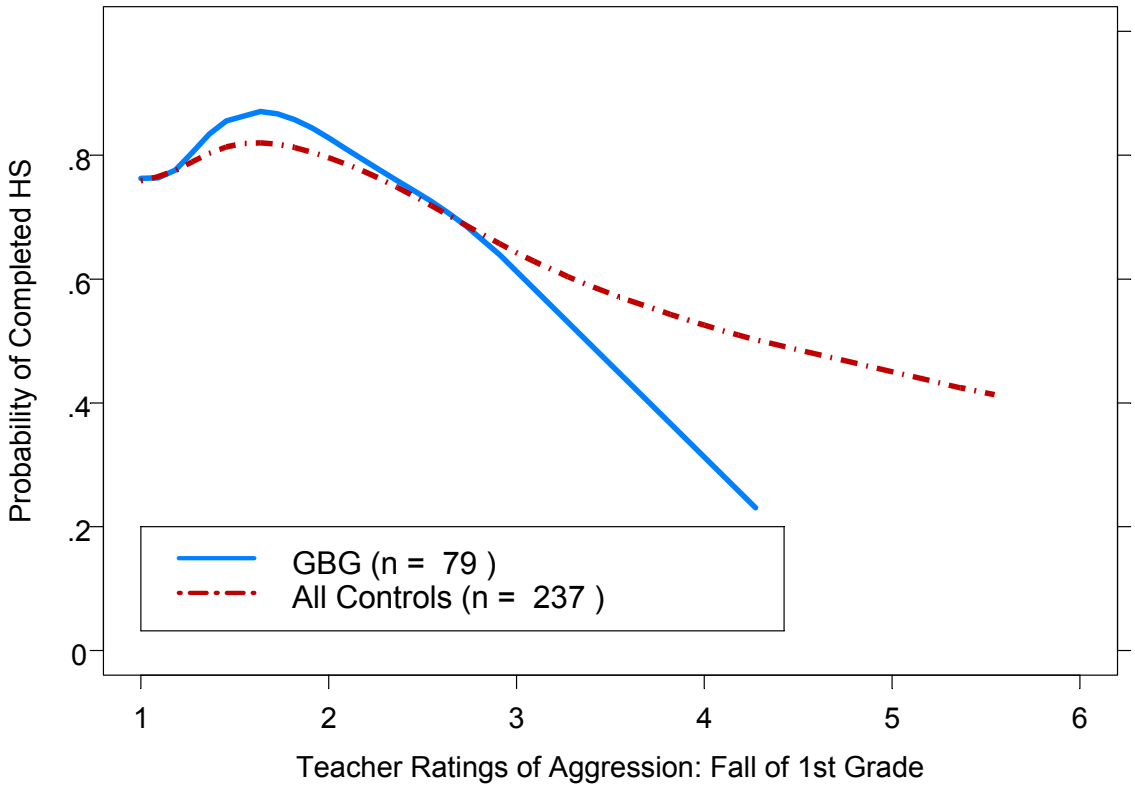
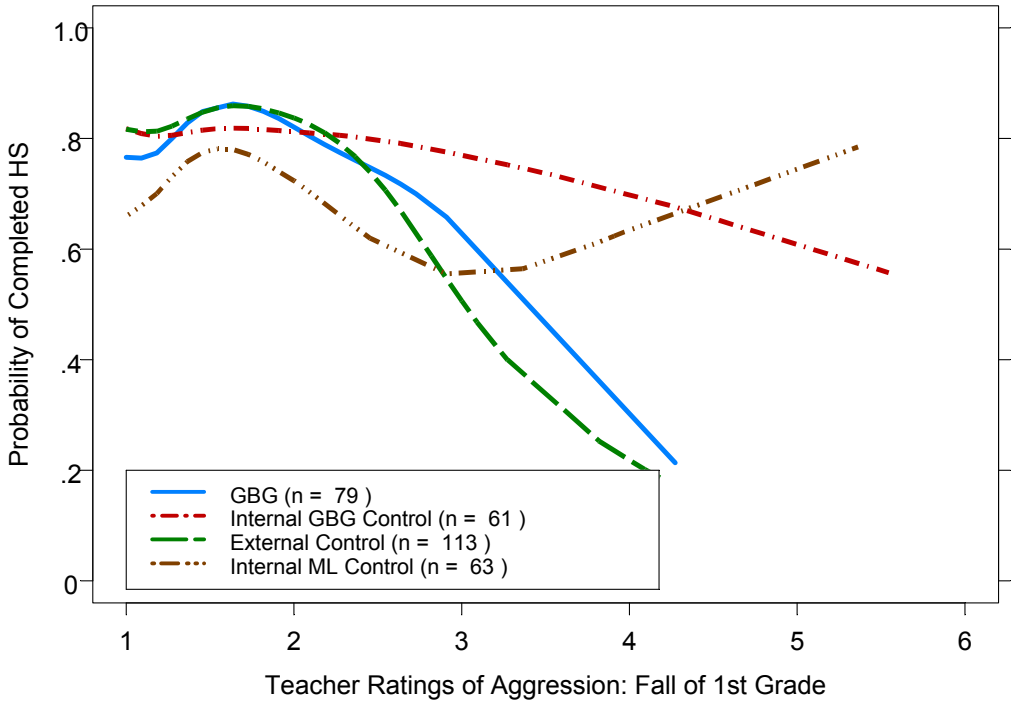


Fig 5.6:
GBG Impact vs All 3 Control Groups on High School Graduation by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)



6. Lifetime Major Depressive Disorder (MDD)

Fig 6.1:
GBG Impact vs All 3 Control Groups Combined on Lifetime Major Depressive Disorder by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

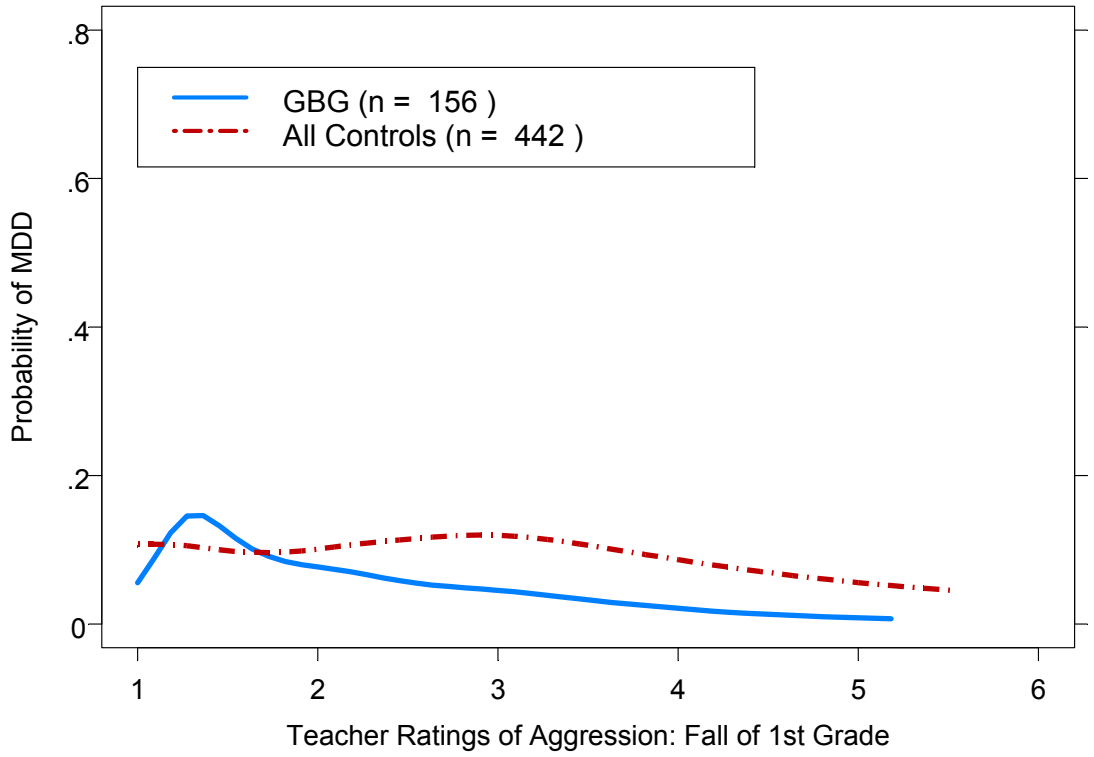


Fig 6.2:
GBG Impact vs All 3 Controls on Lifetime Major Depressive Disorder by Baseline Aggressive, Disruptive Behavior for Males and Females (Cohort 2)

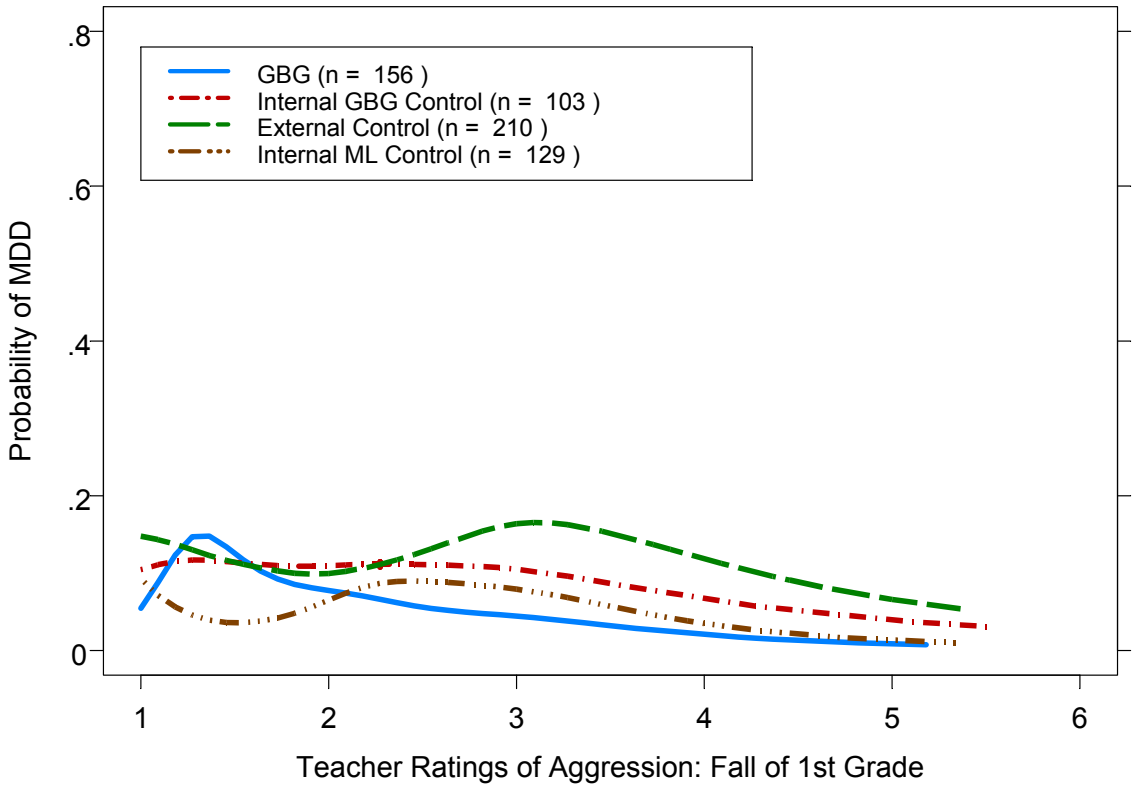


Fig 6.3:
GBG Impact vs All 3 Control Groups Combined on Lifetime Major Depressive Disorder by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

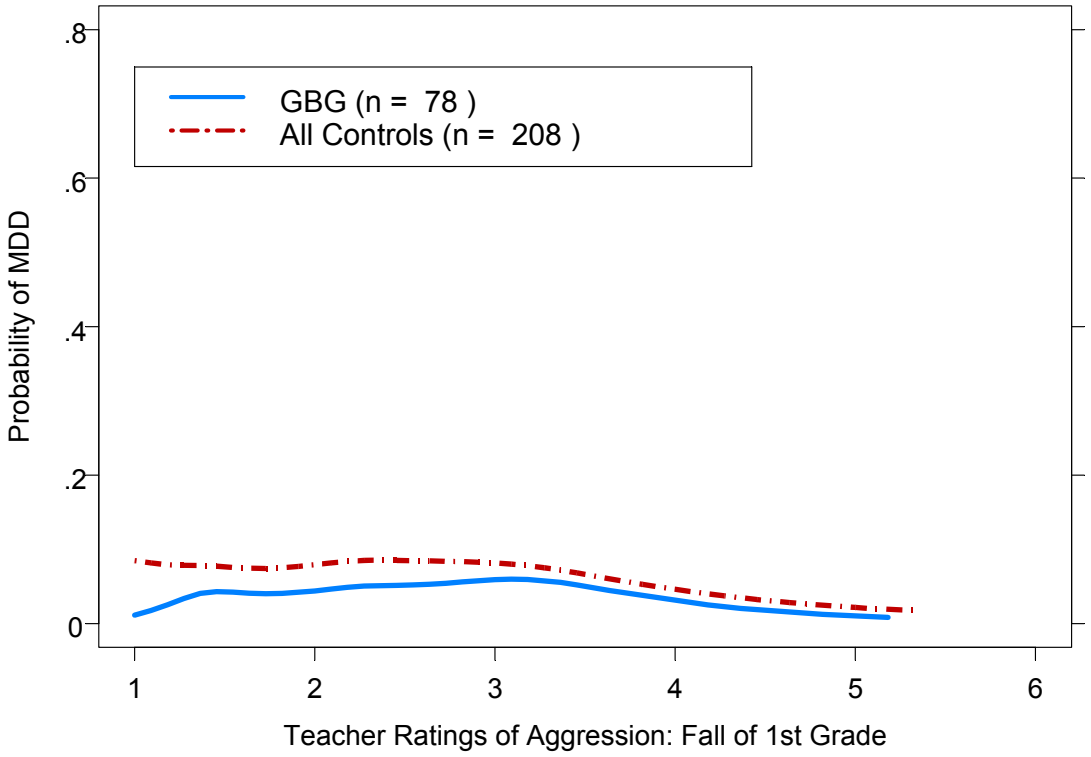


Fig 6.4:
GBG Impact vs All 3 Control Groups on Lifetime Major Depressive Disorder by Baseline Aggressive, Disruptive Behavior for Males (Cohort 2)

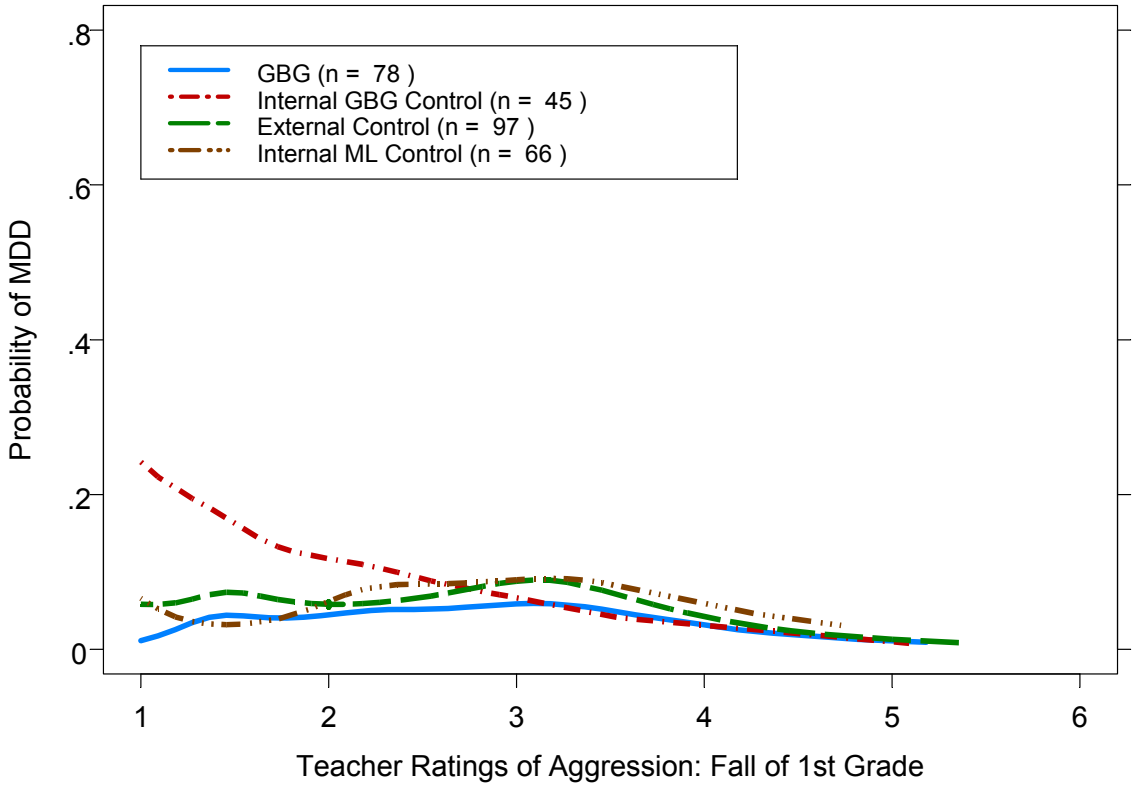


Fig 6.5:
GBG Impact vs All 3 Control Groups Combined on Lifetime Major Depressive Disorder by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)

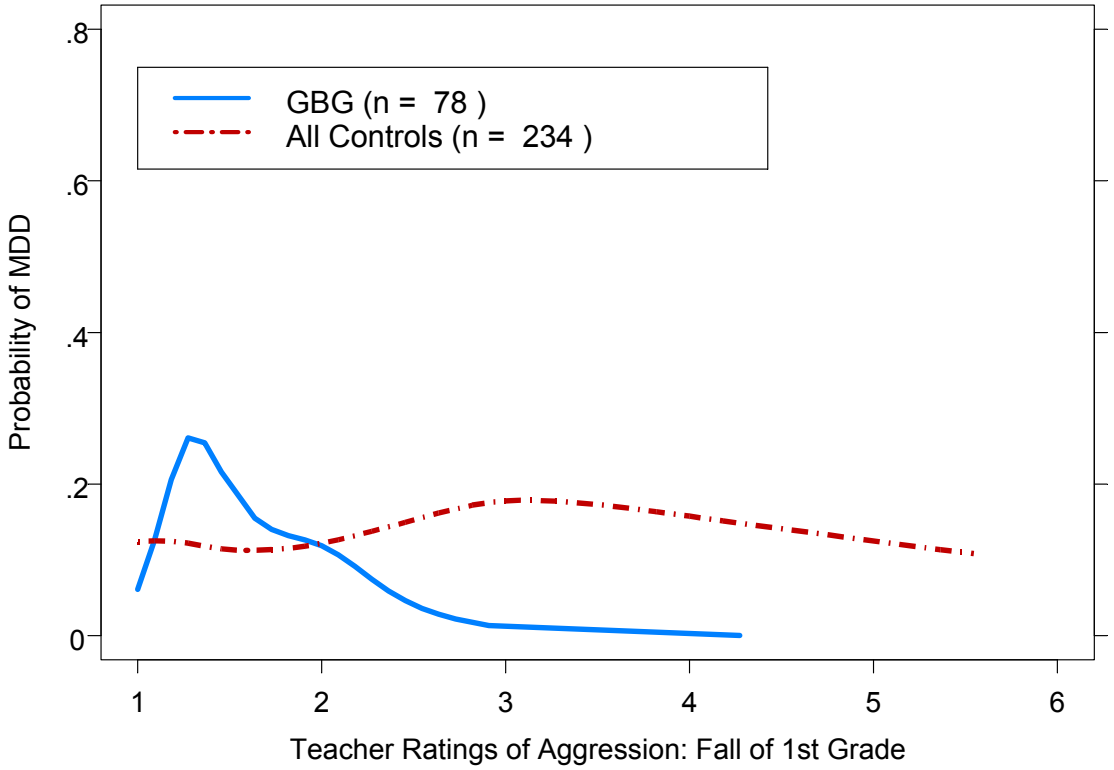


Fig 6.6:
GBG Impact vs All 3 Control Groups on Lifetime Major Depressive Disorder by Baseline Aggressive, Disruptive Behavior for Females (Cohort 2)