High and Low Inference Test of the Teacher Gender Attention Bias Hypothesis

by

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Abstract

An often discussed phenomenon in education is teacher gender bias. Sadker & Sadker (1993) hypothesized that boys show a tendency to ignore standard behavioral norms in the classroom more frequently than girls do. This effect is aggravated by the fact that boys face less negative consequences from teachers when they are disruptive. The purpose of this study was to replicate these results, develop a categorization scheme for students' disruptive behaviors, and to classify teacher responses. Video footage of twenty-five classrooms (grade 1-9) were reviewed, identified by incident, and classified according to a rough starting categorization which was refined during the coding process. Teacher responses were coded similarly. We identified 574 incidents of disruptive behavior which fell into eight categories. Five types of teacher responses emerged. Contingency tables were analyzed to test associations between incident category, teacher responses and gender. Chi-square statistics confirmed gender differences in the frequency of incidents type but failed to demonstrate differences in teachers' reactions based on gender.

Student disruptive behavior and teacher reaction: a closer look at the Teacher Gender Bias Hypothesis

More than twenty-five years ago, Myra and David Sadker finished a research and intervention study (Sadker & Sadker, 1984) that documented the issue of gender bias in the educational system in the United States. The basic tenet of their findings is that girls are shortchanged in our schools in many ways, including by biases in textbooks that emphasize male dominance in the professional world, gender bias in the curriculum, and a differential treatment of boys and girls in the classroom by the teacher (for an overview, see Sadker, Sadker & Klein 1991).

Focusing on the latter aspect of the "gender bias hypothesis", the purpose of the current study was to replicate one particular claim, namely that teachers tend to respond differently to student misbehavior in class depending on gender. In the following, we first review the core aspects of the gender hypothesis briefly before developing the empirical question of our study.

Gender Bias in the classroom

Although the gender bias hypothesis made a remarkable career as common knowledge in introductory textbooks of educational psychology, women studies, etc., its empirical basis is surprisingly thin. Apart from the classic Sadker & Sadker study, which is only published as a technical report paper of the National Institute of Education, no studies were published in peer-reviewed journals over the last twenty-five years that either replicate the findings or address the issue otherwise using a quantitative paradigm. The most recent source and most comprehensive summary of the gender bias hypothesis is the 1994 book by the original authors (Sadker & Sadker, 1994, see also Sadker, Sadker & Klein, 1991). Important for the current study are those elements of the gender bias theory that address the interaction between teachers and students in the classroom. Although not always consistent across the publications, the gender bias hypothesis comprises the following separate aspects:

According to the authors, boys, compared to girls,

a) get more learning relevant instructional attention from the teacher

b) receive more substantive feedback/more precise criticism

c) call out more often in classrooms

d) do not get reprimanded by the teacher if they call out

On occasion (e.g., Sadker & Sadker, 1994), the gender bias hypothesis is stated more broadly, for example, that boys get more teacher attention or that teachers are more lenient with boys when it comes to disruptive behavior or behavior that otherwise violates behavioral norms in the classroom context. This is somewhat unfortunate, as it makes it difficult for an empirical researcher to derive precise hypotheses that can put it to an empirical test. For example, the fact that boys get more attention per se does not immediately mean that there is a gender bias. If boys *need* more attention, should a teacher withhold help in order to distribute attention equally? Implicitly, the gender bias hypothesis assumes that boys get more attention “undeservingly”.

The current study

In order to avoid this ambiguity, we focus on more concrete statements in this context which can be operationalized more easily, namely the question whether teachers react differently to students’ disruptive behavior (including “calling out”) depending on gender. Using videotape footage, the purpose of the study was to determine whether or not boys and girls differ in the total amount of disruptive behavior they show in regular classrooms.

In addition, we wanted to determine whether there are gender differences in the frequency across incident categories, corresponding to the different types of disruptive behavior. Finally, we wanted to investigate whether teachers respond differently to boys' and girls' misbehavior. Based on the literature the following hypotheses were tested:

a) Boys show more disruptive behaviors than girls

b) Boys show more disruptive behaviors than girls in all subcategories of incidents

c) Teachers are more lenient with boys than with girls, i.e. boys are less often reprimanded than girls.

Method

Sample

For the purpose of the current study, we analyzed twenty-five videos that were taken from a previous study on teacher attention. This study used mobile eye-tracking technology to monitor teachers' eye movements and fixations, which were seen as an indicator of teachers' attention focus on specific students and other objects in the classroom (for details, see Miller et al, 2011). The mobile eye-tracking technology consisted of a pair of glasses worn by each teacher that tracked the eye movements and a "fanny pack" worn around the waist. This allowed for free movement on the part of the teacher, did not majorly interfere with the teacher's ability to teach, and did not provide a major distraction for the students. We assume that the mobile-eye tracking equipment did not change the student-teacher interaction beyond the first few minutes after the research assistant had adjusted the eye-tracking glasses. Almost all teachers reported that they basically forgot about the eye-tracking system and the video cameras in the room. The gender-bias analysis based on the eye-tracking information was reported elsewhere (Cortina et al., in preparation).

The original study included twenty-five student teachers and the corresponding twenty-five experienced teachers that were assigned to them. We decided to focus exclusively on the experienced teachers for the current study to prevent capturing beginning teachers' behaviors which would limit the generalizability of the findings. Students might be more likely to ignore classroom norms with junior teachers who, in turn, might respond in a less professional manner than experienced teachers.

Videotaping Setup

Within each class, there were three stationary video cameras in addition to the mobile eye tracking device, which also recorded the teacher's field of vision. The cameras were placed in the classroom in a manner that made certain that all students were videotaped with at least one camera. For the purpose of the current analysis, the camera footage which provided the best view of all students was used. On occasion, recordings from other cameras were viewed in addition to clarify the nature of an incident. If there was a situation in which the focus of the class would change midway through the video (for example, for a small group activity) – the footage of a different camera that better captured the majority of the students was used instead.

Analytic Strategy

In the empirical literature, no standardized coding rubrics were available to identify and classify students' disruptive behaviors. Similarly, no established way of categorizing teacher responses to incidents of these disruptive behaviors existed. The major task of the current study, therefore, was to create comprehensive categorization rubrics following an iterative script. Since this qualitative step is critical for the validity of the quantitative analyses performed thereafter, we describe this process here in detail.

Student Response Coding

For the data analysis, we followed a two-step approach. In the first step, all twenty-five videos were screened for incidents of disruptive behaviors. At this stage, a broad and inclusive definition was used. “Incidents” were defined as every student behavior that did not follow usual conduct norms in regular classrooms in the United States, irrespective of teacher reaction. For example, a student who is raising her hand to answer a teacher question clearly follows behavioral norms, but when she does so in a disruptive way, by flailing her arms or making gasping noises etc. to get the teachers attention, she violates behavioral standards and it would be coded as an incident. Note that we did not take into consideration that teachers might have established norms for their classrooms that differ from general standards by, e.g., encouraging students to calling out without raising hands. Although possible, it is more reasonable to assume that there is a consensus among teachers about students’ proper behavior, but teachers differ in their tendency to respond to (or ignore) deviations from the norm. It was therefore important to avoid making teacher reaction part of the definition of an incident.

In a second step, all incidents (N = 574) were reviewed in order to develop a taxonomy of students’ disruptive behaviors. Starting with the first ten incidents randomly chosen, a tentative distinction between “talking”, “calling out”, or “disruptively raising hand” was introduced. Then, all other incidents were coded using the starting categories. When an incident did not fit the set of existing categories, we added a new category. A total of seven distinct categories were identified. In a final review step, all incidents that were coded before the final categorization rubric was established were reviewed to check whether they might have a better fit with a category that was identified later. Double codes were allowed in the initial coding process and were given in 7 out of 574 cases (1%). However, in order to reduce the complexity of the analysis, double-coded incidents were reviewed, and a primary and secondary code was given. Only the primary codes were used for all analyses presented in this report.

Another unforeseen issue was that, for some incidents, it was not easy to determine when a particular incident began or ended. For example, a student who sits on her desk instead of the chair throughout the entire class period (with two occasional but inconsequential comments by the teacher) can be counted as one incident, two incidents (based on teacher response), or as nine incidents, if one arbitrarily chose to limit the maximum length to five minutes per incident. While it will remain a potential problem for future studies, it arose in less than 0.5% of all incidents. We therefore decided to err on the safe side and chose to consider them as one incident.

Incidents were separated into eight specific categories: (Disruptive) Hand-Raising (HR), Calling Out (CO), Talking (T), Gesturing (G), Fidgeting (F), Making Noise (N), Off-task/Out of position (OT), and Other/Unknown (O). We defined "Hand Raising" as any incident that involves a student raising his or her hand in a disruptive or distracting way to get the teachers' attention. "Calling Out" was defined as any incident that involves making a comment or revealing an answer when a student does not have the floor. Any incident that involves students either talking to each other (or laughing) disruptively was coded as "Talking", and "Gesturing" was limited to any incident that involves making specific gestures that convey meaning, rather than just generally moving around. "Making Noise" was coded when any disruptive noise was made by a student other than talking or laughing (tapping, banging on anything, etc.). The "Off Task/Out of Position" code was used to correspond to any incident that involves a student not paying attention, doing something other than the class work, or a student not being where they were supposed to be. These categories were representative of the bulk of student misbehavior.

Validity of coding – interrater reliability

In order to check the objectivity of the coding process, two video segments were independently coded by another researcher familiar with the project. The person was instructed to identify student disruptive behavior, to classify it using the developed rubric, and also to classify the teacher response. For those events that were identified by both researchers, Cohen's Kappa was .76, which is comparable to what the rater concordance reported in the literature on classroom observations. However, although the number of disruptions was similar for both coders, the overlap was only 50%, i.e., both coders coded many additional events which the other coder did not indicate. Inspection of the discrepancies suggests that this happened in those phases of a class periods when many disruptive behaviors occur simultaneously, in particular at the beginning of the lesson when the teacher was trying to get everybody's attention. This aspect of the coding needs refinement in the future.

Teacher Response Coding

As a next step, we coded teacher reaction in response to each incident, following the same qualitative procedure to develop a taxonomy as described above for the incidents. In order to establish inter-rater reliability, each category of the final taxonomy was succinctly described verbally with a short paragraph and a representative sample of this behavior was identified from all the incidents that were coded accordingly. To calculate inter-rater reliability, the same research assistant who coded the incidents also coded the teacher reactions based on the two sample videos.

Teacher reactions were divided up into five separate categories: Reprimands (R), Says Name (S), Positively Responds (P), Nonverbal Reaction (NV), and Addresses Class (C). The "Reprimands" category consisted of responses in which the teacher either gave a "warning", or verbally scolded a student in some way. The “Says Name” category simply refers to when the teacher briefly mentioned a student's name to call their attention. The “Positively Responds” category reflected (rare) situations when the teacher applauds or encourages something a student says or does despite the norm violation. “Nonverbal Reaction” was the code used when the teacher did not verbally address a situation, but used their presence or eyes to address behavior. The “Addresses Class” code refers to when the teacher made a general statement to the class without targeting one particular student.

Since the vast majority of the time the responses fell into either the Reprimands category or the Positively Responds category, the other categories were ultimately eliminated by collapsing them with the “Reprimand” category with the understanding that a student feels “warned” when a teacher looks at him/her sternly and says the student’s name. In most cases, a student also will understand that he/she was “meant” when a teacher addresses the whole class to remind them that they are expected to raise their hands quietly when they know the answer to a question.

Cohen’s Kappa for the teacher responses was .82 for all instants that were coded by both independent raters. This indicates that there was a high level of agreement among the coders about the category of response that the teacher exhibited.

Quantitative Analysis

For all incidents, the incident code and teacher response code were recorded and the gender of the student. Descriptive statistics were calculated and chi-square statistics based on the contingency tables were used for hypothesis testing.

Results

The gender comparison of the total of *N* = 574 incidents confirmed that boys are more prone to misbehave in the classroom than girls by a margin of 54.2% to 45.8% compared to the gender ratio of 51% girls to 49% boys across the twenty-five classrooms. Starting with this base rate this difference is significant, χ^2 (1, N = 591 students) = 8.32, p < .01. Therefore, hypothesis one was confirmed. Male students led almost all of the eight categories, except for disruptive hand-raising, which females led 59.7% to 40.3%. A chi-square analysis confirms that the gender ratio differs significantly across the categories, χ^2 (7, N = 574) = 16.69, *p* = .02 (see Table 1). Therefore, hypothesis two, which stated that the gender relation is equal across categories, was rejected.

However, Table 1 also reveal that over 40% of the incidents are “Talking” misbehaviors for which the gender ratio is very close to the expected gender ratio. “Fidgeting”, the second most common incident (accounting for about 15% of the incidents) was also male-led but by an unsubstantial margin. In both cases, the standard residual showed us that the data was very close to lining up with the overall proportion of male to female students across all classrooms (differing by .6 for females, and -.5 for males). It seems that the majority of the ”gendered” categories are less frequent such as being “Off Task/Out of Position” (9.3% of incidents, 68.5% Male) and “Gesturing” (6.1% of incidents, 78.1% Male). This suggests that the most frequent behaviors that violate classroom behavioral norms are committed by both sexes at an almost equal rate.

The vast majority of student misbehavior was not followed by any reaction of the teacher. Only 23.0% of all incidents that were identified triggered a verbal or otherwise visible response (see Table 2). Of the remaining 130 incidents with response, 118 were categorized as “Reprimanding” (91% or 20.9% of all incidents). “Positive Response” reactions were rare

(2.1%) which is not surprising. For the further statistical analysis, a dichotomous variable "Response" or "No Response" was used (77.0% No Response, 23.0% Response) in order to avoid small/empty cells in crosstabulation.

Therefore, in response to our third question regarding the differences in teacher responses by gender, we found no difference in the likelihood of a teacher response, χ^2 (2, N = 574) = 3.12, p <=.21. Student misconduct goes unacknowledged by the teachers in most cases irrespective of gender. Hypothesis three, therefore, was not confirmed by the data. If at all, the data point in the opposite than predicted direction: Overall, girls have a higher chance that their misconduct remains unaddressed by the teacher (81% vs. 75% for boys). It is particularly relevant for the theoretical argument that a positive reaction from the teacher is as rare of an event for boys as it is for girls. Boys did receive more positive reactions than girls, but due to its overall rare occurrence (2.1%) the standardized residuals did not suggest any association with gender in this subsection of the crosstabulation (z-scores of -.6 and +.6).

On a more exploratory basis, our last research question was addressed by the final two tables, which analyses teacher responses by category of incident. First, we distinguished between "No Response", "Reprimanding reaction", and "Positive reaction". Due to the low frequency of positive responses, we collapsed positive and negative responses which results in the dichotomous variable "Response"/"No Response". In both cases, the tests are highly significant with a χ^2 (14, N = 578) = 312.03, p = .000 for the first analysis and a χ^2 (7, N = 578) = 225.59 p = .000, for the second contingency table. These findings indicate that teachers do respond differently to different categories of misbehavior.

For the sake of attention to detail, we will refer primarily to the first table.

Discussion

The purpose of this study was to replicate previous research on classroom gender bias focusing on incidents of student misconduct and teachers respective reaction. We sought to a) develop a coding rubric to categorize instants of misbehavior, b) develop a coding system to categorize teacher response and c) analyze both coding with respect to student gender.

Starting with the total number of disruptive behavior by gender, our prediction based on the gender bias hypothesis (and common-sense) was confirmed; male students are more prone to exhibiting disruptive behaviors than girls, falling in line with previous research. However, this gender difference varied substantially depending on the type of misbehavior. In the two most frequent categories (Talking/Fidgeting) girls are the culprits as often as boys are. With respect to “Hand raising”, the gender ratio is even reversed, i.e., girls are more often found in this category than boys. These differences across categories call into question the notion that boys are *in general* more disruptive. The largest gender difference ‘favoring’ boys was found for “Gesturing” which arguable is less disruptive than “Talking”. More disruptive behavior displayed by boys does not necessarily mean that they draw more attention from the teacher, as the literature on gender bias hypothesis often seems to imply.

However, when we look specifically at “Calling Out” which is the most prominent category of disruptive behavior in the literature on classroom gender bias, the data did, in fact, confirm the gender bias: In 59% of the cases, a boy was the culprit (compared to 41%). While this is still a far cry from Sadker, Sadker & Thomas’ claim that “…boys are eight times more likely than girls to call out in elementary and middle school classrooms” (1991, 297-298) one might argue that the gender bias have become less pronounced over the last twenty-five years. But one should also take into consideration that “Calling Out” account for only 11% of disruptive behaviors observed in our study at this is unlikely to have changed with time.

No evidence was found for the claim that teachers are more lenient with boys when it comes to disruptive behavior. Whether or not a teacher reprimands students for this kind of misbehavior is dependent only on the type of disruptive behavior but not on gender. In fact, of all categories, “Calling Out” had the highest chance to provoke a negative teacher response. There seems to be little tolerance for this type of misbehavior in general –irrespective of student gender.

One of the surprising findings of our analysis was the fact that the vast majority of disruptive behavior displayed remained unaddressed by the teacher. It was beyond the scope of the current investigation to determine whether teachers deliberately ignore certain misbehaviors or whether they simply to not notice them. But students learn quickly that teachers in general have a high threshold when it comes to addressing behaviors that are not majorly disruptive.

Limitations

There were a number of limitations for this study. Perhaps most importantly, the codes that we found were nested under twenty-five classrooms and, therefore, they are not independent observations in the statistical sense. The sample of classrooms included in the study was obtained from a convenience sample in a specific region of the United States and limited to teachers who were willing to participate in a rather elaborate classroom study. It is reasonable to assume that the classroom analyzed do not include extremely disruptive classrooms (positive selection bias).

The coding procedure might be influenced by teacher reaction. While we tried to identify all incidents of disruptive behaviors independent of teacher response, it is most likely that we coded all incidents where they responded but less likely to identify all incidents that remained unaddressed by the teacher. For example, 92% of the codes falling under the category “OT” (Off

Task/Out of Position) resulted in some kind of teacher reaction. It is possible that the condition of being off task or out of position was more readily apparent after the teacher reacted to it. On the other hand, codes like "Gesturing" are naturally unlikely to garner teacher attention (97.1% of the time there was no reaction to this category of incident) and might have also slipped the coder's attention more frequently.

As mentioned earlier, coding reliability remains an issue that further studies need to address. While the inter-rater reliability was satisfactory for all the incidents identified by both coders, they did not agree sufficiently in identifying all of them. One way of solving this problem would be to have two rounds of coding, the first round where each coder works independently and a second round where coders exchange their incident lists (without the category coding) and code this list again with the option to question whether each of the potential incidents warrants being labeled as such. This approach would enable the researchers to produce a more comprehensive incident list that was developed by achieving a consensus among coders.

Future research might try to devise technology that could more easily pinpoint different aspects of classroom interaction that are most disruptive to the flow of a classroom lesson. In addition, larger samples could be used to enable broader generalization of these tendencies.

Overall, we were able to revisit one relevant aspects of the classroom gender bias hypothesis and look at them through a more precise empirical lens. In light of our analysis the major question is less whether gender bias in the classroom is real or a myth, but rather which aspects of the teacher-student interaction is affected by it and to what extent. Our findings indicate that – over two decades later – the picture might be less clear-cut than popularized versions of the original study on gender bias in the classroom suggest.

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Table 1

Incident Code and Gender Crosstabulation

			Gender		
			Girl	Boy	Total
Incident Code	CO	Count	21	30	51
		% within incode	41.2%	58.8%	100.0%
		Std. Residual	-.5	.5	
	T	Count	122	131	253
		% within incode	48.2%	51.8%	100.0%
		Std. Residual	.6	-.5	
	N	Count	6	10	16
		% within incode	37.5%	62.5%	100.0%
		Std. Residual	-.5	.5	
	G	Count	10	25	35
		% within incode	28.6%	71.4%	100.0%
		Std. Residual	-1.5	1.4	
	HR	Count	40	27	67
		% within incode	59.7%	40.3%	100.0%
		Std. Residual	1.7	-1.5	
	F	Count	44	45	89
		% within incode	49.4%	50.6%	100.0%
		Std. Residual	.5	-.5	
	OT	Count	16	37	53
		% within incode	30.2%	69.8%	100.0%
		Std. Residual	-1.7	1.5	
	O	Count	4	6	10
		% within incode	40.0%	60.0%	100.0%
		Std. Residual	-.3	.2	
Total		Count	263	311	574
		% within incode	45.8%	54.2%	100.0%

Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.694[a]	7	.019
Likelihood Ratio	17.056	7	.017
Linear-by-Linear Association	.377	1	.539

N of Valid Cases	574

Table 2

Teacher Response and Gender Crosstabulation

			Gender		
			Girl	Boy	Total
Teacher Response	NR	Count	212	232	444
		% within tearesp	47.7%	52.3%	100.0%
		% within gender	80.6%	74.6%	77.4%
		Std. Residual	.6	-.6	
	R	Count	47	71	118
		% within tearesp	39.8%	60.2%	100.0%
		% within gender	17.9%	22.8%	20.6%
		Std. Residual	-1.0	.9	
	P	Count	4	8	12
		% within tearesp	33.3%	66.7%	100.0%
		% within gender	1.5%	2.6%	2.1%
		Std. Residual	-.6	.6	
Total		Count	263	311	574
		% within tearesp	45.8%	54.2%	100.0%
		% within gender	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.123[a]	2	.210
Likelihood Ratio	3.157	2	.206
Linear-by-Linear Association	3.111	1	.078
N of Valid Cases	574		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.50.

Table 3a

Incident Code and Teacher Response Crosstabulation

			Teacher Response			
			NR	R	P	Total
Incident Code	CO	Count	29	14	10	53
		% within incode	54.7%	26.4%	18.9%	100.0%
		% within tearesp	6.5%	11.6%	83.3%	9.2%
		Std. Residual	-1.8	.9	8.5	
	T	Count	215	38	1	254
		% within incode	84.6%	15.0%	.4%	100.0%
		% within tearesp	48.3%	31.4%	8.3%	43.9%
		Std. Residual	1.4	-2.1	-1.9	
	N	Count	15	1	0	16
		% within incode	93.8%	6.3%	.0%	100.0%
		% within tearesp	3.4%	.8%	.0%	2.8%
		Std. Residual	.8	-1.3	-.6	
	G	Count	34	1	0	35
		% within incode	97.1%	2.9%	.0%	100.0%
		% within tearesp	7.6%	.8%	.0%	6.1%
		Std. Residual	1.4	-2.3	-.9	
	HR	Count	66	0	1	67
		% within incode	98.5%	.0%	1.5%	100.0%
		% within tearesp	14.8%	.0%	8.3%	11.6%
		Std. Residual	2.0	-3.7	-.3	
	F	Count	80	9	0	89
		% within incode	89.9%	10.1%	.0%	100.0%
		% within tearesp	18.0%	7.4%	.0%	15.4%
		Std. Residual	1.4	-2.2	-1.4	
	OT	Count	4	50	0	54
		% within incode	7.4%	92.6%	.0%	100.0%
		% within tearesp	.9%	41.3%	.0%	9.3%
		Std. Residual	-5.8	11.5	-1.1	
	O	Count	2	8	0	10
		% within incode	20.0%	80.0%	.0%	100.0%
		% within tearesp	.4%	6.6%	.0%	1.7%
		Std. Residual	-2.1	4.1	-.5	

Total	Count	445	121	12	578
	% within incode	77.0%	20.9%	2.1%	100.0%
			100.0%	% within tearesp	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	312.026[a]	14	.000
Likelihood Ratio	247.639	14	.000
Linear-by-Linear Association	10.722	1	.001
N of Valid Cases	578		

a. 9 cells (37.5%) have expected count less than 5. The minimum expected count is .21.

Table 3b

Incident Code and Teacher Response Crosstabulation

			Teacher Response		
			NR	R	Total
Incident Code	CO	Count	29	24	53
		% within incode	54.7%	45.3%	100.0%
		% within tearesp	6.5%	18.0%	9.2%
		Std. Residual	-1.8	3.4	
	T	Count	215	39	254
		% within incode	84.6%	15.4%	100.0%
		% within tearesp	48.3%	29.3%	43.9%
		Std. Residual	1.4	-2.5	
	N	Count	15	1	16
		% within incode	93.8%	6.3%	100.0%
		% within tearesp	3.4%	.8%	2.8%
		Std. Residual	.8	-1.4	
	G	Count	34	1	35
		% within incode	97.1%	2.9%	100.0%
		% within tearesp	7.6%	.8%	6.1%
		Std. Residual	1.4	-2.5	
	HR	Count	66	1	67
		% within incode	98.5%	1.5%	100.0%
		% within tearesp	14.8%	.8%	11.6%
		Std. Residual	2.0	-3.7	
	F	Count	80	9	89
		% within incode	89.9%	10.1%	100.0%
		% within tearesp	18.0%	6.8%	15.4%
		Std. Residual	1.4	-2.5	
	OT	Count	4	50	54
		% within incode	7.4%	92.6%	100.0%
		% within tearesp	.9%	37.6%	9.3%
		Std. Residual	-5.8	10.7	
	O	Count	2	8	10
		% within incode	20.0%	80.0%	100.0%
		% within tearesp	.4%	6.0%	1.7%
		Std. Residual	-2.1	3.8	

Total	Count	445	133	578
	% within incode	77.0%	23.0%	100.0%
	% within tearesp	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	225.590[a]	7	.000
Likelihood Ratio	208.927	7	.000
Linear-by-Linear Association	24.704	1	.000
N of Valid Cases	578		

a. 2 cells (12.5%) have expected count less than 5. The minimum expected count is 2.30.