

**The Unexpected Harm of Same-sex Marriage: A Critical Appraisal, Replication and Re-analysis Of Wainright and Patterson’s Studies of Adolescents with Same-sex Parents**

**ABSTRACT**

**Aims:** To critique, replicate and re-analyze Wainright and Patterson’s three studies of adolescents with same-sex parents, which conclude, based on representative population data, that such children suffer no disadvantages.

**Methodology:** After replicating Wainright and Patterson’s sample and analyses using the National Longitudinal Survey of Adolescent Health, Wave I, (n = 20, 745), re-examination of the same-sex parent sample finds that 27 of the 44 cases are misidentified heterosexual parents; they did not adjust for survey design and clustering; and ignored 99 percent of the baseline by using a small matched sample for comparison. Outcomes are re-analyzed after correcting these problems, using OLS, logistic regression and Firth (bias-adjusted) regression models.

**Results:** The adolescents with same-sex parents experience significantly lower autonomy and higher anxiety, but also better school performance, than do adolescents with opposite-sex parents. Comparing unmarried to (self-described) married same-sex parents, above-average child depressive symptoms rises from 50% to 88%; daily fearfulness or crying rises from 5% to 32%; grade point average declines from 3.6 to 3.4; and child sex abuse by parent rises from zero to 38%. The longer a child has been with same-sex parents, the greater the harm.

**Conclusion:** Children with same-sex parents experience significant disadvantages, but also some advantages, compared to those with man-woman parents. On a wide range of child well-being measures, opposite-sex marriage is associated with improved outcomes, but same-sex marriage is associated with lower outcomes. Further work is needed to determine the relative influences of instability, duration, and marriage to these findings.

*Keywords: National Longitudinal Survey of Adolescent Health, same-sex parents, child well-being, same-sex marriage*

**INTRODUCTION**

Since the 1970s a rapidly-growing body of empirical studies has compared homosexual and heterosexual relationships and parenting outcomes, concluding almost without exception that relationship quality and human flourishing in homosexual relationships is equivalent to that in heterosexual ones and that children raised by homosexuals do not suffer adverse harm (the no differences thesis). Almost all such results have been based on small, non-random samples, usually consisting of participants recruited for convenience who are aware of the purpose of the study, and for this reason have failed to be convincing.

This problem has been noted repeatedly by scholars adopting different widely different opinions on the underlying question of same-sex parenting. For example, Wendy Manning and colleagues, reviewing the literature for a court brief supporting same-sex marriage, counted studies of only four large random samples, noting: “Convenience samples are more common .... Relying on convenience samples means that the same-sex parents in these studies are not representative of all same-sex parents and represent only those who were targeted and agreed to participate, ....” (1). Likewise Michael Rosenfeld, in a study finding no differences in school outcomes with same-sex parents, observed: “As the critics have noted, convenience samples dominated this literature in the past” (2). Douglas Allen, in a rebuttal of Rosenfeld’s

32 showing lower graduation rates for children with same-sex parents, agreed: “Although a proper probability  
33 sample is a necessary condition for making any claim about an unknown population, within the same-sex parenting  
34 literature researchers have studied only those community members who are convenient to study” (3).  
35

36 As all three authors just cited acknowledge, a notable exception to the use of convenience samples has  
37 been three related studies that made use of data from the National Longitudinal Survey of Adolescent  
38 Health (“Add Health”). The first study, published in 2004 by Wainright, Russell and Patterson (hereafter  
39 “WRP 2004”), explored the connections between psychosocial well-being, school performance, and  
40 romantic relationships in the two family types (4). Wainright and Patterson (hereafter “WP”) followed up  
41 with a brief report in 2006 looking at delinquency, victimization and substance abuse (5), and a 2008  
42 study of peer relations (6). A 2009 review by Patterson summarizes all three studies (7).  
43

44 By most accounts, including Rosenfeld’s (2), these studies are the only ones prior to Rosenfeld’s 2010  
45 study to employ a representative population sample with sufficient statistical power to discern differences,  
46 if they existed, for children with same-sex parents (but see 8). All three studies examined the same  
47 sample, a group of 44 adolescents with lesbian mothers on the initial wave of the National Longitudinal  
48 Survey of Adolescent Health, which surveyed over 20,000 adolescents in 1995. The design features of  
49 the analysis are similar in all three studies, comparing the adolescents with lesbian mothers with a  
50 matched group of adolescents with heterosexual parents; the main analytic differences (as distinct from  
51 the theoretical questions involved) have to do with the examination of different outcome variables in each  
52 study. The studies refer to the two groups of same-sex parents and opposite-sex parents as “family  
53 types”, a wording I will also adopt for simplicity in the present study.  
54

55 All three WP studies concluded that, on the variables examined in the study, “adolescents living with  
56 same-sex parents did not differ from that of adolescents living with opposite-sex parents” (4) in any way  
57 that would disadvantage the former. With respect to this conclusion the authors are aware that their  
58 results “add significantly to those from earlier studies, which were most often smaller in their size, less  
59 representative in their sampling, and less comprehensive in their assessment of adolescent  
60 outcomes.”(4) Indeed, these three studies present some of the strongest evidence in support of the no  
61 differences thesis, and for that reason are often cited prominently in subsequent research and in  
62 legislative and judicial policy settings.  
63

64 Subsequent studies of other representative data, however, have failed to confirm most of WP’s  
65 conclusions. In a representative sample of 2,988 adults in 2012, Regnerus found significantly less  
66 positive outcomes on a wide range of psychosocial, relational and functional measures for a group of 248  
67 adults whose parent or parents had ever been in a homosexual relationship (9). Sullins, examining over  
68 200,000 cases from the National Health Interview Survey that included 512 children with same-sex  
69 parents, found that emotional problems, including anxiety, and other indicators of psychosocial distress,  
70 were more than twice as prevalent among children with same-sex parents. The only conclusion of WP  
71 that may possibly have been replicated is Rosenfeld’s 2010 claim, based on a large sample from the U.S.  
72 Census, that children with same-sex parents progressed normally through school (2). However, Allen  
73 failed to replicate Rosenfeld’s finding using the Canadian census (3) and has disputed Rosenfeld’s  
74 analysis (10).  
75

76 To address this difficulty, the current study attempts to critically evaluate and replicate WP’s 2004  
77 conclusions, and if feasible to re-analyze their original data, in order to confirm or counter their findings  
78 with a greater degree of confidence than has previously been the case.  
79

## 80 **DATA AND METHODS**

81 This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and  
82 designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North  
83 Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National  
84 Institute of Child Health and Human Development, with cooperative funding from 23 other federal  
85 agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for  
86 assistance in the original design. Information on how to obtain the Add Health data files is available on  
87 the Add Health website (<http://www.cpc.unc.edu/addhealth>). No direct support was received from grant

88 P01-HD31921 for this analysis. The author's management and use of the data has been reviewed and  
89 approved by the Institutional Review Board of the Catholic University of America.

90 Add Health, also known as the National Longitudinal Survey of Adolescent Health, has followed a large  
91 random sample of American adolescents for twenty years. Wave I was administered in 1995 through in-  
92 school interviews with over 90,000 American adolescents aged 13-19 selected by means of a stratified  
93 random sample of U.S. high schools. Of these, 27,000 were selected for a more extensive interview in  
94 their home and a separate related interview with their mother. If the mother was not available after  
95 separate attempts, the father or another adult in the household was interviewed. The in-home interview  
96 sample consisted of a core sample selected randomly using a complex multi-stage sampling process that  
97 was stratified by region, other strata, and geographic areas known as probability sampling units. A total  
98 of 12,105 core sample interviews were augmented by an additional 8,640 cases that reflect a series of  
99 oversamples and special interest data groups, to comprise the full sample of 20,745 cases. Through the  
100 application of post-stratification weights that reflect known characteristics of the adolescent population at  
101 that time, the sample is rendered representative of the adolescent population with a high degree of  
102 precision.

103 The current study replicates the sample and mean comparisons of WRP 2004 using t-tests in place of the  
104 original ANOVA, and employs logistic regression models to assess differences between family types. All  
105 analyses were performed with Stata 13 statistical software, incorporating the design features of the  
106 survey following guidelines for analyzing Add Health data published by the Carolina Population Center,  
107 University of North Carolina (11).

## 108 Variables in the Analysis

109 The outcome variables examined by WRP were replicated, as far as possible, from the description  
110 provided in their study. Depressive symptoms were measured by a 19-item version of the Center for  
111 Epidemiologic Studies' Depression Scale (CES-D) which was administered in the in-home interview (12) .  
112 The items in the scale name a list of symptoms such as feeling sad, lonely, tired or bothered about things.  
113 The response range for each item is from 0 (never or rarely) to 3 (most of the time or all of the time); the  
114 range of the 19-item scale is from 0 to 57.

115 WRP reported that they measured adolescent anxiety "with a seven-item scale from the In-Home  
116 Interview that included questions about the frequency of symptoms such as feeling moody or having  
117 trouble relaxing." These two items are part of a six-item series (not seven) on anxiety, which asks about  
118 both physical conditions such as sleeplessness or poor appetite as well as more direct indicators of  
119 emotional distress such as moodiness, fearfulness or frequent crying. The in-home interview asks how  
120 often the respondent has experienced each condition in the past twelve months, with possible responses  
121 of "never, "just a few times", "about once a week", "almost every day", and "every day", coded from 0 to 4.  
122 The present study uses these six items to form a scale as close as possible to that used by WRP, and in  
123 any event to effectively measure anxiety. The item "Daily fearfulness/crying" in Table 4 is derived from  
124 this scale, reporting the proportion who responded "every day" or "almost every day" for the items  
125 "fearfulness" or "frequent crying". Although WRP reported that their anxiety scale ranged from 0 to 28,  
126 and reported a corresponding number in the tables, in the text they reported a mean anxiety score based  
127 on a scale from 0 to 4. To ensure comparability the anxiety scores reported in Table 2 are also  
128 standardized on a 0-4 scale.

129 WRP reported that they summed 6 items with a response scale of 1 to 5 to produce a self-esteem scale  
130 ranging from 6 to 30, but report a mean value of 4.02 for the same-sex sample, and for each item report  
131 the reverse of the scale shown on the Add Health file. I took the mean of the reverse-coded items as the  
132 best guess at what they actually did. The results of this scale are consistent with the numbers they report  
133 (4). Grade point average was reported on a scale from 0 to 4.0. For school connectedness and  
134 neighborhood integration WRP report the reverse of the true scoring scale; it appears that they recoded  
135 the items, so I did as well.

136 The Add Health in-home interview asked female adolescents, "Were you ever physically forced to have  
137 sexual intercourse against your will?" Males were asked, "Did you ever force someone to have sexual  
138 intercourse against her will?" About one in ten respondents (11.6%, 95% CI 10.5-12.7) overall reported  
139 forcing or being forced to have sex. In Table 4, where this variable is introduced, the opposite-sex  
140 categories and same-sex unmarried contain both male and female respondents, but only female  
141 respondents reported forced sexual intercourse in the same-sex marriages, almost all of which involve  
142 lesbian partners.

## 143 **ANALYSIS**

144 The analysis proceeded in three steps. The first step was a critical appraisal of the elements of the WRP  
145 study with regard to the possibility of identifying differences for adolescents with same-sex parents. Two  
146 features of the sample of same-sex parents defined by WRP obscured its effectiveness for identifying  
147 differences for children with same-sex parents: the sample mistakenly included a majority of cases that  
148 are actually heterosexual parent couples, and the sample excluded male same-sex couples. After  
149 correcting these issues, the second step involved replicating the analyses of WRP 2004, as far as  
150 possible, to examine the affect, if any, of amending the sample defects on the study outcomes. Third, the  
151 corrected sample was employed to examine new questions about child outcomes with same-sex parents,  
152 to the extent possible.

### 153 **Step One: Critical Appraisal**

#### 154 **Miscoded Heterosexual Parents**

155 WRP identified same-sex parents by comparing the sex of the responding mother with the reported sex of  
156 a partner with whom she reported that she was married or living in a marriage-like relationship. They  
157 explain the procedure they used:

158 We first identified families in which parents reported being in a marriage or marriage-like  
159 relationship with a person of the same sex. ... [Then] the consistency of parental reports  
160 about gender and family relationships was examined. To guard against the possibility that  
161 some families may have been misclassified because of coding errors, we retained only  
162 cases in which parental reports of gender and family relationship were consistent (e.g., a  
163 parent reported being female and described her relationship to the target adolescent as  
164 "biological mother "). ... The focal group of families identified through this process  
165 consisted of 44 adolescents, 23 girls and 21 boys. Approximately 68% of the adolescents  
166 identified themselves as European American or White, and 31.8% identified themselves  
167 as non-White or as biracial. On average, the adolescents were 15.1 years of age (SD 5  
168 1.5 years), with a range from 12 to 18 years of age (4).

169 In a related table, they also report that 4.5% of these adolescents were adopted.

170 Following these procedures, I also found 44 adolescent cases on the Add Health sample whose female  
171 parent respondent reported being in a marriage or marriage-like relationship with a another woman. I  
172 found no inconsistent parental reports of gender and family relationships. This group of 44 cases  
173 consisted of 23 girl and 21 boys (52.3% female), was 68% white with an average age of 15.1 years, and  
174 4.5% were adopted. Since these characteristics exactly match those reported by WRP above, I  
175 concluded that this group is the same lesbian parent sample identified in their study.

176 In the in-home interviews, responding adolescents were asked to identify the sex and relationship to  
177 themselves of all members of the household. WRP 2004 reported that they explored another consistency  
178 check for the same-sex partners, which "required that if an adolescent reported living with his or her  
179 biological mother, he or she reported no male figure (e.g., biological father, stepfather) as residing in the  
180 household." Applying this criterion, they identified 18 cases which clearly consisted of adolescents living  
181 only with two adult parents of the same sex. Remarkably, they rejected this criterion, even though it

182 incorporates effectively the same safeguard against misclassification as the similar check they report  
183 using on the parental interview. Their justification for this is that they believed that “application of the  
184 more stringent criteria effectively eliminated from the sample many adolescents from divorced families in  
185 which one or both parents were currently involved in same-sex relationships” (4) as well as children in  
186 joint custody arrangements.

187 It is hard to know what they mean by this. The Add Health interview only asked responding adolescents  
188 about persons “who live in your household” (13). If the adolescent reported the presence of a father or  
189 father figure in this series of questions, this could not have been a father in another household, as would  
190 be the case in a joint custody situation. In fact, of the 44 sample adolescents, half (22) of them reported  
191 that their biological father lived in the home. An additional four identified one of the household members  
192 as their step or adoptive father, and one reported the presence of a foster father. In a separate question  
193 that asked the adolescent to confirm the sex of each person, all 27 of these fathers were explicitly  
194 identified as male.

195 In a series of questions about non-resident biological fathers, only the 18 clear cases of adolescents living  
196 with two female same-sex parents indicated any knowledge of a non-resident father. Three of the four  
197 adolescents who identified an adoptive or foster father were assumed to have a non-resident biological  
198 father, but they reported they did not know anything about him. It is quite clear, in other words, that only  
199 among the 18 clear cases could there possibly be anything like a joint custody arrangement. Five parents  
200 among the 18 clear cases, but only one among the additional 26 cases including by rejecting the criterion  
201 of having two same-sex parents, indicated that he or she was divorced. Thus it is not the case that the  
202 more stringent criteria “eliminated from the sample many adolescents from divorced families” (4).

203 Clearly, the 27 families for which the child reports the presence of a resident male father cannot  
204 reasonably be considered lesbian parent families. Probably they are miscoded opposite-sex families. At  
205 the very least, it is fair to say that the sex designation is inconsistent, and, on the same principle that  
206 WRP already screened out cases with inconsistent parental reports of sex, these cases should also be  
207 discarded. Excluding these cases leaves 17 cases that are clearly and consistently identified as lesbian  
208 parent couples. WRP report finding 18 cases in this group; it is possible that they include the one  
209 household where the adolescent identified a “foster father”. WRP note that the group identified by this  
210 more stringent criteria has “the advantage of including only clear cases in which adolescents described  
211 themselves as living only with two same-sex adults, and in which parents described themselves as  
212 unmarried and as involved in a marriage or marriage-like relationship with a person of the same sex. In  
213 short, these families conformed in every particular to an idealized image of lesbian mother families” (4).

#### 214 **Other Design Difficulties**

215 Three other elements of WRP’s study design obscure possible differences for adolescents with same-sex  
216 parents. First, WRP compare boys and girls separately within each family type, despite having already  
217 matching the two comparison groups on sex. This analytical choice responds to other interests in their  
218 study, but it also reduces each of the already-small family type groups by about half.

219 Second, and more seriously, instead of comparing the children with same-sex parents with the full  
220 remaining sample of approximately 20,000 children, WRP compared them to another group of 44 children  
221 matched to the children with same-sex parents on a number of demographic characteristics. A matched  
222 comparison like this is an acceptable way to control for differences in age, sex, parent education and  
223 income, etc., but in this case, since the groups are so small to begin with, doing so renders it needlessly  
224 more difficult to show differences between the groups. Compared with matched samples, correcting for  
225 demographic differences by the use of control variables is much more common in social science analysis,  
226 since it preserves the ability to standardize the groups on relevant demographic characteristics while  
227 retaining the statistical power of the entire dataset. Instead of comparing a small group with large  
228 standard errors to a large group that has small standard errors, WRP compare two small groups, both of  
229 which have large standard errors. Essentially, WRP throw away 99% of the baseline.

230

**Table 1. Replication of WRP's Analysis with Alternative Samples of Same-sex Parents: Add Health Wave 1**

	A		B		C		D		E		F	
	44 opposite- sex cases (reported)	44 same-sex cases (reported)		44 same-sex cases (observed, unweighted)		27 "real world" cases (unweighted)		17 "ideal" cases (unweighted)		6 same-sex male parent couples (unweighted)		
	Mean (SD)	Mean (SD)	p > t (A=B)	Mean (SD)	p > t (A=C)	Mean (SD)	p > t (A=D)	Mean (SD)	p > t (A=E)	Mean (SD)	p > t (A=F)	
Depressive symptoms (CES-D)	9.67 (6.24)	10.93 (8.46)	.50	11.53 (8.10)	.25	10.70 (8.81)	.60	12.94 (6.79)	.11	13.33 (6.15)	.22	
Self-esteem	4.04 (.62)	3.99 (.50)	.73	4.19 (.64)	.29	4.30 (.55)	.08	4.0 (.73)	.85	3.97 (.31)	.68	
Anxiety (6 items only)	.76 (.44)	.99 (.53)	.07	.85 (.62)	.45	.76 (.60)	.99	1.0 (.64)	.17	.56 (.51)	.40	
GPA (grade point average)	2.80 (.78)	2.83 (.90)	.88	3.00 (.82)	.32	2.86 (.87)	.80	3.3 (.67)	.06	2.65 (.98)	.73	
Trouble in school	.95 (.73)	1.03 (.70)**	.64	1.10 (.80)*	.39	1.18 (.73)	.22	.97 (.92)	.94	.79 (.84)	.68	
School connectedness	3.43 (.83)	3.92 (.81)	.015	3.73 (.71)	.096	3.75 (.76)	.12	3.70 (.62)	.20	3.72 (.20)	.08	
Parental warmth	4.39 (.34)	4.27 (.54)	.22	4.23 (.59)	.13	4.30 (.49)	.41	4.11 (.73)	.15	4.4 (.35)	.99	
Care from adults and peers	4.09 (.62)	4.04 (.69)	.72	4.05 (.69)	.27	4.12 (.62)	.84	3.94 (.80)	.50	4.17 (.62)	.77	
Autonomy	5.44 (1.30)	5.19 (1.59)	.43	5.11 (1.47)	.84	5.30 (1.03)	.62	4.82 (1.96)	.24	5.67 (1.21)	.68	
Neighborhood Integration	2.37 (.93)	2.21 (.91)	.42	2.21 (.91)	.42	2.26 (.86)	.62	2.13 (1.02)	.42	1.83 (.75)	.15	

Columns A & B report interpolated results from WRP 2004 Table 2 (p. 1892), which are slightly different than those reported in the text. Except for column A and B all statistics, including t-test comparisons, are based on the Add Health Wave 1 full sample (n=20,745): \* t, P < 0.10; \*\* t, P < 0.05; \*\*\* t, P < 0.01; \*\*\*\* t, P < 0.001. 4.54 Anxiety scale is transformed to a 0-4 range.

232 Third, WRP's 2004 study appears to have made no use of Add Health's complex survey design or post-  
233 stratification weights. They do not report having done so, and elements of their analysis make clear that  
234 they did not do so. They reported, for example, that they created the list of matched adolescents with  
235 opposite-sex parents "by generating a list of adolescents from the Add Health database who matched  
236 each target adolescent on the following characteristics: sex, age, ethnic background, adoption status  
237 (identified through parent reports), learning disability status, family income, and parent's educational  
238 attainment. The first matching adolescent on each list was chosen as the comparison adolescent for that  
239 target adolescent." Since each unweighted case represents a large and variable number of weighted  
240 cases, this kind of one-to-one matching could only have been accomplished using unweighted cases. It  
241 is difficult to determine what effect this omission may have, if any, on the ability to identify differences for  
242 the adolescents with same-sex parents, but it is a consequential error that undermines confidence in the  
243 representativeness of the study.

244 The lack of weighting might not be a problem, or much of a problem, if WRP's analysis had been based  
245 on the Add Health Core Sample, as they claim, but this is not possible: of the 44 cases in the WRP 2004  
246 sample of same-sex parents, only 29 are in the Core Sample. The Core Sample, which is based on a  
247 stratified random sample of U.S. high schools, could arguably be taken as roughly representative of the  
248 adolescent population without weighting, but the additional cases are not representative of this  
249 population. The additional cases, and thus the full sample, are made representative of the population  
250 only by the application of post-stratification weights.

251 Add Health's Guidelines for Analyzing Add Health Data advise: "To obtain unbiased estimates, it is  
252 important to account for the sampling design by using analytical methods designed to handle clustered  
253 data collected from respondents with unequal probability of selection" (11). In a section on common errors  
254 when using Add Health, the first error listed is "Ignoring clustering and unequal probability of selection  
255 when analyzing the Add Health data" (boldfaced in original) (11). Since they ignore clustering, WRP's  
256 findings cannot statistically represent the population of same-sex parents, even if the sample were  
257 accurate. They may, of course, be suggestive in a general way. At best, these three studies present  
258 findings from another unrepresentative small group of same-sex parents, such as are almost universal in  
259 this area of research.

## 260 **Step Two: Replication**

### 261 **Replication with the Original Sample (and Alternative Partitions)**

262 WRP also found 6 male same-sex partners in the Add Health sample, but report that they excluded them  
263 from their sample in order to focus more clearly on lesbian parents, after preliminary analyses that  
264 included the 6 male same-sex partners produced results that "were very nearly identical to those  
265 including only [the 44] families headed by female same-sex couples." Likewise, they reported that they  
266 "completed all the analyses" with the smaller group of 18 clear cases of same-sex parents and the  
267 "results were essentially identical" to those of the larger group of 44 cases.

268 These claims may be a bit overstated, but they are essentially accurate. Table 1 replicates WRP's  
269 analysis, as closely as possible, showing results for their full sample (44 cases) and the alternative  
270 sample groups or partitions discussed: verifiable lesbian couple parents (17 cases), the "real world" cases  
271 of heterosexual parents, one or both of whom may be in a same-sex relationship with someone else (27  
272 cases), and male same-sex parents (6 cases). The table replicates WRP's method of analysis,  
273 comparing group mean values for each of the outcome variables of interest. Only individual outcomes  
274 are assessed, ignoring WRP's multivariate analyses. Rather than the ANOVA tests reported by WRP, the  
275 table reports the more commonly-used t-tests; t-tests and ANOVA produce statistically identical decision  
276 results for mean comparisons. Consistent with recommended standards and other research on the small  
277 population of same-sex parents, the table also identifies group differences at the more relaxed .10 level of  
278 significance, as well as the conventional .05 level.

279 Columns A and B of Table 1 are derived from WRP 2004, Table 2, with results interpolated by sex,  
280 comparing the matched sample of 44 opposite-sex parents with their full sample of 44 (alleged) same-sex  
281 parents. WRP did not show the p-values, but reported that the children with same-sex parents had higher  
282 school connectedness, significant at .05, and marginally higher anxiety, which was not quite significant.  
283 The t-test results shown in column B present essentially the same results. School connectedness, with a  
284 p-value of .015, is the only comparison that is significant at .05, but anxiety has a p-value of .07, that is,  
285 approaching but not quite attaining significance at the conventional .05 level.

286 Column C reports the observed mean value in the Add Health full sample for WRP's sample of same-sex  
287 parents. The values in this column are not exactly the same as those in column B. The column B values  
288 were interpolated, which may have introduced unknown error, but the most likely source of the  
289 differences between the columns is differences in missing data. The present study computed mean  
290 values from all non-missing cases for each outcome variable (for most outcomes either 43 or 44 cases),  
291 but WRP analyzed the variables in three structural groups; if data were missing for any outcome variable  
292 in the group, it was counted as missing for all variables in the group. For most of the outcome variables  
293 shown, this analytical decision substantially reduced the number of cases on which their mean value  
294 computations were actually made. For depressive symptoms, for example, WRP's mean value of 10.93,  
295 shown in column B, was based on 27 cases, while the corresponding value shown in column C,  
296 computed for the present study, is based on 43 cases. The values in column C, therefore, are generally  
297 more accurate than those in column B, although the differences are generally slight. For only three  
298 variables are the p-values testing mean difference higher in column C than in column B. In the bottom  
299 four rows of Table 1, WRP's reported values are based on the highest number of cases in their same-sex  
300 parents sample (43 of 44), so the column B values are most similar to column C for those outcomes; for  
301 neighborhood integration the values are identical.

302 In column C no adolescent differences are significant at .05, although school connectedness is still  
303 significant at the .10 level. Likewise, no difference is significant at .05 on any outcome for any of the  
304 remaining columns of the table (columns D, E, and F). For column F, showing results for the 6 gay male  
305 parent couples, school connectedness is also significant at .08, suggesting that the results for this group  
306 could be described as "very nearly identical" to those of column B, but this does not seem to be the case  
307 for column E, which shows the 17 actual same-sex parent cases.

308 For this group, school connectedness is not significantly different from the matched sample shown in  
309 column A, as is the case for WRP's findings for the full group of 44 alleged same-sex parent cases shown  
310 in column B. Moreover, child GPA (grade point average) is significant at .06, very close to the .05 level,  
311 which is decidedly not the case for column B. Perhaps WRP's matched comparison group for this sample  
312 of 17 ideal same-sex parent cases was different than that for the full sample of 44 cases.

313 Columns D and E disaggregate the 44 cases shown in columns B and C into the 27 cases of misidentified  
314 opposite-sex parents and the 17 clear cases of lesbian parents respectively. Notably, as judged by p-  
315 value, column E has more items that are closer to significant difference from column B than does column  
316 D (5 compared to 3), despite the fact that it has fewer cases. GPA, depressive symptoms and anxiety are  
317 much closer to significance in column E than in column D. For the 17 ideal cases in column E, all three  
318 variables measuring adolescent psychological well-being (depressive symptoms, self-esteem and  
319 anxiety) and family and relationship processes (parental warmth, care from adults and peers, autonomy  
320 and integration) show less favorable results, but all three school outcome variables (GPA, trouble in  
321 school and school connectedness) show more favorable results.

### 322 **Replication with the Corrected Sample**

323 Table 2 presents new means tests results for the outcome variables in WRP 2004 after correcting the  
324 same-sex parent sample to remove the 27 opposite-sex parent partners and applying the appropriate  
325 sample weights. The corrected same-sex parents sample reported in column E also includes 3 of the 6  
326 cases of male same-sex parents, who were verified by the same stricter screening procedures used to  
327 verify the clear cases of female same-sex parents, for a total sample of 20 clear cases of parenting same-



328 sex partners. The analyses presented in Table 2 generally confirm the accuracy of WRP's analysis  
329 regarding significant differences by family type, given their use of a small extract of unweighted cases and  
330 a corrupted sample. At the same time, the new findings shown demonstrate the increased power of the  
331 corrected sample, and the use of sample weights and survey design features, to identify differences, both  
332 advantageous and disadvantageous, for children with same-sex parents.

333 As in Table 1, combined variables or multivariate tests are ignored. In the absence of WRP's matched  
334 sample of opposite-sex parents, Column A in the table reports the unweighted mean value for each  
335 outcome variable from the Add Health Core Sample. Columns B-E report outcome values under various  
336 conditions, with corresponding t-test results. For comparison purposes, column B repeats the replicated  
337 findings from WRP 2004 already shown in Table 1, column B. Columns C and D report respectively the  
338 replicated values and significance test results from the unweighted and weighted Add Health Full Sample.  
339 Column E shows the results for the corrected category of same-sex parents. Columns D and E, but no  
340 other, adjust variance estimates for survey design and weights, and thus present results that may be  
341 inferred to the population in question.

342 Table 2 confirms several points made in the critique above. For every variable in the table, the standard  
343 errors reported by WRP, shown in Column B, are larger, in most cases much larger, than those of any  
344 other sample condition shown. This confirms that, as discussed above, WRP analyzed the matched  
345 groups of 44 parents each independently, not as part of the Add Health dataset. Columns C and D show  
346 mean values for the WRP 2004 sample computed with unweighted and weighted cases respectively.  
347 Consistent with the warning provided in the Guidelines for Analyzing Add Health Data (11), the standard  
348 errors for the unweighted values (Column C) are smaller for every variable but one than the standard  
349 errors for the weighted values (Column D). The mean values reported by WRP 2004 for the "lesbian  
350 parents" sample (Column B), which is really composed primarily of heterosexual parents, are, with two  
351 exceptions, very similar to the mean value (unweighted) for the Add Health Core Sample.

352 As already noted, WRP reported only one significant difference by family type: children with same-sex  
353 parents had significantly higher school connectedness (than did the comparison group of children with  
354 opposite-sex parents). Table 2 confirms this finding when comparing the weighted cases of children with  
355 same-sex parents to the mean of the full sample. In the corrected sample (Column E), school  
356 connectedness for children with same-sex parents is even higher, with higher statistical significance.

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**Table 2. Adolescent Characteristics as a Function of Family Type: Add Health Wave 1**

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	A	B		C		D		E	
	Add Health core sample (12,105)	WRP 2004 (reported) (44)		WRP 2004 observed (unweighted)		WRP 2004 observed (weighted)		Corrected SS parents Sample (weighted)	
	Mean (SE)	Mean (SD)	p > t (ss=0s)	Mean (SE)	p > t (ss=0s)	Mean (SE)	p > t (ss=0s)	Mean (SE)	p > t (ss=0s)
Depressive symptoms (CES-D)	10.91 (.137)	10.93 (8.46)	.50	11.53 (1.24)	.91	10.43 (.940)	.54	11.06 (1.48)	.96
Self-esteem	4.12 (.01)	3.99 (.50)	.73	4.19 (.10)	.40	4.26 (.14)	.28	4.10 (.23)	.94
Anxiety (6 items only)	.76 (.01)	.99 (.53)	.07	.85 (.62)	.28	.92 (.11)	.16	1.12 <sup>***</sup> (.14)	.01
GPA	2.83 (.02)	2.83 (.90)	.88	3.00 (.15)	.14	3.16 <sup>*</sup> (.19)	.08	3.49 <sup>****</sup> (.21)	.002
Trouble in school	1.06 (.01)	1.03 (.70)	.64	1.10 (.12)	.63	1.02 (.14)	.78	.77 (.24)	.24
School connectedness	3.61 (.01)	3.92 <sup>**</sup> (.81)	.015	3.73 (.11)	.20	3.92 <sup>**</sup> (.13)	.02	4.04 <sup>***</sup> (.16)	.009
Parental warmth	4.30 (.01)	4.27 (.54)	.22	4.23 (.09)	.63	4.44 (.09)	.13	4.50 (.17)	.23
Care from adults and peers	4.06 (.01)	4.04 (.69)	.72	4.05 (.11)	.91	4.17 (.17)	.71	4.25 (.26)	.44
Autonomy	5.11 (.05)	5.19 (1.59)	.43	5.11 (.22)	.84	4.71 (.35)	.23	4.16 (.64)	.13
Neighborhood Integration	2.24 (.02)	2.21 (.91)	.42	2.21 (.14)	.98	2.12 (.20)	.54	1.89 (.43)	.41

Column B reports interpolated results from WRP 2004 Table 2 (p. 1892), which are slightly different than those reported in the text. To facilitate comparison standard deviations are converted to standard errors. Statistics for columns C, D, and E, including t-test comparisons, are based on the Add Health Wave 1 full sample (n=20,745): <sup>\*</sup> t, P < 0.10; <sup>\*\*</sup> t, P < 0.05; <sup>\*\*\*</sup> t, P < 0.01; <sup>\*\*\*\*</sup> t, P < 0.001.

384 WRP did not find a significant difference for grade point average by family type, but this is also found to  
 385 be significantly higher for the WRP 2004 sample when sample weights and clustering are incorporated  
 386 (Column D), and even higher, with a more significant difference, when the sample is corrected to include  
 387 only clear cases of same-sex parents (Column E). For anxiety WRP reported results that were a third  
 388 larger for boys, and a sixth larger for girls, with same-sex parents, with a large F-statistic (4.5) for the  
 389 difference by family type (4.5). However, they reported that multivariate anova revealed no significant  
 390 effects, so they concluded that there was no difference. Table 2 confirms this conclusion for the full WRP  
 391 2004 sample of 44 cases.

392 When the original sample is corrected to include only same-sex parents, the mean for adolescents with  
 393 those parents differs significantly from their counterparts with opposite-sex parents on three of the ten  
 394 outcomes examined: anxiety, grade point average (GPA), and school connectedness. In the next  
 395 section, the inclusion of control variables confirms and extends this finding.

396 **Replicating Control Variables**

397 An advantage of WRP's analysis that is not reflected in Table 2 is that their two sample groups were  
 398 matched on seven important demographic characteristics. Table 3 addresses this lack, presenting the  
 399 results of multiple regression models that include controls for the same characteristics (child sex, age,

400

**Table 3. Multiple regression coefficients predicting child characteristics by family type: Add Health Wave 1**

	SS Parents WRP 2004 observed (weighted)		Corrected SS Parents sample	
	Coeff	P>t	Coeff	P>t
Depressive symptoms (CES-D)	-.428	.31	.058	.96
Self-esteem	.059	.41	.043	.85
Anxiety (6 items only)	.259	.48	1.70 <sup>*</sup>	.08
GPA	.089	.37	.430 <sup>***</sup>	.004
Trouble in school	-.043	.51	-.232	.30
School connectedness	.117 <sup>*</sup>	.06	.407 <sup>***</sup>	.007
Parental warmth	.070	.16	.222	.16
Care from adults and peers	.007	.93	.134	.58
Autonomy	-.27	.13	-1.27 <sup>**</sup>	.03
Neighborhood Integration	-.081	.42	-.325	.43

Shown are OLS regression models controlling for child sex, age, race (white/nonwhite), and adoption status; parent age and education (college degree or not), and family income. <sup>\*</sup>t, P < 0.10; <sup>\*\*</sup>t, P < 0.05; <sup>\*\*\*</sup>t, P < 0.01; <sup>\*\*\*\*</sup>t, P < 0.001

**Table 4. Adolescent Characteristics as a Function of Family Type and Marriage, showing unadjusted mean values: Add Health Waves 1 and 3**

	Opposite-sex Parents				Same-sex Parents			
	Unmarried		Married Parents	Unmarried		Married		
	Mean (SE)	p>t (OS Marr)	Mean (SE)	Mean (SE)	p>t (OS Marr)	Mean (SE)	p>t (OS Marr)	
<b>Psychological well-being</b>								
Depressive symptoms (CES-D) - percent above average	56.0 <sup>****</sup> (1.1)	.00	47.2 (.89)	50.4 (24.6)	.90	87.7 <sup>****</sup> (11.1)	.00	
2CES-D Interpersonal – People unfriendly or disliked you - percent above average	50.0 <sup>****</sup> (1.0)	.00	44.8 (.71)	11.5 (8.4)	.19	22.7 <sup>****</sup> (9.0)	.00	
– CES-D Lack of Positive Affect	56.9 <sup>****</sup> (1.0)	.00	51.3 (.86)	34.0 (19.7)	.38	94.9 <sup>****</sup> (6.2)	.00	
Not hopeful, happy, joyful - percent above average	4.65 <sup>*</sup> (.09)	.09	4.51 (.05)	6.31 <sup>**</sup> (.77)	.02	7.10 <sup>*</sup> (1.45)	.08	
Anxiety	4.4% <sup>***</sup> (.46)	.004	3.1% (.25)	5.4% (5.7)	.69	32.4% (25.2)	.25	
Daily fearfulness/crying (%)	<b>School Outcomes</b>							
GPA	2.64 <sup>****</sup> (.02)	.00	2.91 (.02)	3.59 <sup>**</sup> (.31)	.04	3.37 <sup>****</sup> (.12)	.00	
School connectedness	3.51 <sup>****</sup> (.02)	.00	3.66 (.01)	4.10 (.28)	.13	3.98 <sup>****</sup> (.03)	.00	
<b>Family process</b>								
Parental warmth	4.21 <sup>****</sup> (.02)	.00	4.34 (.01)	4.59 (.24)	.29	4.41 (.22)	.75	
Care from adults and peers	3.99 <sup>****</sup> (.02)	.00	4.09 (.01)	4.64 <sup>***</sup> (.18)	.003	3.78 <sup>****</sup> (.08)	.00	
<b>Family stability</b>								
Child's time in current family (years)	10.35 <sup>****</sup> (.18)	.00	13.03 (.12)	4.01 <sup>****</sup> (2.3)	.00	10.36 (3.1)	.40	
Percent child transitions	45.0% <sup>****</sup> (1.3)	.00	18.5% (.75)	83.0 <sup>****</sup> (16.1)	.00	88.0 <sup>****</sup> (10.9)	.00	
<b>Sexual development/identity</b>								
Same-sex attraction	7.5% <sup>***</sup> (.53)	.001	5.5% (.39)	23.2% (17.5)	.31	19.0% (9.6)	.16	
Ever same-sex romantic partner	1.4% <sup>****</sup> (.20)	.000	.9% (.13)	0% <sup>****</sup> (0)	.00	0% <sup>****</sup> (0)	.00	
Ever sexual intercourse?	46.3% <sup>****</sup> (.02)	.00	32.7% (.02)	27.8% (.19)	.31	15.7% (.15)	.22	
Divorced/Cohabiting/ed at age 19-25	47.9% <sup>****</sup> (.02)	.00	36.2% (.01)	35.2% (.27)	.97	57.7% <sup>**</sup> (.11)	.047	
(If ever intercourse): Ever physically forced to have sex against your will? - % yes	12.2% <sup>****</sup> (.92)	.00	10.0% (.73)	23.5% (23.1)	.31	70.5% <sup>**</sup> (29.7)	.04	
Experienced sex abuse by parent	6.8% (.60)	.00	3.5% (.33)	0% <sup>****</sup> (0.0)	.00	37.8% <sup>**</sup> (14.3)	.02	

Unmarried includes single never married. Reference category for t tests is opposite-sex married parents. T-test results: equality of means \* t, P < 0.10; \*\* t, P < 0.05; \*\*\* t, P < 0.01; \*\*\*\* t, P < 0.001. CES-D scales presented are not predictive of

402 race, and adoption status, and parent age, education and income), thus more closely replicating WRP's  
 403 analysis. Coefficients for control variables were significant for all outcomes. When using the WRP 2004  
 404 sample of same-sex parents, the regression models with controls found, just as WRP did, that the only  
 405 variable that is significantly different by family type is school connectedness. In the corrected sample,  
 406 school connectedness, grade point average, and anxiety all remain significantly higher, as they were in  
 407 Table 2, in the presence of controls. In addition, after including controls child autonomy is significantly  
 408 lower for children with same-sex parents. These findings confirm and extend the findings of Table 2.

### 409 Step Three: Re-Analysis

410 This section of the analysis reports on a re-analysis of the new sample, using the original variables or  
 411 other variables, to see what other differences or characteristics of interest can be discovered for children  
 412 with same-sex parents.

413 Forty percent of the same-sex partners reported their marital status as married, rather than as unmarried  
 414 partners. This is consistent with other representative data such as the National Health Interview Survey  
 415 and the 2000 Census, where many same-sex couples also indicated that their partnership was a  
 416 marriage prior to same-sex marriage attaining legal status in any part of the United States in 2004. While  
 417 not legally recognized marriages, these cases clearly reflect a marital self-understanding, and the  
 418 partners they may well have been married in a religious or private ceremony during this era. Prior studies  
 419 have found that such couples may be plausibly interpreted as reflecting many of the attributes of marriage  
 420 (2,14–17), thereby offering, as Reczek and colleagues conclude, “our closest possible representation of  
 421 the current population of the same-sex married” (17). In the present study, moreover, the married same-  
 422 sex parents strongly reflect the most commonly-referenced potential advantage of marriage for same-sex  
 423 parents: greater family stability. As discussed below, the time children had resided with their current set  
 424 of parents averaged 4 years (SE 2.3) with unmarried same-sex partners, but with married same-sex  
 425 partners, 10.4 years (SE 3.1).

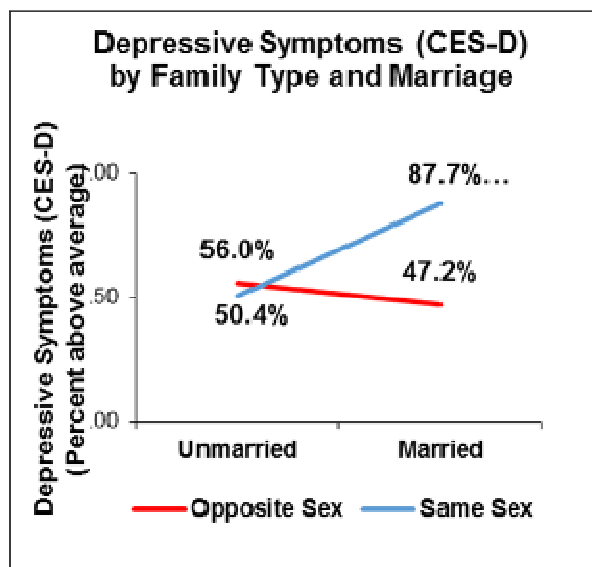


Figure 1

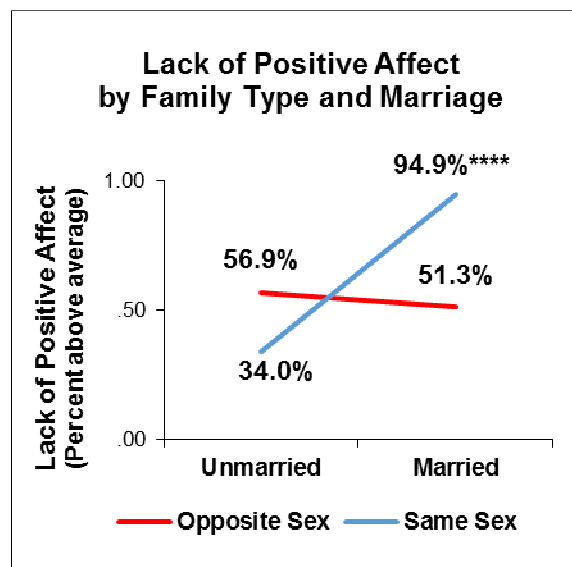


Figure 2

426  
 427 Table 4, accordingly, reports the findings of a re-analysis of the Add Health data, with the corrected  
 428 same-sex parent category expressed in the Full Sample, by family type and marriage; figures 1-6  
 429 illustrate selected effects. The table presents the findings of logistic regression models that impose the

430 seven demographic controls used by WRP. The reference category for statistical tests is opposite-sex  
431 married parents.

432 In Table 4, due to the sparseness of the data, the 57-point CES-D scale and related subscales are  
433 expressed as dichotomous predictors divided at the median of the distribution. It is important to bear in  
434 mind that the resulting categories do not predict for a psychological disorder or an abnormal level of  
435 depressive symptoms. Depressive symptoms are lower than average (47.2% SE .89 are above average)  
436 for children with opposite-sex married parents. Child depressive symptoms are 9 points higher with  
437 unmarried opposite-sex parents (56.0% SE 1.1) and a full 40 points higher with married same-sex  
438 parents (87.7% SE 11). Among children with unmarried parents, depressive symptoms (50.4% SE 25)  
439 are lower with same-sex parents than with opposite-sex parents, though the difference is not statistically  
440 significant. See Figure 1. The same pattern can be observed, only more strongly, on the CES-D subscale  
441 for lack of positive affect (unhappiness). Children with unmarried same-sex parents are much less  
442 unhappy (34.0% SE 20) than children with unmarried opposite-sex parents (56.9% SE 1.0), but children  
443 with married same-sex parents are much more unhappy (94.9% SE 6) than are children with married  
444 opposite-sex parents (51.3% SE .86). See Figure 2.

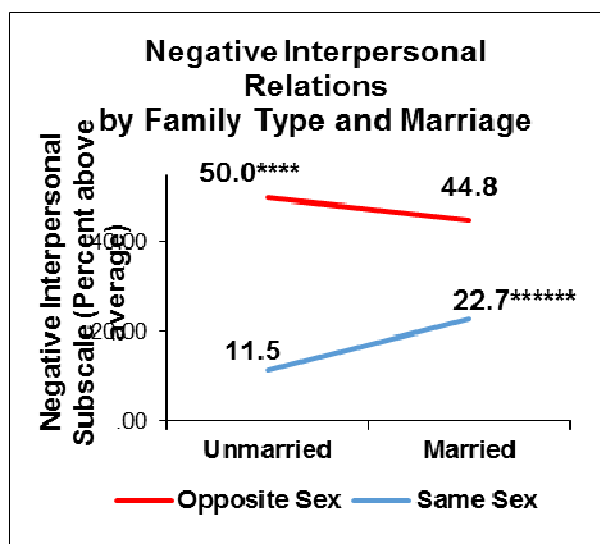


Figure 3

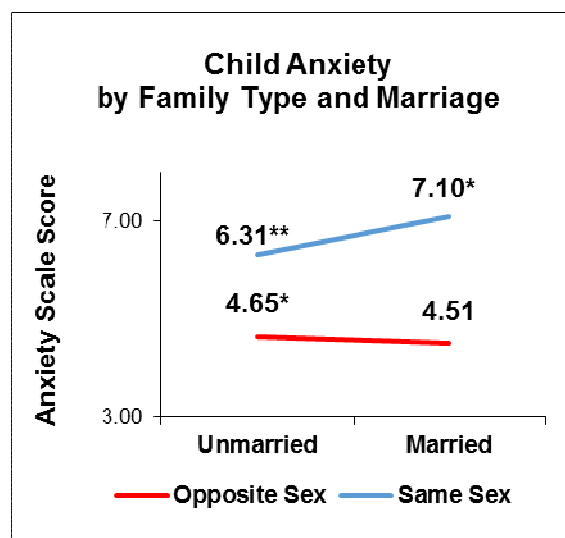


Figure 4

445 Negative interpersonal symptoms are lower overall for children with same-sex parents, suggesting that  
446 they are not subject to widespread social rejection, or at least not as much as are children with opposite-  
447 sex parents. Nonetheless, children whose same-sex parents are married are over twice as likely to have  
448 above-average negative interpersonal symptoms (22.7% SE 9) than are those whose same-sex parents  
449 are unmarried (11.5% SE 8). See Figure 3. On the other hand, anxiety is significantly higher for children  
450 with both unmarried and married same-sex parents, although the latter are higher. With marriage, child  
451 anxiety drops (from 4.65 SE .09 to 4.51 SE .05) with opposite-sex parents, but rises (from 6.31 SE .77 to  
452 7.1 SE 1.5) with same-sex parents. See Figure 4.

453 The proportion of children reporting daily fearfulness or crying, compared to children with married  
454 opposite-sex married parents (3.1% SE .25), is moderately higher for children with unmarried opposite-  
455 sex parents (4.4% SE .46) and unmarried same-sex parents (5.4% SE 5.7), but much higher—over ten  
456 times as high—for children with married same-sex parents (32.4% SE 25.2). Almost a third of children  
457 with same-sex married parents reported feeling fearful or crying daily. This difference is not significant in  
458 Table 4, but (as discussed below) is highly significant in the maximum likelihood models after fitting  
459 control variables.

460 Unlike psychological well-being, both grades and school connectedness are higher with same-sex  
 461 parents than with opposite-sex parents. Parental warmth estimates are also slightly higher with same-sex  
 462 parents, though the difference is not significant. Like the interpersonal and lack of positive affect scales,  
 463 perceived care from adults and peers is higher for children with unmarried same-sex parents, but lower  
 464 for children with married same-sex parents, than it is for the corresponding categories of children with  
 465 opposite-sex parents. In all of these contrasts, however, the pattern of higher well-being with unmarried  
 466 same-sex parents rather than married same-sex parents continues to be observed.

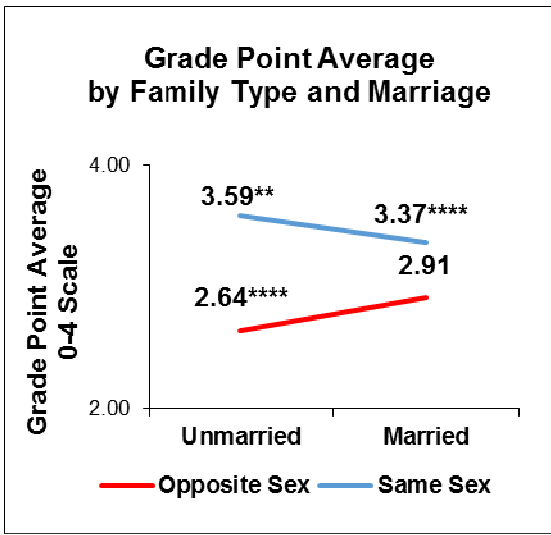


Figure 5

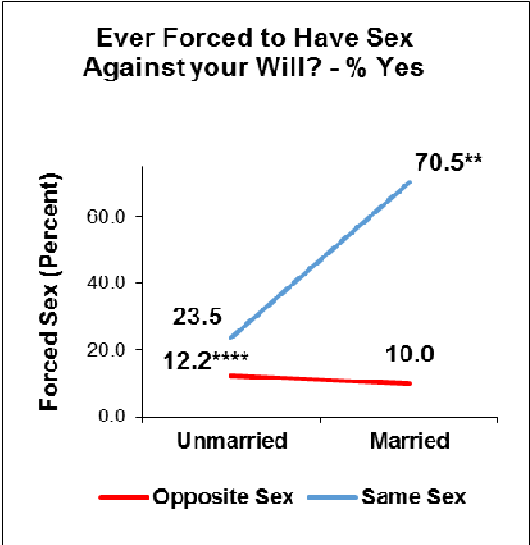


Figure 6

467  
 468 Grade point average (GPA), for example, is higher overall for children with same-sex  
 469 parents (3.4 SE .12) than with opposite-sex parents (2.8 SE .02), but while  
 470 GPA is lower with unmarried opposite-sex parents (2.6 SE .02) than with married opposite-sex  
 471 parents (2.9 SE .02), it is higher with unmarried same-sex parents (3.6 SE .31) than with married same-sex  
 472 parents (3.4 SE .12). See Figure 5

472 Two variables in Table 4 measure family stability. The length of time the adolescents have been with in  
 473 their current family relates to whether the outcomes observed are due to the current parents or may be  
 474 the effect of residence with former parents. Recall that average age is 15 years for the Add Health  
 475 adolescent respondents. Adolescents with opposite-sex married parents have the longest duration with  
 476 those parents, at 13 years. Average duration drops by about 2.5 years with unmarried opposite-sex  
 477 parents (10.4 years SE .18) and married same-sex parents (10.4 years SE 3.1), then plummets to only 4  
 478 years (SE 2.3) with unmarried same-sex parents. By this measure, married same-sex parents are much  
 479 more stable, though child well-being is generally lower, than are unmarried same-sex parents.

480 The percentage of children who have undergone one or more relational transitions from one set of  
 481 parents to another one, a related measure, is lowest for children with opposite-sex married parents and  
 482 highest for those with same-sex married parents; the latter is over four times the size of the former.  
 483 Almost all (83%-88% SE 11-16) children with same-sex parents have experienced at least one relational  
 484 transition, compared to under half (45% SE 1.3) of children with unmarried opposite-sex parents and less  
 485 than a fifth (19% SE .75) of children with opposite-sex married parents. By this measure, married same-  
 486 sex parents are a little less stable than unmarried same-sex parents, though both are much less stable  
 487 than opposite-sex parents.

488 The remaining variables in Table 4 explore different issues of sexual development and family formation.  
 489 Six percent of adolescents with opposite-sex married parents reported that they have ever been  
 490 romantically or sexually attracted to someone of the same sex. This proportion rises to 8 percent with

**Table 5. Adolescent Characteristics as a Function of Family Type and Marriage, showing adjusted regression predictors: Add Health Waves 1 and 3**

	Opposite-sex Parents			Same-sex Parents			
	Unmarried	P>t	Married Parents (Reference)	Unmarried		Married	
				Coeff. (95% CI)	P>t	Coeff. (95% CI)	P>t
<b>Psychological well-being</b>							
Depressive symptoms (CES-D) - <i>above vs. below average</i>	.056**** (.03-.08)	.000	--	.030 (-.4-.4)	.89	.361*** (.10-.62)	.006
you CES-D Interpersonal – People unfriendly or disliked - <i>percent above average</i>	.043**** (.02-.07)	.000	--	-.324**** (-.48-.17)	.19	-.253** (-.47--.03)	.024
– CES-D Lack of Positive Affect Not hopeful, happy, joyful - <i>percent above average</i>	.031** (.004-.06)	.025	--	-.173 (-.51-.17)	.31	.473**** (.31-.63)	.000
Anxiety	.019 (-.01-.05)	.16	--	.279**** (.16-.40)	.000	.367**** (.27-.46)	.000
Daily fearfulness/crying (%)	.007 (-.003-.02)	.16	--	.010 (-.10-.12)	.87	.303 (-.23-.83)	.26
<b>School Outcomes</b>							
GPA	-.078**** (-.11--.04)	.000	--	.287**** (.25-.33)	.000	.208**** (.12-.30)	.000
School connectedness	-.059**** (-.09--.03)	.000	--	.338**** (.23-.45)	.000	.391**** (.35-.43)	.000
<b>Family process and stability</b>							
Parental warmth	-.036*** (-.06--.01)	.005	--	.082 (-.27-.44)	.65	.357**** (.16-.56)	.001
Care from adults and peers	-.055**** (-.08--.03)	.000	--	.357**** (.23-.48)	.000	.002 (-.39-.39)	.99
Child's time in current family (years)	-2.53**** (-2.9--2.2)	.000	--	-8.01**** (-12.6--3.4)	.001	-5.01* (-10.6-0.6)	.08
Percent child transitions	.246**** (.22-.27)	.000	--	.655**** (.28-1.0)	.001	.729**** (.47-.99)	.000
<b>Sexual development/identity</b>							
Same-sex attraction	.022**** (.01-.04)	.001	--	.195 (-.15-.53)	.26	.138 (-.06-.34)	.18
Ever same-sex romantic partner	.004 (.00-.01)	.14	--	-.011**** (-.02--.01)	.000	-.012**** (-.02--.01)	.000
Ever sexual intercourse?	.102**** (.07-.13)	.000	--	.096 (-.12-.31)	.38	-.222 (-.56-.11)	.19
Divorced/Cohabiting/ed at age 19-25	.094**** (.06-.13)	.000	--	.042 (-.29-.37)	.80	.247** (.05-.45)	.016
(If ever intercourse): Ever physically forced to have sex against your will? - % yes	.013 (-.01-.04)	.26	--	.068 (-.39-.53)	.77	.576** (.09-1.0)	.021
Experienced sex abuse by parent	.031**** (.02-.05)	.000	--	-.033**** (-.05--.02)	.000	.387*** (.11-.66)	.007



492 unmarried opposite-sex parents, then to much larger estimated proportions with same-sex parents,  
493 although the differences are not statistically significant. Despite apparently higher rates of same-sex  
494 attraction, no child with same-sex parents reported ever having had a same-sex romantic partner.  
495 Adolescents with same-sex parents were also about half as likely to have ever had sexual intercourse. In  
496 an item taken from the Wave III follow-up, those with unmarried same-sex parents were less likely, and  
497 those with married same-sex parents more likely, to be divorced or cohabiting with an unmarried partner  
498 six years after the initial Add Health interview. Over half of the children with married same-sex parents  
499 were divorced or cohabiting after six years.

500 The last two lines of Table 4 report findings on the sensitive topic of child sex abuse. To increase  
501 accuracy, adolescents entered their answers to these sensitive questions anonymously into a laptop  
502 computer in response to recorded questions they heard using earphones. Adolescents who had ever had  
503 sexual intercourse were given a series of follow-up questions that included being asked about forced sex.  
504 Males were asked if they had ever physically forced someone to have sexual intercourse; females were  
505 asked if they had ever been physically forced to have sexual intercourse. Of adolescents who had ever  
506 had sexual intercourse, 10% to 12% (SE .73-.92) of those with opposite-sex parents reported having  
507 been forced (or forcing someone) to have sexual intercourse. This proportion doubles with same-sex  
508 unmarried parents (24% SE 23), and almost triples again with same-sex married parents.

509 Over two-thirds (71% SE 30) of the children with same-sex married parents who had ever had sexual  
510 intercourse reported that they had been forced to have sex against their will at some point. This high  
511 proportion should be contextualized by several considerations. First, there is a striking gender disparity  
512 for this group that is not present in any other family type: every female adolescent, but no male  
513 adolescents, living with married same-sex parents responded “yes” to having experienced forced sex.  
514 This is consistent with the fact that almost all (85%) of the same-sex parents in this group are lesbian  
515 couples. Second, these adolescent females with married lesbian parents were estimated to be only  
516 about half as likely to have ever had sexual intercourse (15%) than were those with married opposite-sex  
517 parents (32%), though the difference is not statistically significant. Third, this question does not preclude  
518 the possibility of date rape or peer sexual abuse.

519 The final item in Table 4, however, clarifies that much of the sex abuse reported did occur in the family  
520 and that the prevalence of abuse was much higher with married same-sex parents than in the other family  
521 types. This question asks whether the responding adolescent had ever, prior to the sixth grade, been  
522 forced to give or receive a sexual touch or to have intercourse by a parent or caregiver. This question, a  
523 retrospective item from a subsequent wave of Add Health, was asked of all respondents, not just those  
524 who had ever had sexual intercourse. A total of 38% (SE 14) of respondents with married same-sex  
525 parents reported that they had experienced such abuse, compared to much smaller proportions (0-7% SE  
526 0-.6) of the other three categories of marriage and family type.

527 Table 5 sharpens the contrasts by imposing control variables to assess whether the differences between  
528 the groups can be the result of demographic differences rather than marriage or family type. The table  
529 reports linear regression predictors adjusted for child age, sex and race, and parent education and  
530 income, i.e., the same variables on which WRP matched their samples. Most of the contrasts show little  
531 or no change, and few are significantly reduced, after accounting for these control conditions. For same-  
532 sex married parents, the following contrasts are stronger or have higher statistical significance in the  
533 regression models with controls: anxiety, parental warmth, child’s time in current family, forced sex and  
534 parent sex abuse. The following are lower or have lower significance: depressive symptoms,  
535 interpersonal, lack of positive affect, and care from adults and peers. None of the differences by family  
536 type for married persons is rendered insignificant after adjusting for controls.

537 As additional scrutiny to support or withhold further confidence in these findings, the mean and regression  
538 contrasts reported in Tables 3 and 5 were also estimated by maximum-likelihood procedures to assess  
539 the possibility of small-sample bias. Table 6 shows the results for the smallest category, married same-  
540 sex parents. The reference category for all contrasts is married opposite-sex parents. The first two  
541 columns re-present for convenience the mean and regression results already reported in Tables 2 and 3.

**Table 6. Outcomes for same-sex married under various model assumptions**  
**Add Health Wave 1**

Method	Unadjusted		OLS		Logistic		Firth bias-	
	Mean/Percent	(no controls)	Regression	(with controls)	regression	(with controls)	adjusted	logistic
	Mean or Percent	P>t	OR	P>t	OR	P>t	OR	P>t
Depressive symptoms (CES-D)	87.7%****	.00	.36***	.006	6.36*	.10	1.90	.41
CES-D Interpersonal	22.7%****	.000	-.25**	.024	.29**	.067	.27	.15
CES-D Lack of Positive Affect	94.9%****	.000	.47****	.000	19.3**	.031	3.4	.19
Anxiety	7.10*	.08	.37****	.000	19.1**	.011	3.6	.17
Daily fearfulness/crying (%)	32.4%	.25	.30	.26	15.6**	.043	12.1***	.002
GPA	3.37****	.000	.21****	.000	7.4*	.064	2.2	.40
School connectedness	3.37****	.000	.39****	.000	--	--	12.0*	.089
Parental warmth	4.41	.75	.36***	.001	8.6*	.086	3.4	.18
Care from adults and peers	3.78****	.00	.002	.99	1.07	.94	.89	.87
Same-sex attraction	19.0%	.16	.138	.18	3.96*	.058	3.6	.16
Ever sexual intercourse?	15.7%	.22	-.22	.19	.30	.37	.83	.83
Divorced/Cohabiting/ed at age 19-25	57.7%**	.047	.25**	.016	3.02***	.009	1.8	.47
(If ever intercourse): Ever physically forced to have sex against your will? - % yes	70.5%**	.04	.57**	.021	23.9***	.002	10.3	.106
Experienced sex abuse by parent	37.8%**	.02	.39***	.007	13.9***	.007	7.7**	.034

All models shown included controls for child sex, age, race (white/nonwhite), and adoption status; parent age and education (college degree or not); and family income. Reference category for tests is opposite-sex married, except for bias-adjusted models, which contrast same-sex married with all other. For dichotomous models outcome variables were transformed to dichotomies at the distribution median. \* t, P = < 0.10; \*\* t, P < 0.05; \*\*\* t, P < 0.01; \*\*\*\* t, P < 0.001

542

543 The remaining two columns predict the same contrasts using two forms of logistic regression. The third  
544 column shows the result of canonical binary logistic regression employing case weights and survey  
545 design clusters. The results generally, though not always, confirm the consistent results of the linear  
546 analyses shown in the first two columns. Since logistic regression may be biased when one of the  
547 comparison groups are very sparse, column four reports the results of a bias-adjusted logistic regression  
548 designed for rare events estimation. Developed by mathematician David Firth, this form of logistic  
549 regression penalizes the log-likelihood so as to produce unbiased estimates even when one category is  
550 very sparse (18). However, the Firth method cannot make use of the sample weights and clustering used  
551 on Add Health. Thus, while the resulting point estimates for the Firth logistic regression are probably less  
552 accurate than those of the regular logistic regression, when the significance probability is very different  
553 between the two methods, we may suspect that the canonical estimates are biased, thus providing

554 greater confidence that they are not biased in the alternative condition. Taking .25 or greater as “very  
555 different”, and confining ourselves to cases where the decision on the null hypothesis would be changed  
556 by the difference, in Table 6 this is the case for “Depressive symptoms”, “GPA”, and “Divorced/cohabiting  
557 at age 19-25”. While all of these contrasts are significant, and the first two highly significant, in the linear  
558 analyses, this comparison suggests that these findings may not be as robust as other findings in the  
559 table. On the other hand, both logistic estimates are highly significant for the contrast for “Daily  
560 fearfulness/crying”, which is substantively large but not significant in the linear models.

561 In general, contrasts that are confirmed using more of the methods shown in Table 5 are likely more  
562 robust and merit higher confidence. By this test, the strongest finding shown is for parental sex abuse,  
563 which is large and significant by all four methods. All of the psychometric contrasts are consistent over  
564 three methods, as is GPA, school connectedness, later divorce/cohabitation, and forced sex. While no  
565 finding in the table is invalidated by these additional comparisons, those with more consistent findings  
566 may merit additional confidence.

## 567 **DISCUSSION**

568 Almost all scholarly and policy consideration of same-sex marriage has assumed that marriage between  
569 partners of the same sex would result in improved outcomes for children, just as marriage generally does  
570 for children with opposite-sex parents. This presumption is so widespread and so strong that the  
571 prospect of improved child well-being has been cited as one of the primary justifications for regularizing  
572 same-sex marriage.

573 The evidence presented in Table 4 calls that presumption sharply into question. On every measure, well-  
574 being for children with same-sex parents is lower if those parents are married than if they are not.  
575 Figures 1-6 illustrate the effect, showing findings from Table 4. Residing with married rather than  
576 unmarried parents of the same sex is associated with substantially increased depressive symptoms,  
577 anxiety and daily distress, and lower educational achievement and school connectedness. The extremely  
578 high lack of positive affect—lack of hopefulness, happiness, a positive affirmation of life—among children  
579 with married same-sex parents, but low lack of positive affect among children with unmarried same-sex  
580 parents, is particularly notable.

581 To be sure, not all outcomes for children with same-sex parents in these data are negative. In the  
582 corrected sample reported in Table 3, four significant differences are visible for children with same-sex  
583 parents. Two of the differences related to school performance—higher grade point average and school  
584 connectedness—are advantageous, consistent with Rosenfeld’s (2010) finding that children with same-  
585 sex parents progress normally through school. The other two differences report lower outcomes on two  
586 psychosocial measures—anxiety and autonomy—consistent with studies that have found that children  
587 with same-sex parents suffer higher emotional distress (9,14). The positive “differences”, however, follow  
588 the same pattern as do the negative psychological “differences” with respect to marriage, i.e., they are  
589 more positive for children with unmarried, rather than married, same-sex parents. For example, the mean  
590 grade point average of 3.6 for those children with same-sex parents who are unmarried drops to 3.4 if the  
591 parents are married; although both of these numbers are higher than corresponding means for children  
592 with opposite-sex parents. Parental warmth and perceived care from adults and peers are mixed, higher  
593 among children with unmarried same-sex parents, but lower for children with married same-sex parents,  
594 than they are for children with opposite-sex married parents.

595 In the absence of further information, interpretation of these mixed results is necessarily speculative. One  
596 possible explanation for the co-presence of negative psychological effects with positive educational  
597 outcomes is that same-sex attracted persons, and hence their children, may be more intelligent than the  
598 general population. A similar co-existence, of higher average incomes despite increased psychological  
599 distress, has been well established for the population of same-sex attracted adults. It is also possible that  
600 the negative and positive effects are partitioned, each manifesting in a different portion of the population  
601 in question.

602 Another possible explanation is consistent with the recognition that, for the children with same-sex  
603 parents, the relatively positive outcomes, like school progress, family warmth and even interpersonal  
604 perceptions, are more public matters known to peers and community while the negative psychological  
605 effects and child abuse tend to be private and hidden. Previous research has noted the tendency for  
606 same-sex parents to minimize negative features in accounts of their children's lives (19,20). For example,  
607 Malmquist and Nelson, analyzing 96 lesbian mothers' counterfactual descriptions of experiences with  
608 maternal and parenting healthcare professional as "just great", observed that political concerns shaped  
609 their rhetorical accounts: "at stake was the risk of feeding opponents of lesbian parenthood with  
610 arguments they could use against these families, namely that it would be harmful for any child to be  
611 brought up in a two-mother family. Instead, the unproblematic journey, a 'just great' story, was stressed,  
612 highlighted and emphasized over and over again". Thus "when our interviewees claimed their 'just great'  
613 stories, despite their descriptions of inadequate encounters, they were accounting for their creditability as  
614 competent parents" (20). Moreover, just as parents have been reluctant to supply negative accounts,  
615 researchers have been reluctant to demand or acknowledge them (21). Parental bias of this sort could  
616 be avoided or reduced by a greater use of third-party reports, such as those of teachers, or, as Allen  
617 recommends (3), the avoidance of subjective reports in favor of more standardized, objective measures  
618 of child well-being.

619 Lopez and Edelman, in a volume of qualitative reports from children raised by same-sex couples, have  
620 critiqued the "no differences" research on just these grounds. "[S]ocial-science research that has  
621 ostensibly shown positive "outcomes" for children raised by same-sex couples... are really just  
622 measurements of what adults want from children so the adults look good: Does the child have good  
623 grades? Does the child look happy in photographs. ...? Is the child well-adjusted, healthy, a good  
624 athlete, well liked by his peers, ...? In other words, ...: Do children in same-sex couple's homes turn out  
625 the way gay people want them to, so that gay people look good to straight people" (22)? In support of  
626 this point, it is striking that few studies (to my knowledge, only four) in the "no differences" literature have  
627 employed standard psychometric measures of emotional distress such as the CES-D or the Strengths  
628 and Difficulties Questionnaire (23), and no study has asked about parental child abuse. If politically  
629 aware concern for demonstrably positive child outcomes is as pervasive as these accounts suggest, it is  
630 conceivable that same-sex parents could also disproportionately emphasize such demonstrable  
631 achievement in their children, leading to just the kind of mixed results observed in the Add Health data.

632 Increased family stability is often cited as a likely benefit of same-sex marriage, but these findings also  
633 call into question the premise of that argument. Stability leads to more positive child outcomes with  
634 opposite-sex partners, but it appears to have the opposite effect for children with same-sex parents. As  
635 Table 4 shows, children whose same-sex parents were married had been with that particular set of  
636 parents over 2.5 times longer, at over ten years on average, than had children with unmarried same-sex  
637 parents, at about four years on average. Marriage did bring greater stability, but stability did not bring  
638 better child outcomes: married same-sex parents were much more stable, though child well-being was  
639 generally lower, than were unmarried same-sex parents. Similarly, the proportion of children who had  
640 undergone at least one transition from one set of parents to another, such as in a divorce and remarriage,  
641 was at least four times higher, at 83% and 88% for unmarried and married same-sex parents respectively,  
642 than it was for opposite-sex married parents, at 19%. Such transitions are experienced by children as  
643 traumatic, generally impeding their well-being and development. Perhaps the substantially higher rate of  
644 transitions with same-sex parents, estimated at even somewhat higher if they are married, may help to  
645 account for the relatively lower child well-being with married same-sex parents. Multivariate models  
646 suggest that the effects of tenure, transitions and marital status are largely independent, although further  
647 research is necessary to clarify the relationship of these factors.

648 In sum, from the evidence presented in this paper, it does not appear that the operational benefits of  
649 marriage that accrue to opposite-sex couples are severable from the man-woman relationship. It may be  
650 that the kind of functional thinking that underlies the argument that the two forms of marriage relationship  
651 are analogous is mistaken, and the beneficial factors that are observed in man-woman marriage--greater  
652 stability, financial resources, relational security--do not float free in a manner that can be independently  
653 conveyed to another kind of relationship.

654 **Limitations**

655 Despite the signal strengths of Add Health as a large nationally representative dataset, and  
656 notwithstanding the strong significance for contrast effects reported above, due to the small sample sizes  
657 involved, the findings of this study should be considered only provisional and exploratory until and unless  
658 they are confirmed by further research. In particular, the findings presented in Table 4 and related  
659 analyses are based on very small or sparse categories and should not be considered definitive without  
660 corroboration. Although Add Health enables longitudinal analysis, this study examined data from only  
661 one wave, and thus, as with any cross-sectional data, causal inference is not possible. The findings  
662 presented in this study are focused on an assessment of measures presented in prior studies, and should  
663 not be taken as presenting a comprehensive profile of parenting outcomes.

664

665 **CONCLUSION**

666 Contrary to the expectations prompted by the “no differences” literature and related ideologies, harm for  
667 children with same-sex parents does not appear to be attributable to prior heterosexual relationships,  
668 lower stability, relational commitment, or higher stigma among same-sex parents. In the data observed in  
669 this study, the greatest harm for children with same-sex parents came from the most stable and most  
670 marital family arrangements. This unexpected harm was present despite warm and loving parents who  
671 promoted positive school outcomes, but also may be related to higher rates of abuse. Recent first-person  
672 narrative accounts of growing up with same-sex parents have presented a complex image of harm  
673 despite positive parental qualities that is very similar to the impression suggested by these findings  
674 (22,24,25) .

675 The present study has re-examined some of the strongest evidence adduced in support of the no  
676 differences thesis, concluding that, when re-analyzed in a manner that could show differences if they  
677 existed, such differences are manifestly present. As noted in the introduction, a steady drumbeat of  
678 dozens of studies based on small, non-random samples has been celebrated by the American social  
679 science establishment as definitive proof that having same-sex parents is innocuous for child well-being.  
680 In the face of mounting evidence to the contrary, the American Psychological Association continues to  
681 claim: “Not a single study has found children of lesbian or gay parents to be disadvantaged in any  
682 significant respect relative to children of heterosexual parents” (26). The present study definitively  
683 demonstrates that statement to be false.

684 To those convinced that the no differences thesis is true, the evidence presented in this study is  
685 unexpected and possibly inconvenient. Whether future evidence upholds, modifies or rebuts these  
686 findings, they suggest that much of the received social science wisdom about such relationships is  
687 mistaken, and we have just begun to try to understand the effect on children of having two parents of the  
688 same sex.

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