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Self-Harm and Suicidality in Children Referred for Gender Dysphoria

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Objective: This study examined rates of self-harm and suicidality (ideation and behavior) in children referred clinically for gender dysphoria compared with their siblings, and referred and nonreferred children from the Child Behavior Checklist (CBCL) standardization sample. Predictors or correlates of self-harm/suicidality were also examined.

Method: The sample consisted of 572 gender-referred children, 425 siblings, 878 referred children, and 903 nonreferred children. Parent report for 2 CBCL items was used to assess self-harm and suicidality. CBCL total behavior problems and a metric of peer relationship problems were also used.

Results: The gender-referred children and the referred children from the standardization sample had significantly higher scores than siblings and nonreferred children in terms of self-harm/suicidality, total behavior problems, and poor peer relations. Based on logistic regression analyses, gender-referred children were 5.1 times more likely than nonreferred children to talk about suicide and 8.6 times more likely to self-harm/attempt suicide, even after overall behavior problems and peer relationship problems were accounted for. In the final models, group, older age, and more total behavior problems, but not poor peer relations, were significantly associated with an increased likelihood of self-harm/suicidality.

Conclusion: By parent report, children with gender dysphoria show an increased rate of self-harm/suicidality as they get older. This risk was not simply an artifact of the presence of behavioral and emotional problems, although these problems were significant correlates of self-harm/suicidality. Clinicians should routinely screen for the presence of suicidal ideation and behavior in children with gender dysphoria, particularly during the second half of childhood.

Key words: gender dysphoria, suicidality, Child Behavior Checklist

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Children with gender dysphoria (GD) have a marked incongruence between their assigned gender and their experienced/expressed gender.[1] On standardized parent- or teacher-report questionnaires of behavioral and emotional problems, children with GD show, on average, more problems than their siblings and nonreferred children.[2,3] In addition, the magnitude of these problems appears to be largely comparable in degree to that of children referred clinically for other reasons.[2-5] For boys with GD, there is a predominance of internalizing problems, including separation anxiety,[6] whereas for girls with GD, there is a more equal distribution of both internalizing and externalizing problems.[7]

Several studies of children with GD have examined correlates or "predictors" of these problems.[8] For example, 1 study found that age was positively correlated with behavioral and emotional problems on the Child Behavior Checklist (CBCL).[9] A CBCL-derived metric of poor peer relations (e.g., being teased) has proved to be the strongest correlate of these problems in multiple regression analyses.[2,3] Because peer relationship problems also increase with age,[9] it is likely that the relationship between age and behavioral and emotional problems is mediated by the increase in poor peer relations. Using multiple informants, similar findings have been reported for adolescents with GD, including evidence that the degree of behavioral and emotional problems is largely comparable to youth referred for other clinical reasons.[3,10-13]

Risk of suicide among adolescents with GD has recently received a great deal of media attention, particularly following the completed suicide of Ohio transgender teen Leelah Alcorn in December 2014.[14-16] Indeed, there is some evidence that adults with GD have a higher completed suicide rate than adults without GD.[17-19] Systematic data on completed suicides among adolescents with GD are not known, although some clinicians have asserted that they are "alarmingly high."[20]

Using case file information or responses to specific questions, several studies have reported on the prevalence of self-harm and suicidality (thoughts and behaviors) among clinic-referred adolescents with GD, with sample sizes ranging from 34 to 177.[21-25] For self-harm, the range was 28.8% to 41.0%; for suicidal ideation, the range was 17.5% to 42.2%; and for suicide attempts, the range was 11.9% to 15.8%. The time frame for these percentages was not particularly clear, but 1 study reported a lifetime prevalence

This article is discussed in an editorial by Dr. Walter O. Bockting on page 441.

of 51% for suicidal ideation and 30.0% for suicide attempts.[26] Unfortunately, none of these studies used comparison groups.

Steensma *et al.* reported the prevalence of self-harm/suicidality in clinic-referred adolescents with GD from Canada and the Netherlands using 2 items from the CBCL and the Youth Self-Report (YSR) Form: CBCL Item 91 ("Talks about killing self") and CBCL Item 18 ("Deliberately harms self or attempts suicide"),[27,28] and compared the prevalence rates with CBCL/YSR standardization data for referred and nonreferred youth (Steensma TD, VanderLaan DP, Cohen-Kettenis PT, *et al.* Suicidality in gender-dysphoric adolescents: a cross-national, cross-clinic comparative analysis. Unpublished manuscript, 2014).

On the CBCL, the Toronto youth with GD (n = 238) had the highest rate of self-harm/suicidality (Item 91: 35.7%; Item 18: 30.2%), whereas the Dutch youth with GD (n = 250) (Item 91: 24.8%; Item 18: 13.2%) had a rate that was more comparable to that of the referred youth (Item 91: 18.5%; Item 18: 13.5%) in the CBCL standardization sample. All 3 of these groups had much higher rates than the nonreferred youth (Item 91: 3.0%; Item 18: 0.5%). On the YSR, the pattern was similar: the Toronto youth with GD (n = 243) had the highest rate of self-harm/suicidality (Item 91: 40.7%; Item 18: 28.8%), whereas the Dutch youth with GD (n = 242) (Item 91: 27.2%; Item 18: 20.6%) had a rate that was more comparable to that of the referred youth (Item 91: 29.0%; Item 18: 20.5%) in the YSR standardization sample. All 3 of these groups had much higher rates than the nonreferred youth (Item 91: 12.5%; Item 18: 6%).

Several reasons for this elevation among youth with GD have been considered. One possibility is that gender dysphoria is inherently distressing, which leads to self-harm or suicidal thoughts and behaviors. A second possibility is that such thoughts and behaviors are related to more global behavioral and emotional problems[10-11,13] or to generic risk factors for psychopathology. The most common explanation in the extant literature is that suicidality is caused by social ostracism or lack of social support.[19]

At present, few data are available on the prevalence of self-harm and suicidality in children with GD. Based on case file data of 41 children with GD between the ages of 5 and 11 years, Holt *et al.*[22] found that 14.6% had a history of suicidal ideation and 17.0% had a history of either self-harm (14.6%) or suicide attempts (2.4%). These percentages could have been underestimates, as the case file data were based on varied sources of information, and it is conceivable that suicidality was not asked about in all cases. In addition, no comparison groups were used. The present study examined the prevalence of suicidal thoughts and behaviors in a consecutive series of children referred to a specialized gender identity clinic. We compared these rates with data from 3 control groups (siblings, children referred for other clinical reasons, and nonreferred children) using the same methodology used in the study of adolescents from Toronto and the Netherlands with GD. We then examined the effects of age, poor peer relations, and behavioral problems in general on the prevalence of self-harm/suicidality.

METHOD

Participants

The probands consisted of 572 gender-referred children (463 natal boys; 109 natal girls) and 425 of their siblings (239 boys, 186 girls), who ranged in age from 3 to 12 years, and for whom at least 1 parent had completed the CBCL for children 4 to 18 years of age.[27] All of the gender-referred children were evaluated in a specialized gender identity service housed within a child and youth mental health program at an academic health science center between 1976 and 2015 (mean year of assessment, 1997.72; SD = 9.41). CBCLs were not available for an additional 29 gender-referred children (e.g., because the family dropped out of the assessment process) and 14 gender-referred children whose parents completed the CBCL version for 2- to 3-year-olds,[29] which did not contain the relevant CBCL items used in the current study (see below).

We also used CBCL data from the matched-pairs sample of 911 clinic-referred children (485 boys; 426 girls) and 911 nonreferred children (485 boys; 426 girls) from Achenbach and Rescorla[30] who ranged in age from 6 to 12 years. Referred children were recruited from the 1999 National Survey of Children, Youth, and Adults and from 20 outpatient and inpatient mental health services, primarily in the United States, but also 1 site each from Australia and England.[30] The referred children were heterogeneous with regard to *DSM* diagnoses. Nonreferred children were drawn from the 1999 National Survey of Children, Youth, and Adults in the United States and had not received mental health services in the 12 months before the survey.[30] In the 2001 version of the CBCL, there is 1 item pertaining to gender identity (Item 110: "Wishes to be of opposite sex"). For the present study, we excluded the 33 referred children and 8 nonreferred children whose parents endorsed this item, leaving a total sample of 878 referred children (472 boys; 406 girls) and 903 nonreferred children (482 boys; 421 girls).

Measures

We used CBCL ratings by the mother (if maternal ratings were not available, ratings by father or another adult, such as a foster parent or group home worker, were used). For this study, we examined CBCL Item 18 ("Deliberately harms self or attempts suicide") and Item 91 ("Talks about killing self") as metrics of suicidality. Like all items on the CBCL, both items were rated on a 0- to 2-point scale where 0 = "Not true," 1 = "Somewhat or sometimes true," and 2 = "Very true or often true." Across all groups, the correlation between the 2 items was 0.53 ($p < .001$). We created an overall suicidality index by summing the 2 items. We also dichotomized the 2 items, where 0 was dummy-coded as 0, and 1 to 2 dummy-coded as 1. We also used a metric of poor peer relations consisting of CBCL Item 25 ("Doesn't get along with other kids"), Item 38 ("Gets teased a lot"), and Item 48 ("Not liked by other kids"), which has been used in prior studies.[2-3,31] In the present study, Cronbach's α for this scale was 0.81. Finally, we calculated the behavior problem sum scores of all items on the CBCL (minus the 2 suicidality items). For the gender-referred children and their siblings, the 2 CBCL items (Items 5 and 110) pertaining to gender identity from the original version[32] were artificially set to 0 and thus were not included in the total problem score. For the gender-referred children and siblings, the original version of the CBCL was used.[32] For the referred and nonreferred children, however, the 2001 version of the CBCL was used.[30] Of the 118 CBCL items, Items 2, 4, 5, 28, 78, and 99 in the original version were replaced with 6 new items in the 2001 version. Thus, the total problem score used in the current study was based on slightly different item sets. However, it should be noted that the key items used in the present study (i.e., the 2 suicidality items and the 3 items pertaining to poor peer relations) were identical. In the 2001

version of the CBCL, Item 5 ("Behaves like opposite sex") from the 1991 version was deleted and replaced with a different item.

Data Analysis

All analyses were conducted using SPSS version 22 software. Between-groups comparisons on the CBCL measures were conducted with either parametric or nonparametric statistics. The primary aim of these tests was to determine whether there were significant differences on the CBCL measures, including the focal examination of suicidality, among the 4 groups of children. All tests were 2-tailed. Predictors of suicidality were examined with a series of logistic regression analyses, with the nonreferred children from the CBCL standardization sample serving as the reference group. The present study constituted a reanalysis of data from previous research projects for which there was ethics approval from the Centre for Addiction and Mental Health.

RESULTS

Because the 2001 version of the CBCL did not include data on referred and nonreferred children under the age of 6 years, our comparative analyses described below did not include the data on the gender-referred children and siblings who were under the age of 6 years.

Total Behavior Problems

Table 1 shows the mean sum of CBCL behavior problems rated as 1 or 2 (minus the 2 suicidality items) as a function of group and sex. A 4 (Group) × 2 (Sex) analysis of variance (ANOVA) yielded a significant Group × Sex interaction ($F_{3,2453} = 3.91$, $p = .008$). To decompose the significant interaction, we conducted a 1-way ANOVA for Group, which was significant ($F_{3,2497} = 413.43$, $p < .001$), and Duncan post hoc tests showed that the referred group had, on average, significantly more behavior problems in general than the other 3 groups; the gender-referred group had significantly more behavior problems than the siblings and nonreferred group; and the siblings had more behavior problems than the nonreferred group (all $p < .05$). For sex, post hoc analyses showed that the referred boys had, on average, significantly more behavior problems than the referred girls ($t_{876} = 3.90$, $p < .001$). None of the other within-group sex differences were statistically significant.

Poor Peer Relations

Table 1 also shows the mean sum score for the Poor Peer Relations scale as a function of group and sex. A 4 (Group) × 2 (Sex) ANOVA yielded a significant Group × Sex interaction ($F_{3,2453} = 3.85$, $p = .009$). To decompose the significant interaction, a 1-way ANOVA for Group was significant ($F_{3,2457} = 280.34$, $p < .001$). Duncan post hoc tests showed that both the referred group and the gender-referred group had, on average, poorer peer relations than both the siblings and the nonreferred group (all $p < .05$). The referred group and the gender-referred group did not differ significantly on poor peer relations, nor did the siblings and the nonreferred group. For sex, post hoc analyses showed that the gender-referred boys had, on average, significantly poorer peer relations than the gender-referred girls ($t_{365} = 2.30$, $p = .022$), and the same was the case for the referred group ($t_{876} = 4.20$, $p < .001$). The sex differences for the siblings and the nonreferred group were not significant.

Suicidality

Table 1 also shows the percentage of children as a function of group in which the 2 CBCL suicidality items were rated as 1 or 2 (within-group comparisons did not reveal any significant sex differences in the percentage of children for whom the 2 suicidality items were rated as 1 or 2, so all analyses collapsed across sex). For Item 91, a 4 (Group) × 2 (Suicidality: Yes vs. No) χ^2 test was significant ($\chi^2[3] = 210.66$,

TABLE 1 Child Behavior Checklist Measures as a Function of Group and Sex (6- to 12-Year-Olds)

	Gender-Referred			Siblings			Referred			Nonreferred		
Measures	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**
Sum Behavior Problems[a]												
Boys	51.28	27.49	289	30.02	24.04	168	66.36	31.00	472	24.17	17.55	482
Girls	53.08	26.22	78	25.92	20.22	145	58.05	31.86	406	22.61	16.50	421
Sum Poor Peer Relations[b]												
Boys	2.50	1.85	289	0.73	1.34	168	2.43	1.71	472	0.59	1.03	482
Girls	1.97	1.48	78	0.57	1.03	145	1.95	1.69	406	0.52	0.88	421
Sum Suicidality Index[c]												
Boys	0.30	0.67	289	0.13	0.50	168	0.55	0.95	472	0.02	0.15	482
Girls	0.31	0.69	78	0.06	0.31	145	0.46	0.92	406	0.02	0.13	421
Item 18 (% rated 1 or 2)	6.6			2.2			19.1			0.2		
Item 91 (% rated 1 or 2)	19.1			5.8			23.3			1.8		

Note: [a]*Absolute range, 0–230 (for the referred and nonreferred children) and 0–228 for the gender-referred children and their siblings. The sum score excluded the 2 suicidality items for all groups and Item 110 for the referred and nonreferred children or Items 5 and 110 for the gender-referred children and their siblings (see text for details).*

[b]*Absolute range, 0–6.*

[c]*Absolute range, 0–4.*

TABLE 2 Parental Endorsement of Child Behavior Checklist Suicidality Items as a Function of Group and Age

Group	Age Group (y)																	
	3–4		5		6		7		8		9		10		11		12	
	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
Item 91: Talks about killing self																		
Gender dysphoria	0.9	110	7.4	95	9.3	86	10.2	59	18.3	71	26.0	50	33.3	39	27.6	29	27.3	33
Siblings	1.4	69	2.3	43	2.6	39	4.2	48	4.8	62	8.9	45	2.3	43	11.9	42	5.9	34
Referred					15.5	116	12.6	111	18.2	121	27.0	122	25.3	98	29.4	136	27.2	173
Nonreferred					2.5	119	1.7	115	1.6	129	1.6	123	3.8	104	0.7	137	0.6	176
Item 18: Deliberately harms self or attempts suicide																		
Gender dysphoria	0.0	110	5.3	95	2.3	86	1.7	59	9.9	71	4.0	50	12.8	39	17.2	29	6.1	33
Siblings	1.4	69	2.3	43	2.6	39	2.1	48	1.6	62	4.4	45	0.0	43	2.4	42	2.9	34
Referred					19.8	116	13.5	111	18.2	121	20.5	122	16.2	98	21.3	136	19.1	173
Nonreferred					0.0	119	0.0	115	0.8	129	0.0	123	0.0	104	0.7	137	0.0	176

Note: Referred and nonreferred children are from Achenbach and Rescorla.[30] Raw data provided by T. M. Achenbach in an SPSS data file.

$p < .001$), as was the case for Item 18 ($\chi^2[3] = 223.48$, $p < .001$). For Item 91 ("Talks about killing self"), the referred group had the highest percentage (22.7%), followed by the gender-referred group (19.1%), the siblings (5.8%), and the nonreferred group (1.7%). A similar pattern was evident for Item 18 ("Deliberately harms self or attempts suicide"): 18.6%, 6.5%, 2.2%, and 0.2%, respectively.

We next calculated an overall suicidality index by summing the ratings across the 2 items (Table 1). A 1-way ANOVA for Group was significant ($F_{3,2457} = 94.06$, $p < .001$). Duncan post hoc tests showed that the referred group had, on average, a significantly higher score than the other 3 groups, and the gender-referred group had a significantly higher score than the siblings and the nonreferred group (all $p < .05$), who did not differ significantly from each other. For the gender-referred probands, the correlation between year of assessment and the suicidality index was $r = 0.02$, which was not significant.

Logistic Regression

Age Effects on Suicidality. Table 2 shows the percentage of children in which the 2 suicidality items were endorsed as a function of age. From Table 2, it can be seen that the highest percentages were among the 10- and 11-year-olds for Item 91 and among the 11-year-olds for Item 18 (with the exception of the nonreferred children, where there were floor effects). For Item 91, the gender-referred group had the largest range (9.3–33.3%) across the age range of 6 to 12 years, followed by the referred group (12.6–29.4%). The same was true for Item 18: for the gender-referred group, the range was from 1.7% to 17.2%, and for the referred group, the range was from 14.8% to 21.6% (for completeness, Table 2 includes the data on gender-referred children and their siblings who were under the age of 6 years).

To evaluate age effects, we conducted 2 logistic regressions in which group and age were entered as predictor variables. Item 91 or Item 18 was the criterion variable. For these analyses, the nonreferred group served as the reference group. The results of the logistic regression are shown in Table 3. Each coefficient, B, represents the change in the log odds of scoring positive for suicidality for a 1-unit increase in the corresponding predictor, controlling for all other predictors in the model. The next column presents the standard error (SE) for each B. The Wald statistic was the quantity used to determine the significance level of each predictor variable. The quantity, e^B, is the multiplicative change in the odds of scoring positive for suicidality for a 1-unit increase in the corresponding predictor, and thus $100 \times (e^B - 1)$ represents the percentage change in the odds for a 1-unit increase in that predictor.[33]

For Item 91 (ideation), both group and age were significant ($p < .001$). The gender-referred group was 15.21 times more likely to talk about killing oneself than the nonreferred group ($p < .001$); the siblings were 3.57 times more likely ($p = .001$), and the referred group was 17.65 times more likely ($p < .001$). With each 1-unit increase in age, children across all groups were 1.16 times more likely to talk about killing oneself. For Item 18 (behavior), group was a

TABLE 3 Logistic Regression Predictors for the 2 Child Behavior Checklist (CBCL) Suicidality Items (Group and Age; Group, Age, and Poor Peer Relations; Group, Age, Poor Peer Relations, and General Behavior Problems)

Item 91: "Talks about killing self" **Step 1**	***B***	**SE**	**Wald**	***df***	***p***	e^B	**95% CI**
Group			140.17	3	<.001		
Gender-referred	2.72	0.29	85.85	1	<.001	15.21	8.55–27.05
Siblings	1.27	0.35	12.74	1	<.001	3.57	1.77–7.18
Referred	2.87	0.27	110.52	1	<.001	17.65	10.33–30.15
Age	0.15	0.03	22.35	1	<.001	1.16	1.09–1.24
Item 18: "Deliberately harms self or attempts suicide" **Step 1**	***B***	**SE**	**Wald**	***df***	***p***	e^B	**95% CI**
Group			93.35	3	<.001		
Gender-referred	3.47	0.73	22.13	1	<.001	32.34	7.59–137.65
Siblings	2.32	0.80	8.36	1	.004	10.24	2.11–49.56
Referred	4.63	0.71	42.20	1	<.001	102.85	25.41–416.24
Age	0.056	0.038	2.12	1	.14	1.05	0.98–1.14
Item 91: "Talks about killing self" **Step 1**	***B***	**SE**	**Wald**	***df***	***p***	e^B	**95% CI**
Group			69.98	3	<.001		
Gender-referred	1.96	0.30	40.74	1	<.001	7.13	3.90–13.05
Siblings	1.19	0.36	11.11	1	.001	3.31	1.63–6.70
Referred	2.23	0.28	672.38	1	<.001	9.34	5.36–16.27
Age	0.11	0.03	10.61	1	.001	1.11	1.04–1.19
Poor Peer Relations	0.36	0.04	82.85	1	<.001	1.43	1.32–1.55
Item 18: "Deliberately harms self or attempts suicide" **Step 1**	***B***	**SE**	**Wald**	***df***	***p***	e^B	**95% CI**
Group			73.53	3	<.001		
Gender-referred	2.62	0.74	12.28	1	<.001	13.79	3.18–59.87
Siblings	2.24	0.80	7.73	1	.005	9.41	1.93–45.71
Referred	3.95	0.71	30.20	1	<.001	51.97	12.70–212.65
Age	0.005	0.04	0.01	1	NS	1.01	0.93–1.08
Poor Peer Relations	0.38	0.04	65.80	1	<.001	1.47	1.34–1.61
Item 91: "Talks about killing self" **Step 1**	***B***	**SE**	**Wald**	***df***	***p***	e^B	**95% CI**
Group			28.32	3	<.001		
Gender-referred	1.63	0.31	27.08	1	<.001	5.10	2.76–9.44
Siblings	0.97	0.36	6.99	1	.008	2.65	1.28–5.47
Referred	1.38	0.29	21.74	1	<.001	4.00	2.23–7.16
Age	0.10	0.03	7.86	1	.005	1.10	1.03–1.18
Poor Peer Relations	−0.00	0.05	0.01	1	NS	0.99	0.90–1.10
General behavior problems	0.03	0.00	129.58	1	<.001	1.03	1.03–1.04
Item 18: "Deliberately harms self or attempts suicide" **Step 1**	***B***	**SE**	**Wald**	***df***	***p***	e^B	**95% CI**
Group			31.37	3	<.001		
Gender-referred	2.15	0.75	8.12	1	.004	8.58	1.95–37.63
Siblings	1.90	0.81	5.45	1	.02	6.73	1.35–33.36
Referred	2.99	0.72	16.96	1	<.001	19.97	4.80–83.03
Age	−0.02	0.04	0.22	1	NS	0.98	0.90–1.06
Poor Peer Relations	−0.03	0.06	0.22	1	NS	0.97	0.85–1.09
General behavior problems	0.04	0.00	112.12	1	<.001	1.04	1.03–1.04

Note: The reference group was the nonreferred children in the CBCL standardization sample. NS = not significant.

significant predictor ($p < .001$), but age was not. The gender-referred group was 32.34 times more likely to deliberately self-harm or attempt suicide than the nonreferred group ($p < .001$), the siblings were 10.24 times more likely ($p = .004$), and the referred group was 102.85 times more likely ($p < .001$).

Effects of Poor Peer Relations on Suicidality. The correlation between the measure of poor peer relations and suicidality was 0.36 ($p < .001$). To evaluate the effects of poor peer relations, it was added to the logistic regression models. As shown in Table 3, for Item 91 (ideation), group, age, and poor peer relations were all significant. The gender-referred group was 7.13 times more likely to talk about killing oneself than the nonreferred group ($p < .001$); the siblings were 3.31 times more likely ($p = .001$), and the referred group was 9.34 times more likely ($p < .001$). For Item 18 (behavior), group and poor peer relations were significant predictors (both $p < .001$), but age was not. The gender-referred group was 13.79 times more likely to deliberately self-harm or attempt suicide than the nonreferred group ($p < .001$), the siblings were 9.41 times more likely ($p = .005$), and the referred group was 51.97 times more likely ($p < .001$). These findings show that controlling for poor peer relations reduced the odds of suicidality (both in ideation and in behavior) in all 3 groups compared to the nonreferred group, but the odds ratios were still statistically significant.

Effects of Behavior Problems in General on Suicidality. The correlation between the number of behavior problems and the suicidality index was 0.51 ($p < .001$). To evaluate the effects of general behavior problems, it was added to the logistic regression models. As shown in Table 3, for Item 91 (ideation), group, age, and general behavior problems were all significant, but poor peer relations was not. The gender-referred group was 5.10 times more likely to talk about killing oneself than the nonreferred group ($p < .001$), the siblings were 2.65 times more likely ($p = .008$), and the referred group was 4.00 times more likely ($p < .001$). For Item 18 (behavior), group and general behavior problems were significant predictors (both $p < .001$), but age and poor peer relations were not. The gender-referred group was 8.58 times more likely to deliberately harm self or attempt suicide than the nonreferred group ($p = .004$), the siblings were 6.73 times more likely ($p = .02$), and the referred group was 19.97 times more likely ($p < .001$). These findings show that controlling for general behavior problems reduced the odds of suicidality (in both ideation and in behavior) in all 3 groups compared to the nonreferred group, but the odds ratios were still statistically significant. With general behavior problems added to the regression equation, poor peer relations was no longer significant.

DISCUSSION

Based on parent report, this study examined the prevalence of both suicidal ideation and self-harm/suicidal behavior in a sample of children referred for gender identity concerns and compared these rates to those of their siblings, referred, and nonreferred children. The referred children in the CBCL standardization sample had, on average, a significantly higher suicidality sum score than the gender-referred children, but both groups had a significantly higher score than the siblings of the gender-referred children and the nonreferred children in the CBCL standardization sample, which did not differ significantly from each other. As noted above, Holt *et al.*[22] reported that 14.6% of their sample of children with GD aged 5 to 11 years had a history of suicidal ideation. We obtained a similar rate of 15.8% for the 5- to 11-year-old children with GD in our sample (Table 2). For self-harm/suicide attempts, Holt *et al.* reported a higher rate than what was obtained in our sample (17.0% versus 6.2%). If, compared to the sample in the Holt *et al.* study, our sample had a much higher proportion of younger children within this age range (which it most likely did), it would account for our lower rate of self-harm/suicide attempts.

In the gender-referred group, suicidal ideation (Item 91) showed a relatively linear relationship with age: as shown in Table 2, there was relatively little such ideation in the very young children, but by ages 10 to 12 years, it was present in about 30% of the sample. This age-related pattern was also present among the referred children in the CBCL standardization sample. Self-harm/suicide attempts (Item 18) were less common than talk about suicide in the gender-referred group: at no age was the prevalence of the former higher than the latter. However, the age-related pattern among the referred children was more complex: for example, at ages 6 to 8 years, the percentage of children who engaged in self-harm/suicide attempts was quite similar to talk about suicide; it was only starting at age 9 years that the latter exceeded the former.

In the first regression model, in which only group and age were entered as predictors, both variables were significant for Item 91, and group was significant for Item 18. Compared to the reference group of nonreferred children, the gender-referred children, their siblings, and the referred children all showed significantly increased odds of suicidal ideation and behavior and the odds ratios were higher for self-harm/attempts suicide than for talk about killing oneself. When we added poor peer relations to the model, the odds ratios were reduced in magnitude, but still significant, suggesting that poor peer relations are 1 potential correlate of suicidal ideation and behavior. However, when we added general behavior problems to the model, poor peer relations was no longer significant. Thus, in the present study, the results suggest that the most important correlate of suicidal ideation and behavior among gender-referred children, their siblings, and referred children was the presence of behavior problems in general.

Our metric of suicidality was relatively crude, as it was based on only 2 items from the CBCL. In addition, it should be noted that Item 18, as written, indexes either actual suicide attempts or self-harming behavior (or both), and the latter may not be a marker of suicidality per se. Nonetheless, the correlation between Items 91 and 18 was reasonable, with an r of 0.53. It would, of course, be desirable in future studies to use a psychometrically superior measurement tool that better differentiates self-harm from bona fide suicide attempts.[34] It would also be important to obtain self-report of suicidal thoughts, at least for older children, using dimensional measures such as the Suicidal Ideation Questionnaire–Junior.[35] Qualitative data about the reasons for

self-harm and suicidality among gender-referred children should also be examined to determine to what extent the proximal precipitants are related to gender identity issues per se and not to other factors.

As noted above, the referred children had a significantly higher mean sum score on the suicidality index and also had more behavioral and emotional problems in general than the gender-referred group. In prior studies, we have shown that when gender-referred children are demographically matched to clinical controls, they appear to have similar levels of CBCL behavior problems.[5] One reason that the referred children may have been more extreme than the gender-referred children in the present study, with regard to both behavior problems in general and suicidality in particular, pertains to sampling. As noted earlier, the referred children were obtained from both outpatient and inpatient settings, and it is quite likely that the inclusion of children from inpatient settings resulted in more severe CBCL ratings. In contrast, all of the gender-referred children were seen as outpatients, although a small percentage of these children were in day-treatment or in the care of a child protection agency at the time of assessment. Compared to CBCL standardization data on referred children from prior samples,[32,36] it appears that the CBCL 2001 sample was somewhat more extreme in degree of behavior problems in general and suicidality in particular.[30] Unfortunately, the raw data did not include a variable denoting outpatient versus inpatient status, so it is not possible to formally test this conjecture. In any case, it is important to note that the gender-referred children were significantly higher in suicidality than their siblings and nonreferred children.

In the present study, once we controlled for general behavior problems, poor peer relations was no longer a significant predictor of suicidal ideation and behavior. Thus, we cannot argue that social ostracism of gender-referred children was a unique correlate of suicidality. This, perhaps, is not surprising, as our metric of poor peer relations was based on only 3 items from the CBCL, whereas the measure of general behavior problems was based on a much larger number of items and thus may have been a more robust measure. Our measure of poor peer relations also did not take into account the potential differential influence of same-sex versus opposite-sex peers, which may have diluted its power. There is some evidence that gender-referred children, particularly natal boys, are more likely to have trouble with same-sex peers than opposite-sex peers.[37] Thus, future studies should take this into account when attempting to gauge the potential effects of social ostracism within the peer group on suicidal ideation and behavior.

In summary, the results of the present study suggest that self-harm and suicidality are part of the clinical presentation of a sizeable minority of gender-referred children, particularly in the second half of childhood. As noted in Table 2, 33.3% of 10-year-old gender-referred children were rated by the parent as expressing suicidal ideation, and 17.2% of the 11-year-olds were rated as engaging in self-harm or suicide attempts. These data were obtained over a period of 40 years, which was made possible by the use of a standardized measure. One could, however, ask if secular changes (e.g., a greater societal acceptance of gender-variant children) might cloud the use of a data set from such a long period of time. In this regard, it is of note that our suicidality metric showed a correlation of almost 0 with year of assessment, suggesting that whatever secular changes have taken place, it does not appear to have an impact on parent report of self-harm/suicidality in this particular clinical population. To some extent, this finding is consistent with broader analyses of CBCL behavior problems, for which there have been only very small changes in sampled cohorts.[38,39]

Our data suggest that it would be prudent for the practicing clinician to routinely ask about the presence of suicidality during the assessment of children with gender dysphoria, along with an evaluation of behavioral and emotional problems more generally. The presence of these problems then requires a case formulation in which both distal (e.g., biological vulnerability to psychiatric disorder) and proximal (e.g., social problems) factors are taken into account in developing a plan for clinical management. &

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