

# Factors Associated With Desistence and Persistence of Childhood Gender Dysphoria: A Quantitative Follow-Up Study

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**Objective:** To examine the factors associated with the persistence of childhood gender dysphoria (GD), and to assess the feelings of GD, body image, and sexual orientation in adolescence. **Method:** The sample consisted of 127 adolescents (79 boys, 48 girls), who were referred for GD in childhood (<12 years of age) and followed up in adolescence. We examined childhood differences among persisters and desisters in demographics, psychological functioning, quality of peer relations and childhood GD, and adolescent reports of GD, body image, and sexual orientation. We examined contributions of childhood factors on the probability of persistence of GD into adolescence. **Results:** We found a link between the intensity of GD in childhood and persistence of GD, as well as a higher probability of persistence among natal girls. Psychological functioning and the quality of peer relations did not predict the persistence of childhood GD. Formerly nonsignificant (age at childhood assessment) and unstudied factors (a cognitive and/or affective cross-gender identification and a social role transition) were associated with the persistence of childhood GD, and varied among natal boys and girls. **Conclusion:** Intensity of early GD appears to be an important predictor of persistence of GD. Clinical recommendations for the support of children with GD may need to be developed independently for natal boys and for girls, as the presentation of boys and girls with GD is different, and different factors are predictive for the persistence of GD. *J. Am. Acad. Child Adolesc. Psychiatry*, 2013;52(6):582–590. **Key Words:** childhood gender dysphoria, desistence, persistence, sexual orientation, social role transitioning

Many children who experience gender dysphoria (GD), a sense of discomfort from incongruence between their gender identity and assigned sex, will not continue to experience dysphoria into adolescence and adulthood. However, a substantial minority (2–27% across studies) will continue to report GD and may seek services for gender reassignment later in life. To date, the prospective follow-up studies on children with GD, for whom the majority would meet the *DSM-IV-TR* diagnostic criteria for Gender Identity Disorder (GID)<sup>1</sup> collectively reported on the outcomes of 246 children. At the time of follow-up in adolescence or adulthood, these studies showed that, for the majority of children (84.2%; n = 207), the GD

desisted.<sup>2</sup> These studies were conducted across several decades during which the opportunity and social acceptance for gender reassignment has increased dramatically. The current study focuses on children in a context in which gender reassignment is available, generally socially accepted, and covered by health insurance.

Knowledge of the factors associated with persistence of childhood GD is limited. Prospectively, 1 study by Wallien and Cohen-Kettenis,<sup>3</sup> reporting on the outcome in adolescence and early adulthood for 77 clinically referred children with GD (21 persisters and 56 desisters), found that the percentage of a complete childhood GID diagnosis was higher for children with persisting GD than for children with desisting GD. Furthermore, compared to the desisters, the persisters showed more gender-variant behavior and a higher intensity of GD in childhood. In



This article is discussed in an editorial by Dr. Peter T. Daniolos on page 569.

line with these findings, Drummond *et al.*<sup>4</sup> showed that girls with persisting GD recalled significantly more gender-variant behavior and GD during childhood than the girls classified as having desisting GD. More recently, another study by Singh<sup>5</sup> in 139 natal boys with GD confirmed the link between the intensity of childhood GD and adolescent and adult persistence of GD. Singh also found that desistence of GD was associated with a higher social class; however other possible indicators, such as psychological functioning or the quality of peer relations, were not different between the persisters and desisters in childhood.

Indications of more subtle childhood differences between persisters and desisters were reported in a qualitative follow-up study of 25 children with GD (14 persisters and 11 desisters) by Steensma *et al.*<sup>2</sup> They found that both the persisters and desisters reported cross-gender identification from childhood, but their underlying motives appeared to be different. The persisters explicitly indicated that they believed that they *were* the “other” sex. The desisters, however, indicated that they identified as girlish-boys or boyish-girls who only *wished* they were the “other” sex. With regard to the reported bodily discomfort by the persisters as well as by the desisters, the persisters indicated that their discomfort originated from the experience of incongruence between their bodies and their gender identity, whereas the desisters indicated that the discomfort was more likely to be a result of the wish for another body to fulfill the desired social gender role. As the information was based on subjective recollection and was therefore susceptible to biased recall,<sup>6</sup> these findings should be interpreted with caution. Taken together, the prior research suggests that persistence of childhood GD is most closely linked to the intensity of the GD in childhood, the amount of gender-variant behavior, and possible differences in motives or cognitive constructions of the dysphoria.

Most long-term studies of GD also examined adolescent or adult sexual orientation and found an association between the presence of childhood GD and a heightened report of a sexual orientation directed towards the same natal sex or to both sexes.<sup>2</sup> In short, childhood GD may predict a later desire for gender reassignment in some, and an increased report of same sex attractions only in others. Remaining children reported desistence of GD and predominately opposite sex attractions. The proportions of children on each

of these 3 developmental pathways have not been fully established.

The present study examined possible factors associated with persistence of childhood GD by comparing a number of childhood variables (e.g., demographic background, GD, gender-variant behavior, psychological functioning, and quality of peer relations) between adolescent persisters and desisters who were clinically referred to our gender identity service in childhood. In addition to this, we examined psychosexual outcomes, body image, and the intensity of GD at the time of follow-up in adolescence.

## METHOD

### Participants and Procedure

The study sample consisted of 127 adolescents (79 boys, 48 girls), who were referred and diagnosed in childhood (< 12 years of age) at the Center of Expertise on Gender Dysphoria at the Vrije Universiteit (VU) University Medical Center in Amsterdam, the Netherlands. This sample differs from the previous persistence study from the Amsterdam clinic.<sup>3</sup> The diagnostic procedure in childhood consisted of several sessions with the child and/or the parents, including an psychodiagnostic assessment of the child. The aim of the diagnostic phase is to determine whether the criteria for a GID diagnosis<sup>1</sup> are met and to evaluate the cognitive, psychological and psychosocial functioning of the child and the functioning of the family, in order to give parents pedagogical advice or advice to treat co-existing problems.<sup>7</sup>

Between 2000 and 2008, 225 children (144 boys, 81 girls) were consecutively referred to the clinic. From this sample, 127 adolescents were selected who were 15 years of age or older during the 4-year period of follow-up between 2008 and 2012. Of these adolescents, 47 adolescents (37%, 23 boys, 24 girls) were identified as persisters. They reapplied to the clinic in adolescence, requested medical treatment, were diagnosed again with GID, and considered eligible for treatment (puberty suppression with GnRH analogues first, cross-sex hormone treatment after the age of 16, and surgery after 18 (details of treatment in de Vries and Cohen-Kettenis<sup>7</sup>). As the Amsterdam clinic is the only gender identity service in the Netherlands where psychological and medical treatment is offered to adolescents with GD, we assumed that for the 80 adolescents (56 boys and 24 girls), who did not return to the clinic, that their GD had desisted, and that they no longer had a desire for gender reassignment. Demographic characteristics of the sample are provided in Table 1.

In this study, information on demographic background, psychological functioning, GD and cross-gender identification in childhood was retrieved from the medical charts for all adolescents. At the time of follow-up, and with approval of the Ethics Committee

**TABLE 1** Demographic Characteristics as a Function of Desistence and Persistence and Sex

Characteristic	Persistence (n = 47)		Desistence (n = 80)		Responders <sup>a</sup> (n = 46)		Parents <sup>a</sup> (n = 6)		Nonresponders <sup>a</sup> (n = 28)	
	Boys (n = 23)	Girls (n = 24)	Boys (n = 56)	Girls (n = 24)	Boys (n = 31)	Girls (n = 15)	Boys (n = 5)	Girls (n = 1)	Boys (n = 20)	Girls (n = 8)
Age in childhood, y										
Mean	9.33	9.83	8.70	9.35	8.84	9.23	8.92	10.48	8.43	9.44
SD	1.49	1.36	1.52	1.44	1.41	1.54	1.43	—	1.73	1.34
Range	7–12	6–12	6–12	6–12	6–12	6–12	7–12	—	6–12	7–12
Age at follow-up, y										
Mean	16.12	16.33	16.10	16.07	16.05	16.03	15.92	16.32	16.21	16.10
SD	.91	1.25	.92	.82	.93	.80	.74	—	.97	.95
Range	15–18	15–19	15–19	15–18	15–18	15–18	15–17	—	15–19	15–18
Interval, y										
Mean	6.80	6.50	7.39	6.72	7.21	6.81	6.99	5.84	7.78	6.66
SD	1.62	1.42	1.29	1.51	1.18	1.67	1.87	—	1.29	1.33
Childhood diagnosis (%)										
GID	91.3	95.8	39.3	58.3	48.4	66.7	0.0	0.0	35.0	50.0
Subthreshold	8.7	4.2	60.7	41.7	51.6	33.3	100.0	100.0	65.0	50.0
Social role (%)										
No transitioning	56.5	41.7	96.4	54.2	93.5	53.3	100.0	0.0	100.0	62.5
Partial transitioning	30.4	54.2	3.6	45.8	6.5	46.7	0.0	100.0	0.0	37.5
Complete transitioning	13.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parents' MS (%)										
Both	82.6	79.2	69.6	54.2	80.6	60.0	80.0	0.0	50.0	50.0
Other <sup>b</sup>	17.4	20.8	30.4	45.8	19.4	40.0	20.0	100.0	50.0	50.0
SES (%) <sup>b</sup>										
I High	17.4	13.0	26.4	29.2	30.0	26.7	0.0	0.0	27.8	37.5
II Med	56.5	56.5	39.6	54.2	33.3	53.3	80.0	100.0	38.9	50.0
III Low	26.1	30.4	34.0	16.7	36.7	20.0	20.0	0.0	33.3	12.5
Full-scale IQ										
Mean	103.30	99.42	101.96	100.55	100.10	102.50	107.20	—	103.61	97.13
SD	12.51	14.34	12.81	15.93	13.07	14.14	9.78	—	13.09	19.22

Note: GID = gender identity disorder; MS = marital status.  
<sup>a</sup>This column is a subgroup of the Desistence column.  
<sup>b</sup>For parents' MS and socioeconomic status (SES), see text for classification.

of the VU University Medical Center, the adolescents were contacted to participate in the study. Upon agreement, an informed consent form and a set of questionnaires, assessing information on current GD, body image, and sexual orientation was mailed. All 47 persisters participated in the study. Of the 80 desisters, 46 adolescents sent back the questionnaires (57.5%) and 6 (7.5%) adolescents refused to participate, but allowed their parents to fill out the parent questionnaires. Twenty-eight adolescents were classified as nonresponders: 12 (15%) did not send back the questionnaires despite follow-up contacts, another 12 (15.0%) were untraceable. In 4 cases (5.0%), the adolescents and the parents indicated that the GD from the past remitted, but these individuals refused to participate.

### Measures: Childhood

**Demographics.** Seven demographic measures were coded in childhood: natal sex, age at assessment, diagnosis, social role transition, parents' marital status, parents' social class, and Full-Scale IQ.

The diagnosis, made by either a child psychologist or psychiatrist, was categorized as follows: children who met all criteria for a *DSM-IV-TR* GID diagnosis, or children who did not meet all criteria and were subthreshold for a GID diagnosis. Social role transition was determined through 2 questions by 1 of the parents around the time of referral. Parents indicated whether their child had socially transitioned to the preferred gender role on a 3-point scale; no; yes, but not in all situations; or yes, completely. In an open

question, they could give further information on hairstyle, clothing, and in which pronoun and name the child was addressed. Based on this information, the children were categorized as follows: no social transition; partial transition (transition in clothing style and hairstyle, but without a change of name and pronoun change); complete transition (transition in clothing and hairstyle; change of name and use of pronoun). Because of the unequal distribution over the 3 categories for boys and girls (Table 1), the 3-point scale was recoded into a dichotomous scale in which 0 indicated no transitioning (category 1) and 1 indicated some transitioning (categories 2 and 3). Marital status of the parents was categorized as either living with both biological parents (or adoptive parents from birth) or all other categories (e.g., single parent, divorced, blended family, living in a group home). To determine parents' social class, a 5-point scale was used where 1 = university degree and 5 = grade 8 or less, and recoded into an education rating between 1.0 and 2.0 = 1 (high), 2.5 to 3.5 = 2 (medium), and 4.0 to 5.0 = 3 (low). Full-Scale IQ was assessed using the Dutch version of the Wechsler Intelligence Scale for Children.<sup>8</sup>

*Gender Identity and Gender Dysphoria.* The Dutch version of the Gender Identity Interview for Children (GIIC)<sup>9</sup> is a 12-item child informant instrument that measures 2 factors: "cognitive gender confusion" and "affective gender confusion." Cognitive gender confusion is assessed by 4 questions asking whether the child identifies as a boy or a girl. Affective gender confusion is assessed by means of 8 questions focusing on affective aspects of gender identity (e.g., "Are there any things that you don't like about being a boy?"). Higher scores on the GIIC reflect more gender-atypical responses.

The Dutch version of the Gender Identity Questionnaire (GIQ)<sup>10</sup> is a 14-item parent-report questionnaire representing 1 factor. The focus of items is on gender-variant behaviors, with higher scores coded in this study to represent a greater frequency of gender-variant behaviors.

*Psychological Functioning and the Quality of Peer Relations.* Psychological functioning was assessed through parental report, by the Dutch version of the Child Behavior Checklist/ 4-18 (CBCL),<sup>11</sup> and through teacher report, by the Dutch version of the Teacher's Report Form (TRF).<sup>12</sup> This study used: the mean Total problem score, i.e., the sum of all items rated 1 or 2; the mean Internalizing behavior score; and the mean Externalizing behavior score.

On the CBCL, there are 2 items related to gender identity: item 5 ("Behaves like the opposite sex") and item 110 ("Wishes to be the opposite sex"). These gender related items were analyzed as separate predictors based on the findings from Cohen-Kettenis *et al.*,<sup>13</sup> and were not included in the 3 above-mentioned scales of the CBCL and TRF.

We created a Peer Relations Scale from 3 items: "Doesn't get along with other kids" (item 25), "Gets

teased a lot" (item 38), and "Not liked by other kids" (item 48), based on findings from Zucker *et al.*,<sup>14</sup> who used this composite scale from the CBCL in a study and found a Cronbach's alpha of 0.81.

### Measures: Adolescence

*Gender Identity, Gender Dysphoria, and Body Image.* The Gender Identity Interview for Adolescents and Adults (GIAA),<sup>15,16</sup> is a 27-item adolescent and adult informant instrument with 1 factor. The items measure gender identity problems and GD for the past 12 months (e.g., "In the past 12 months, have you felt satisfied being a boy?"). Lower scores on the GIAA reflect more gender atypical responses.

The Utrecht Gender Dysphoria Scale (UGDS),<sup>17</sup> is a 12-item questionnaire measuring 1 factor. The items measure the intensity of GD (e.g., "I continuously want to be treated like a boy/man."). There are separate versions of the UGDS for males (UGDS-M) and females (UGDS-F). Higher scores indicate more GD.

The Body Image Scale (BIS)<sup>18</sup> is a 30-item questionnaire that measures body satisfaction and consists of 3 scales: Primary sex characteristics (e.g., genitals), secondary sex characteristics (e.g., breasts, body hair), and neutral body characteristics (e.g., hands, legs). Higher scores indicate greater dissatisfaction.

*Sexual Orientation.* We examined 4 indicators of sexual orientation: "To whom do you feel attracted?" (sexual attraction), "About whom do you fantasize sexually?" (sexual fantasy), "With whom have you kissed?" (sexual behavior), and "How do you identify yourself?" (sexual identity).<sup>3</sup> The sexual behavior domain was assessed by asking about kissing because we expected that many of the adolescents would not have had sexual intercourse. The questions were rated on a 7-point Kinsey scale ranging from exclusively heterosexual (0) to exclusively homosexual (6).<sup>19</sup> According to their scores, the adolescents were classified in 3 sexual orientation categories: attracted to other sex (Kinsey rating 0–1); attracted to both sexes (Kinsey rating 2–4); and attracted to same sex (Kinsey rating 5–6).

*Parent Report.* The questionnaire for parents was used when the adolescent refused to participate, and consisted of 9 questions assessing GD in their offspring. As for sexual orientation, 2 questions assessed sexual attraction ("To whom does your son or daughter feel attracted?") and sexual identity ("How does your son or daughter identify him- or herself?"). Both questions were classified following the same procedure as mentioned above.

### Statistical Analysis

The desister subgroups (responders, reports from parents, and nonresponders), were compared in demographics, childhood psychological functioning, the quality of peer relations, and childhood GD using independent-samples Kruskal-Wallis and  $\chi^2$  Tests.

Logistic regression analyses examined bivariate and multivariate contributions of demographic variables, psychological functioning, quality of peer relations, and childhood GD on probability of persistence of GD in adolescence.

Analyses of variance, *t* tests, and  $\chi^2$  tests compared persisters and desisters on current reports of GD, body image, and sexual orientation.

## RESULTS

### Combination of Response Groups

For the 3 desister groups, no significant differences were observed between the responders, parents who responded, and nonresponders for the demographic variables, except for childhood diagnosis ( $\chi^2[2] = 6.90, p < .05$ ). The adolescents for whom the parents responded were more likely to have a subthreshold diagnosis for GID than the responders and nonresponders. However, in their scores on the childhood measures of GD and psychological functioning, the 3 groups were not significantly different. Given this information, the 3 groups were combined to 1 group of desisters for further analyses.

### Predictors of Persistence

Bivariate logistic regressions estimated the individual contribution of the childhood variables to examine which variables predicted persistence of GD (Table 2). Age and natal sex were the only significant demographic predictors. Older children and girls were more likely to be persisters than younger children and boys. Gender relevant items from the CBCL and TRF, social role transition, responses to the GIIC and GIQ, and receipt of a GID diagnosis in childhood were all significant indicators of adolescent persistence of GD.

To examine the simultaneous contribution of multiple factors, multivariate logistic regressions were run for the combined sample and separately by natal sex. Variables were retained in the model based on their unique contribution to explaining persistence of GD. Variables with very high correlations with other GD measures (e.g., whether or not a diagnosis was given) were not useful for the multivariate model and thus were dropped (Table 3).

In the combined group, the following variables collectively accounted for 58% of the variability in the persistence of GD: age at intake, social role transition, and both cognitive and affective responses to the GIIC. Once these variables were accounted for, responses to the GIQ did

**TABLE 2** Childhood Predictors of Persistence of Gender Dysphoria (GD) Into Adolescence (N = 127, n = 47 Persisters, n = 80 Desisters)

Dependent variable: Persistence of GD	Bivariate OR (CI)
Natal boy	.41 (.20–.87)*
Age at intake	1.37 (1.06–1.76)*
Two parents	2.27 (.96–5.37) NS
High socioeconomic status	.30 (.18–1.69) NS
Medium socioeconomic status	.55 (.55–3.04) NS
Full-Scale IQ	1.00 (.97–1.03) NS
CBCL total problem	.99 (.97–1.01) NS
CBCL internalizing	.98 (.93–1.03) NS
CBCL externalizing	.98 (.94–1.03) NS
CBCL peer relations	.99 (.79–1.24) NS
CBCL gender (items 5 and 110)	4.64 (2.28–9.44)**
CBCL item 5	37.56 (4.95–284.87)**
CBCL item 110	5.13 (2.14–12.33)**
TRF total problem score	1.00 (.98–1.01) NS
TRF internalizing	.98 (.93–1.03) NS
TRF externalizing	1.01 (.97–1.06) NS
TRF peer relations	1.05 (.81–1.36) NS
TRF item 5	1.74 (1.05–2.89)*
Childhood role transition	5.38 (2.36–12.27)**
Gender identity disorder diagnosis	17.93 (5.14–62.55)**
Gender identity interview total	1.33 (1.19–1.49)**
GIIC cognitive items	1.95 (1.46–2.60)**
GIIC affective items	1.30 (1.15–1.47)**
Gender Identity Questionnaire	5.10 (2.03–12.79)**

Note: CBCL = Child Behavior Checklist; OR = odds ratio;  
TRF = Teacher Report Form  
\**p* < .05, \*\**p* < .001.

not predict additional variance in persistence. Cognitive responses to the GIIC were the strongest predictor, accounting for 11% of the unique variability in persistence of GD.

Among natal males, 62% of the variability in the persistence of GD was accounted for by age at intake, social role transition, the cognitive subscale of the GIIC, and the total score of the GIQ. Once these variables were accounted for, responses to the affective component of the GIIC did not predict additional variance in persistence. Social role transition accounted for the largest portion of unique variability (12%), whereas each of the other significant predictors accounted for 6% to 7% of unique variability in persistence of GD. To further examine the effect of childhood social role transitioning on later persistence in natal boys, the boys who transitioned were compared with boys who did not for their scores on the childhood measures of GD. Boys who transitioned had significantly higher scores than those who had not

**TABLE 3** Childhood Predictors of Persistence of Gender Dysphoria (GD) Into Adolescence Using Multivariate Logistic Regression (N = 127, n = 47 Persisters, n = 80 Desisters)

Dependent variable: Persistence of GD	Combined Sample OR (95% CI)	Natal boys OR (95% CI)	Natal girls OR (%CI)
Age at intake	1.65 (1.12–2.44)**	1.90 (1.10–3.30)*	1.98 (.88–4.49) NS
Childhood role transition	5.06 (1.61–15.87)**	22.43 (2.69–187.07)**	1.85 (.27–12.87) NS
GII cognitive	1.68 (1.21–2.34)**	1.55 (1.06–2.28)*	2.04 (1.02–4.09)*
GII affective	1.19 (1.02–1.38)*	1.10 (.91–1.33) NS	1.47 (1.05–2.07)*
GIQ	2.47 (.75–8.16) NS	7.01 (1.17–42.01)*	.40 (.05–3.49) NS

Note: GII = Gender Identity Interview; GIQ = Gender Identity Questionnaire; OR = odds ratio.  
\* $p < .05$ , \*\* $p < .01$ .

transitioned for the 2 gender related CBCL items combined (mean = 3.91 versus mean = 2.88, respectively;  $t [61.50] = -6.15, p < .001$ ); the cognitive scale of the GIIC (mean = 2.64 versus mean = 0.95, respectively,  $t [74] = -2.74, p = .008$ ), and a borderline significance for the total score of the GIIC (mean = 12.64 versus mean = 9.45, respectively,  $t [74] = -1.99, p = .051$ ), but not for the gender related TRF item, the affective scale of the GIIC or the GIQ.

For natal females, 62% of the variability in the persistence of GD was accounted for by cognitive and affective responses to the GIIC. Once these variables were entered, none of the other predictors contributed unique variance to persistence. Cognitive and affective responses to the GIIC explained 15% each of the unique variability in persistence of GD.

#### Adolescent Reports

*Gender Identity and Body Image.* Adolescents' reports of GD and body image were compared across persisters and desisters (Table 4), and showed that persisters reported more GD than desisters in the mean total scores of both the GIIC and the UGDS. Clinically, for the GIIC, scores of less than 3 indicate GD;<sup>16</sup> 87.2% of the persisters met the criterion compared to 0% of the desisters. For the UGDS, scores of more than 40.0 indicate GD (Steensma, Kreukels, Jürgensen, Thyen, de Vries and Cohen-Kettenis, unpublished material, 2013); 97.9% of the persisters met the criterion compared to 2.2% of the desisters (1 bisexual, natal girl). As for body image, the persisters reported more body dissatisfaction for primary and secondary sex characteristics and neutral body characteristics, than the desisters. There were no main effects for sex or significant interactions between sex and persistence for GD or body image.

*Sexual Orientation.* Table 5 shows sexual orientation percentages for persisters, desisters

and the 2 groups combined. Persisters were more likely to report a sexual orientation toward their natal sex across each of the indicators of sexual orientation: attraction ( $\chi^2 [2] = 43.16, p < .001$ ), fantasy ( $\chi^2 [2] = 45.95, p < .001$ ), behavior ( $\chi^2 [2] = 56.81, p < .001$ ), and identity ( $\chi^2 [2] = 47.69, p < .001$ ) compared to the desisters.

Among desisters, natal boys were more likely to report same sex attractions ( $\chi^2 [2] = 9.94, p < .05$ ), fantasy ( $\chi^2 [2] = 11.76, p < .05$ ), and identity ( $\chi^2 [2] = 16.26, p < .001$ ), but not behavior, than natal girls. Within the group of persisters, there were no significant differences between natal boys and girls on any indicator of sexual orientation.

## DISCUSSION

The present study aimed to identify associated factors with the persistence of GD into adolescence, and to assess the current feelings of GD, body image, and sexual orientation. Our findings regarding the gender identity of the adolescents were in line with the earlier findings; the persisters reported higher intensities of GD, more body dissatisfaction, and higher reports of a same-sex sexual orientation compared to the desisters.<sup>3,4</sup> As for the factors associated with the persistence of GD, we replicated the earlier findings on the link between the intensity of GD in childhood and persistence of GD,<sup>3,4,5</sup> showed that the chance of persisting was greater in natal girls with GD than in boys,<sup>3</sup> and that psychological functioning and the quality of peer relations did not predict the persistence of GD.<sup>5</sup> In addition to this, we found that formerly nonsignificant (age at childhood assessment) and unstudied factors (cognitive and/or affective gender identity responses on the GIIC and a social role transition) were associated with the persistence of GD. Furthermore, our multivariate model revealed that the factors associated with the persistence of GD were different between natal sexes.

**TABLE 4** Mean Scores on the Gender Identity Measures and the Body Image Scale (BIS) in Adolescence

Natal Sex	Persistence			Desistence			Persisters vs. Desisters <sup>b</sup>		
	All (n = 47)	Boys (n = 23)	Girls (n = 24)	All (n = 46)	Boys (n = 31)	Girls (n = 15)			
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	F	df	p
GIIAA									
Total score	2.65 (.33)	2.62 (.34)	2.69 (.32)	4.33 (.35)	4.35 (.34)	4.28 (.39)	510.78	1, 89	.001
BIS <sup>a</sup>									
Primary	3.84 (.66)	3.82 (.65)	3.86 (.68)	2.21 (.70)	2.14 (.66)	2.34 (.78)	117.09	1, 88	.001
Secondary	2.79 (.64)	2.75 (.70)	2.82 (.59)	2.24 (.65)	2.24 (.67)	2.23 (.63)	15.43	1, 88	.001
Neutral	2.56 (.62)	2.71 (.63)	2.42 (.59)	2.09 (.63)	2.05 (.61)	2.16 (.70)	11.53	1, 88	.001
UGDS-M									
Total score	—	52.22 (5.54)	—	—	13.48 (3.11)	—	—30.18	32.18	.001
UGDS-F									
Total score	—	—	53.79 (5.01)	—	—	23.00 (10.23)	—10.87	18.27	.001

Note: UGDS-F = Utrecht Gender Dysphoria Scale for females; UGDS-M = UGDS for males.

<sup>a</sup>For 1 persister, a natal boy, the Body Image Scale was not available, n = 46 for persisters and n = 22 for persister boys.

<sup>b</sup>For the Gender Identity Interview for Adolescents and Adults (GIIAA) and BIS domains, there were no significant differences between boys and girls, or an interaction for Status (Persistence/Desistence) × Sex.

With regard to the predictive factors for persistence, we expected to observe differences between natal boys and girls. To date, several studies on children with GD showed that girls who are referred to gender identity services generally present a greater level of gender-variant behavior<sup>9,10,13</sup> and are generally older in age at the time of referral than boys.<sup>13</sup> Furthermore, visual inspection of the demographic characteristics of our sample (Table 1) indeed indicates that girls had a higher age at referral, a greater percentage who fulfilled a childhood GID diagnosis, and partial transitioning among the majority of girls (irrespective of a later persistence or desistence) at the time of referral, compared to boys. It seems therefore conceivable that the differences in childhood presentation of boys and girls with GD resulted in different factors being associated with persistence of GD, which may have implications for a different approach in the clinical management of boys and girls with GD. For natal boys, gender-variant behaviors, their gender role presentation, and parent reports on the intensity of gender role behaviors provide important indicators of the child's desires and future development. However, because the role of parental report on gender-variant behaviors and surface behaviors such as gender role transitioning, are of less value in predicting a future persistence of GD in girls, it seems important to provide extra focus on girls' own experiences of cross-gender identification and wishes.

Although the relative value of the factors associated with the persistence of GD differed between

the natal boys and girls, a central and shared predictor for persistence for both boys and girls in our model included the cognitive responses to the GIIC. When asked with what sex they identified ("Are you a boy or a girl?"), children who expressed cross-gender identification had a greater chance of persisting GD. This seems to be in concordance with the underlying motives reported by the persisters and desisters in the qualitative study by Steensma *et al.*<sup>2</sup> Persisters indicated that they believed that they were the "other" sex, and the desisters indicated they wished they were the "other" sex; this difference may also underlie our finding of a higher report of cognitive cross-gender identification in the persisters than in the desisters; either they experience an alternative gender identification, or they interpreted the question differently. Nonetheless, explicitly asking children with GD with which sex they identify seems to be of great value in predicting a future outcome for both boys and girls with GD.

Childhood social transitions were important predictors of persistence, especially among natal boys. Social transitions were associated with more intense GD in childhood, but have never been independently studied regarding the possible impact of the social transition itself on cognitive representation of gender identity or persistence. As we previously indicated, the percentage of transitioned children is increasing and seems to exceed the percentages known from prior literature for the persistence of GD,<sup>20</sup> which could result in a larger proportion of children who have to change back to their original gender role, because

**TABLE 5** Percentage of Sexual Orientation for Desisters, Persisters, and Combined

Group/Sexual Domain	Attraction		Fantasy		Behavior		Sexual Identity	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Desistence/natal sex, n	29	14	29	11	22	9	31	15
Other sex, %	34.5	85.7	24.1	81.8	63.6	100.0	22.6	80.0
Both sexes, %	24.1	7.1	37.9	18.2	22.7	0.0	41.9	20.0
Same sex, %	41.4	7.1	37.9	0.0	13.6	0.0	35.5	0.0
Persistence/natal sex, n	23	24	21	24	17	20	23	24
Other sex, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Both sexes, %	4.3	4.2	0.0	4.2	0.0	0.0	8.7	4.2
Same sex, %	95.7	95.8	100	95.8	100	100	91.3	95.8
Combined/natal sex, n	52	38	50	35	39	29	54	39
Other sex, %	19.2	31.6	14.0	25.7	35.9	31.0	13.0	30.8
Both sexes, %	15.4	5.2	22.0	8.6	12.8	0.0	27.8	10.2
Same sex, %	65.4	63.2	64.0	65.7	51.3	69.0	59.3	59.0

*Note: The domain sexual behavior was assessed by asking about kissing because we expected that many of the adolescents would not have had sexual intercourse.*

of desisting GD, accompanied with a possible struggle<sup>2</sup>; or it may, with the hypothesized link between social transitioning and the cognitive representation of the self, influence the future rates of persistence. Future prospective follow-up studies on children with GD, where cognitive markers and specific indicators of social transitioning are incorporated, may shed more light on this question. Until there is more knowledge about this mechanism, and because the clinical management of children with GD in general should not be aimed to block gender-variant behaviors,<sup>21</sup> the proposed approach regarding social transitioning in the Standards of Care of the World Professional Association for Transgender Health (WPATH) seems to be best fitting:

Mental health professionals can help families to make decisions regarding the timing and process of any gender role changes for their young children. They should provide information and help parents to weigh the potential benefits and challenges of particular choices ...<sup>22</sup>

In conclusion, factors associated with persistence appear to vary among natal boys and girls.

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