Ethical dilemmas and decision-making in the healthcare for transgender minors

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PART 2

Medical decision-making competence

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Assessing medical decision-making competence in transgender minors

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ABSTRACT

Background: According to international transgender care guidelines, an important prerequisite abstract for puberty suppression (PS) is transgender adolescents' competence to give informed consent (IC). In society, there is doubt whether transgender adolescents are capable of this, which in some countries has even led to limited access to this intervention. Therefore, this study examined transgender adolescents' medical decision-making competence (MDC) to give IC for starting PS in a structured, replicable way. Additionally, potential associated variables on MDC, such as age, intelligence, sex, psychological functioning, were investigated.

Methods: A cross-sectional semistructured interview study with 74 transgender adolescents (aged 10-18 years; 16 birth-assigned boys, 58 birth-assigned girls) within two Dutch specialized gender identity clinics was performed. To assess MDC, judgements based on the reference standard (clinical assessment) and the MacArthur Competence Assessment Tool for Treatment (MacCAT-T), a validated semistructured interview, were used.

Results: Of the transgender adolescents, 93.2% (reference standard judgements; 69 of 74) and 89.2% (MacCAT-T judgements; 66 of 74) were assessed competent to consent. Intermethod agreement was 87.8% (65 of 74). Interrater agreements of the reference standard and MacCAT-T-based judgements were 89.2% (198 of 222) and 86.5% (192 of 222), respectively. IQ and sex were both significantly related to MacCAT-T total score, whereas age, level of emotional and behavioural challenges, and diagnostic trajectories duration were not.

Conclusions: By using the MacCAT-T and clinicians' assessments, 93.2% and 89.2%, respectively, of the transgender adolescents in this study were assessed competent to consent for starting PS.

INTRODUCTION

In December 2020, the High Court of Justice in London ruled that, in the United Kingdom, transgender minors aged ≤15 years are highly unlikely to fully understand the long-term effect of puberty suppression (PS; using gonadotropin-releasing hormone analogues (GnRHa)) and to give informed consent (IC) (Dyer, 2020b). Other countries and states have considered or applied similar age-based restrictions in access to this care as well (Walch et al., 2021). However, evidence regarding transgender minors' medical decision-making competence (MDC) was lacking until now. To our knowledge, the current study is the first to present empirical outcomes of assessment of transgender minors' MDC.

Transgender people have a feeling of discrepancy between their birth-assigned sex and gender identity (World Health Organization, 2022). In this article, the term '(birth-assigned) sex' is used for an anatomic or chromosomal determination, as opposed to gender, which refers to an internal sense of self as man, woman, another gender or no gender. When puberty starts, transgender minors have to deal with body changes they abhor. In the 1990s, the Dutch introduced treatment with PS, which allows transgender adolescents to further mature and accrue life experience before decisions are made regarding successive gender-affirming medical treatment (GAMT) with permanent physical changes (Cohen-Kettenis, Steensma, & de Vries, 2011; Delemarre-Van De Waal & Cohen-Kettenis, 2006; Hembree et al., 2017).

In the Netherlands, transgender adolescents undergo a diagnostic trajectory, including a psycho-diagnostic assessment and several monthly sessions with a mental health provider over a longer period of time (usually ~6 months), when assessing eligibility for PS. PS at early stages of puberty improves psychological functioning and ameliorates general functioning, and physical outcome may be better (Anacker et al., 2021; de Vries et al., 2011a; van der Miesen, Steensma, de Vries, Bos, & Popma, 2020). As far as currently known, the effects of this treatment are fully reversible when discontinued (Hembree et al., 2017). However, there are worries about the impact of PS on physical, cognitive, and psychosocial development and the capability of making decisions about this treatment with profound implications (e.g., regarding fertility) at this young age (Anacker et al., 2021; Chen et al., 2020; Kreukels & Cohen-Kettenis, 2011). Minors' MDC for interventions is a major issue in paediatric ethics. Therefore, according to the international guidelines, one of the criteria for transgender adolescents to start PS is having sufficient mental capacity to give IC (Coleman et al., 2012; Hembree et al., 2017). Of note, GnRHa are standard of care for treatment for children with precocious puberty (Carel et al., 2009).

Minors are a protected population and, in most circumstances, not accorded the legal right to consent. Local jurisdictions determine age limits for minors' alleged MDC, which vary widely between countries (Hein et al., 2012; Stultiëns, Dierickx, Nys, Goffin, & Borry, 2007). Research reveals that minors who have not yet reached the legally set age for MDC often have the mental capacity to understand the implications of a decision (Hein et al., 2014). In contrast, minors may differ from adults by not yet having developed stable long-term goals in life and basing their decisions on values that might change (Cohen & Cohen, 1996).

Additionally, minors are not as likely as adults to consider the benefits and risks associated with a decision (Halpern-Felsher & Cauffman, 2001). In our study, to deal with discrepancies between local laws and international jurisdictions, we focused on adolescents' decision-making competence or capacity for giving consent regarding the decision to start treatment with PS, regardless of the legal age to give IC (alone or together with their parents). In the context of our study, legally, parents have to give consent when the child is aged <12 years; between the ages of 12 and 15 years, parents and child both have to give consent; and at age ≥16 years, the child is allowed to give consent independently.

MDC describes the capacities needed for making an autonomous medical decision (Grisso, Appelbaum, & Hill-Fotouhi, 1997). To reach MDC, a person needs to fulfil four criteria: (1) understand the information relevant to one's condition and the proposed treatment; (2) appreciate the nature of one's circumstances, including one's current medical situation and the underlying values; (3) reason about benefits and potential risks of the options; and (4) be able to express a choice (Appelbaum & Grisso, 1988). MDC is relative to a specific task and context. It is one of the three prerequisites for giving a valid IC, next to being well-informed and without coercion (Beauchamp & Childress, 2008; Grisso & Appelbaum, 1995).

In paediatric daily practice, MDC is generally assessed implicitly and in an unstructured way, which may lead to inconsistencies (Appelbaum, 2007). A study in which researchers reviewed 23 existing measures reveals that the MacArthur Competence Assessment Tool for Treatment (MacCAT-T) has the most empirical support for assessing MDC (Dunn, Nowrangi, Palmer, Jeste, & Saks, 2006; Grisso et al., 1997; Kim, Caine, Currier, Leibovici, & Ryan, 2001; Kim et al., 2007). The MacCAT-T proved reliable in assessing mental competence in adult patients with dementia, schizophrenia, and other psychiatric conditions (Cairns et al., 2005; Owen et al., 2008; Palmer et al., 2005).

The cognitive, emotional, and social abilities of minors develop over time and so do their decision-making capacities (Hein et al., 2012). Age is often considered to be the best determinant for assessing MDC (Dorn, Susman, & Fletcher, 1995). Some research reveals that 12 years is a common age to reach MDC (Billick, Burgert 3rd, Friberg, Downer, & Bruni-Solhkhah, 2001). Other research reveals that minors <12 years of age may be capable of making well-considered decisions and that minors from the age of nine years are capable of understanding the issues involved in clinical trials (Billick, Edwards, Burgert, & Bruni, 1998; Mårtenson & Fägerskiöld, 2008). Contributing factors for MDC are intelligence and psychological functioning (Dorn et al., 1995; Grisso, & Appelbaum, 1998). People with limited cognitive capacities may have more difficulty understanding information (Grisso, & Appelbaum, 1998). Research suggests that psychiatric conditions and psychopathology might impair MDC (Cairns et al., 2005; Owen et al., 2008; Palmer et al., 2005).

Little research exists regarding minors' MDC (Hein et al., 2015d). Specifically, there is no empirical evidence on transgender adolescents' MDC to decide on PS. In clinical practice and policy making, age standards prescribed by law may have too much influence on the clinicians' assessments (Hein et al., 2015d). In addition, clinicians' assessments of MDC are influenced by their personal subjective views of what is in the adolescent's best interest (de Vries, Wit, Engberts, Kaspers, & van Leeuwen, 2010). The right balance needs to be struck between respecting transgender adolescents' autonomy and protecting adolescents who are not fully capable of making these decisions themselves (Appelbaum, 2007).

To fill the gaps in knowledge regarding transgender adolescents' MDC, in this cross-sectional semistructured interview study, we aimed to answer the following questions:

1. Are transgender adolescents competent to give IC for starting PS, according to the standard IC procedure and the MacCAT-T?
2. What is the intermethod agreement between MDC judgements based on the standard IC procedure and the MacCAT-T?
3. What is the interrater agreement regarding MDC judgements between raters using the standard IC procedure and the MacCAT-T?
4. To what extent are age, intelligence, psychological functioning, duration of the diagnostic trajectory, sex, and family situation associated with transgender adolescents' MDC regarding starting PS?

METHODS

Participants

Participants were transgender adolescents visiting the Centre of Expertise on Gender Dysphoria of the Amsterdam University Medical Centres, Location VUmc in Amsterdam, the Netherlands, between January 1, 2016, and December 31, 2017, or visiting the gender-identity clinic of Leiden University Medical Centre, Leiden University Medical Centre Curium, in Leiden, the Netherlands, between March 1, 2017, and December 31, 2017. The researchers identified the adolescents who were about to start PS through the medical files, and the adolescents and their parents were invited by the involved clinician to participate. The study protocol was approved by the institutional review boards of the participating institutions. Written information was provided, and signed IC for participation was obtained from all participants and their parents.

All adolescents visiting the clinics were eligible for study participation; there was no selection process. Not speaking Dutch and being cisgender were exclusion criteria. In this study, no distinction was made in describing the gender identity of the participants other than being transgender. The adolescents who participated in the study were, as recommended by the Standards of Care, at least at Tanner stage 2 (Coleman et al., 2012). The clinics' protocols use PS until age 17 years to prepare for more definite affirming treatment by hormones and, in some individual cases, >17 years when creating rest and time for further gender-identity exploration are indicated. Seventy-four adolescents participated, whereas 206 eligible adolescents were not reached or did not want to or could not participate (figure 2). There were no significant differences between the participating and non-participating adolescents with regard to demographics (table 4).

Figure 2. Flowchart of adolescent participation

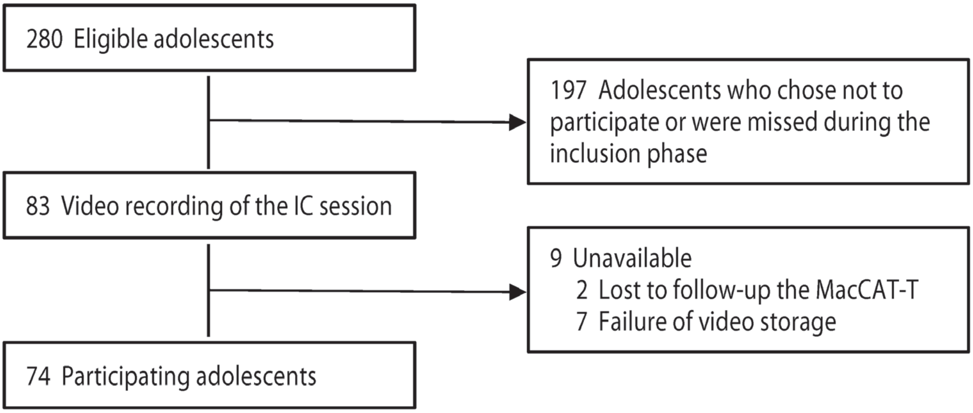

Table 4. Comparison of characteristics of participating and non-participating adolescents MacCAT-T

Variables	Participating adolescents	Non-participating adolescents	*p*-value
Age (in years)			.09
n	73[a]	206	
M	14.71	15.18	
Range	10.63 - 18.34	10.10 - 18.36	
Total IQ			.65
n	70[b]	195[c]	
M	100.21	99.17	
Range	66 - 144	61 - 144	
Sex, *n* (%)			.39
Birth-assigned girl	58 (78.4)	151 (73.3)	
Birth-assigned boy	16 (21.6)	55 (26.7)	
CBCL's total problem *T*-score			.25
n	57[d]	183[e]	
M	60.42	58.78	
Range	42 - 77	34 - 80	
Duration of diagnostic trajectory (in months)			.43
n	73[a]	206	
M	9.55	10.29	
Range	4 - 26	3 - 59	
Family situation, *n* (%)			.16
With both parents	39 (52.7)	128 (62.1)	
Other	35 (47.3)	78 (37.9)	

Age refers to age at the informed consent session; total IQ refers to full-scale intelligence quotient; CBCL refers to Child Behaviour Checklist.

[a] Date of starting with puberty suppressing treatment was unknown for one participating adolescent.

[b] Total IQ was missing of four participating adolescents.

[c] Total IQ was missing of 11 non-participating adolescents.

[d] CBCL's total problem *T*-score was missing of 17 participating adolescents.

[e] CBCL's total problem *T*-score was missing of 23 non-participating adolescents.

Measures

Demographics

Adolescents' demographic characteristics obtained from the medical files were date of birth, sex, family situation, date of the first contact at the clinic, and date of the IC session. Family situation was categorized into (1) living with both parents and (2) other.

Medical decision-making competence

The MacCAT-T is a quantitative, semistructured interview used to assess the four MDC criteria and takes 15 to 20 minutes (Grisso et al., 1997; Appelbaum & Grisso, 1988). In this study, the Dutch version modified for children and adolescents was used (Hein et al., 2015c). In the current study, the disclosure of information was adapted to treatment with PS for transgender adolescents (Grisso et al.,1997; Hein et al., 2012; Hein et al., 2015d). Examples of interview-questions are "what would be possible consequences if you would choose to undergo this intervention, and what if you would not?". The tool provides a total score and subscale scores for each of the four MDC criteria. An overall cut-off score for MDC is not provided. The assessor weighs the subscale scores, along with contextual information (e.g., substantial risks of treatment, far-reaching consequences, and whether there is support of caregivers), and judges MDC in each individual case. Recent research revealed that the four MDC criteria constitute a continuum or single trait in children (Hein et al., 2014).

Full-scale intelligence quotient

The full-scale intelligence quotient (IQ) was assessed by the Dutch Wechsler Intelligence Scale for Children in adolescents aged ≤16 years and by the Dutch Wechsler Adult Intelligence Scale in adolescents aged >16 years (Wechsler, 1997; Wechsler, 2005).

Child Behaviour Checklist

The parent-reported Child Behaviour Checklist (CBCL) was used to assess behavioural and emotional difficulties (Achenbach & Rescorla, 2001; Verhulst & van der Ende, 2013). The total-problem *T*-score was calculated as age standardized measure of total behavioural and emotional difficulties.

Procedures

Both gender identity clinics that participate in the study follow the Standards of Care and the Endocrine Society clinical practice guideline (Coleman et al., 2012; Hembree et al., 2017). The diagnostic trajectory, which is spread over a longer period of time, concludes with a session for signing a printed IC statement by adolescents and parents. This standard IC session was videotaped and used to establish the reference standard for MDC in this study (see below), similar to previous studies.16,35 After the IC session, the MacCAT-T interview was administered by one of the researchers, which was also videotaped, to provide the MacCAT-T-based judgements of MDC.

A panel of 12 experts (including child psychiatrists, paediatric endocrinologists, child psychologists, and master thesis medical students) was trained in judging MDC on the basis of the four criteria, which are currently considered the generally accepted reference standard (Carney, Neugroschl, Morrison, Marin, & Siu, 2001; Etchells et al., 1999; Hein et al., 2014; Kim et al., 2001).

Reference standard

Of each IC video, three MDC judgements were performed: two by experts and one by the clinician involved in the diagnostic trajectory. These judgements were used for establishing the reference standard.

MacArthur Competence Assessment Tool for Treatment (MacCAT-T)

Each MacCAT-T video was also judged by three different experts, who rated the subscale scores, total score, and their MDC judgement. These assessments were used for the MacCAT-T-based judgements. The experts received the videos in random order, blinded to other judgements or adolescents' characteristics.

Statistical analyses

All statistical analyses were performed by using SPSS, version 26 (IBM Corporation, 2019). Both for the reference standard and MacCAT-T-based judgements, MDC was considered present when at least two out of three judgements were positive (Hein et al., 2015d).

The proportion of adolescents assessed positive on MDC was described as a raw percentage. The correlation between the reference standard and MacCAT-T-based judgements, as a measure of intermethod agreement, was also described as a raw percentage. Interrater agreement of the three reference standard and three MacCAT-T-based judgements, which is the overall percentage of mean fractions of agreement between the three raters, were calculated as raw percentages.

To discern potential associations between MacCAT-T total-scale scores and our main variables of interest (age, intelligence, CBCL total-problem *T*-score, and duration of the diagnostic trajectory), demographic characteristics were identified as relevant control variables (e.g., gender, family situation, and clinic location) as a first step. Second, multiple linear regression was used to identify variables correlated to the MacCAT-T total scores with pairwise deletion of missing variables.

RESULTS

Baseline characteristics

Participants' baseline characteristics are listed in table 5.

Table 5. Descriptive statistics for characteristics of the participants

Variables	Birth-assigned boys	Birth-assigned girls	Total	*p*-value
Age (in years)				.15
n	16	58	74	
M	14.02	14.87	14.69	
Range	12.02 - 17.11	10.63 - 18.34	10.63 - 18.34	
Total IQ				.82
n	15	55	70[a]	
M	99.47	100.42	100.21	
Range	82 - 131	66 - 144	66 - 144	
CBCL's total problem *T*-score				.91
n	13	48	61[b]	
M	60.62	60.94	60.87	
Range	44 - 72	42 - 77	42 - 77	
Percentage in clinical range (%)[c]	38.5	43.7	42.6	0.73
Duration of diagnostic trajectory (in months)				.64
n	16	58	74	
M	9.25	8.69	8.81	
Range	4 - 18	2 - 26	2 - 26	
Family situation, *n* (%)				.71
With both parents	8 (50.0)	32 (55.2)	40 (54,1)	
Other	8 (50.0)	26 (44.8)	34 (45.9)	

Age refers to age at the informed consent session; total IQ refers to full-scale intelligence quotient; CBCL refers to Child Behaviour Checklist.

[a] Total IQ was missing of four participants.

[b] CBCL total-problem *T*-score was missing of 13 participants.

[c] Clinical range: $t \geq 64$ (Achenbach & Rescorla, 2001).

Medical decision-making competence

After the reference standard and MacCAT-T-based judgements, respectively, 93.2% (69 of 74) and 89.2% (66 of 74) of the adolescents were positive on MDC regarding starting PS. Table 6 shows characteristics of participants who were judged not competent.

Table 6. Characteristics of participants judged not competent using the reference standard and/or MacCAT-T

Participant	Assigned sex	Reference standard	MacCAT-T	Age (in years)	Total IQ	Duration of diagnostic trajectory (in months)
1	Female	Incompetent	Incompetent	12	69	7
2	Male	Incompetent	Incompetent	12	84	10
3	Female	Competent	Incompetent	11	93	15
4	Male	Competent	Incompetent	13	Missing	5
5	Male	Competent	Incompetent	12	96	12
6	Female	Competent	Incompetent	12	79	8
7	Female	Competent	Incompetent	17	66	10
8	Female	Competent	Incompetent	11	79	10
9	Female	Incompetent	Competent	11	Missing	7
10	Male	Incompetent	Competent	12	101	8
11	Female	Incompetent	Competent	10	110	13

Age refers to age at the informed consent session; total IQ refers to full-scale intelligence quotient.

Intermethod agreement

The reference standard and MacCAT-T-based judgements correlated in 87.8% (65 of 74) of the cases (table 7).

Table 7. Percentage competent / incompetent according to the reference standard based judgements and the MacCAT-T based judgements of transgender adolescents' medical decision-making competence

	MacCAT-T (*n* = 74)		
Reference standard (*n* = 74)	**Competent**	**Incompetent**	**Total**
Competent (*n*)	85.1% (63)	8.1% (6)	69
Incompetent (*n*)	4.1% (3)	2.7% (2)	5
Total	66	8	74

MacCAT-T refers to MacArthur Competence Assessment Tool for Treatment.

Interrater agreement

The interrater agreement of the reference standard and MacCAT-T-based judgements for the three experts were 89.2% (198 of 222) and 86.5% (192 of 222), respectively.

Variables related to MacCAT-T scores

Sex was significantly associated with MacCAT-T score ($t[72] = -3.045$; $p = .003$); birth-assigned girls showed a higher total score. Both family status and clinic location were not significantly associated with MacCAT-T score. Therefore, a multiple linear regression analysis was conducted with only sex as control variable and age, intelligence, psychological functioning, and duration of the diagnostic trajectory as the main variables of interest, with the MacCAT-T score as the dependent variable. Table 8 shows the results of the multiple linear regression analysis. A significant regression equation was found ($F(5,52) = 3.685$; $p = .006$). Sex and full-scale intelligence quotient (IQ) are both significantly related to the MacCAT-T score when each one was corrected for the other three variables (respectively, $\beta = 3.636$; $t(52) = 2.685$; $p = .010$; and $\beta = 0.088$; $t(52) = 2.381$; $p = .02$). Age at the IC session, CBCL total-problem *T*-score and duration of the diagnostic trajectory were not significantly correlated.

Table 8. Multiple linear regression analysis comparing the effect of age, full-scale intelligence quotient, psychological functioning, duration of the diagnostic trajectory associated and sex with the MacCAT-T score

			95% Confidence Interval for B	
	B	***p*-value**	**Lower bound**	**Upper bound**
Step 1:				
Constant	29.177	-	24.211	34.142
Sex	3.636	.01*	0.923	6.348
Step 2:				
Constant	18.560	-	4.977	32.143
Age	0.476	.08	-0.056	1.008
Total IQ	0.088	.02*	0.014	0.161
CBCL’s total problem *T*-score	-0.080	.19	-0.201	0.040
Duration of diagnostic trajectory	0.056	.67	-0.210	0.322

Age refers to age at the informed consent session; total IQ refers to full-scale intelligence quotient; CBCL refers to Child Behaviour Checklist; ‘-’ refers to not applicable.
* *p*-value <.05

DISCUSSION

The current study revealed that 93.2% and 89.2% of the transgender adolescents who were about to start PS and were participating in this study were competent to give IC on the basis of the standard clinical assessment and when using the MacCAT-T interview, respectively. This is a reassuring finding, which reveals that guidelines that require understanding the pros and cons of the treatment and capacity for IC for starting PS are followed for these participants (Coleman et al., 2012; Hembree et al., 2017). This study was performed after several sessions with adolescents and parents aimed at obtaining understanding of the consequences of PS, including not only the short-term, with regard to suppression of further feminization or virilization, but also long-term considerations of bone development, surgical options, and fertility (Di Ceglie, 2018).

This study further looked into several variables potentially associated with MDC. Of the examined variables, higher full-scale intelligence quotient (IQ) and sex (birth-assigned girls) were associated with higher MacCAT-T scores. The association of a higher intelligence with MDC is in line with other research (Hein et al., 2015c; Miller, Drotar, & Kodish, 2004). The birth-assigned girls in our study might have had a more advanced puberty compared with the birth-assigned boys, which might be related to a deeper understanding of the consequences of PS (Koerselman & Pekkarinen, 2017). Contrary to our expectations and earlier research, age was not correlated to MacCAT-T scores in this study. Although the participants seem like a representative sample, it may be too homogeneous, with regard to age, to detect a significant effect because the sample included few participants aged ≤11 years. Most research suggests that MDC is reached little before the age of 12 years (Billick et al., 1998; Hein et al., 2014; Mårtenson & Fägerskiöld, 2008). Finally, no association between MDC and duration of the diagnostic trajectory, and between MDC and behavioural and/or emotional difficulties was found. This finding was also against our expectation because psychological difficulties can interfere with MDC. However, one of the criteria for starting PS applied at the Dutch gender identity clinics is ‘having no interfering psychosocial difficulties’ (Coleman et al., 2012; Hembree et al., 2017). Therefore, by protocol, adolescents with severe psychosocial difficulties might have been referred for appropriate treatment before deciding on PS.

The results of this study confirm the feasibility of the Dutch version of the MacCAT-T for children and adolescents in assessing transgender adolescents’ MDC; the interrater agreement of the reference standard and MacCAT-T-based judgements were both high (respectively, 89.2% and 86.5%). Furthermore, the results of this study offer first indications of validity of the MacCAT-T for judging transgender adolescents’ MDC (intermethod agreement was 87.8%), and the MacCAT-T could therefore be used in clinical practice when MDC assessment is difficult. The MacCAT-T should not necessarily replace (a part of) the usual implicit assessment of MDC. However, in individual cases of doubt on MDC, the MacCAT-T could be used as a structured tool to underpin MDC assessment more objectively. Therefore, the tool will not be a barrier for access to care but can be used for due diligence. In the MacCAT-T, contextual information is weighted in the assessment, which may include parental support. It is expected that these results will be generalizable to other clinics because findings are in line with other research on the use of the MacCAT-T in minors (e.g., in a population deciding on predictive genetic testing, in minors with HIV infection, and in a sample of adolescents with psychiatric conditions) (Chenneville et al., 2014; Hein et al., 2015d; Mandarelli et al., 2017). Findings regarding the age for established MDC are congruent.

Although the study results reveal that most adolescents are considered competent to give IC for starting PS, nevertheless 6.8% to 10.8% are not, respectively, reference standard-based and MacCAT-T based. In all of these 11 adolescents assessed incompetent, except for one, the involved clinician had no doubts about the MDC. Possibly, the more positive judgement by these clinicians may be explained by their judgement on the basis of several sessions and not on a single assessment. In the one adolescent that was assessed incompetent by the involved clinician, the clinician added that she considered the adolescent's mother competent to give (proxy) consent. So, in cases in which there is doubt regarding adolescents' MDC, clinicians may more heavily depend on the parents' IC (Giordano et al., 2021). Subsequently, time on PS could more explicitly be used to prepare MDC for treatment with lasting effects of gender-affirming hormones (GAH).

This is in line with statements in a recent qualitative study that the best interest for an individual should be taken into account when deciding whether to start PS (Vrouenraets et al., 2015). Other research reveals also that MDC assessment is regularly influenced by the clinicians' ideas of what is in the child's best interest (de Vries, de Wit, Engberts, Kaspers, & van Leeuwen, 2010). This might mean that some clinicians start PS in transgender adolescents who are assessed incompetent to consent on the basis of the principle of best interest.

In addition, the results of the current study do not answer questions on how to respect the developing autonomy of incompetent adolescents ethically. In the aforementioned qualitative interview study, some clinicians stated that transgender minors should at least partially depend on their parents to make decisions regarding PS (Vrouenraets et al., 2015). It could be that the parents' role and responsibility should be more pronounced when an adolescent is deemed incompetent to consent (Giordano et al., 2021).

Of note, the focus of this study was not on the putative association between MDC and having no regrets later in life about the decision to start PS. Competent transgender adolescents who begin PS may still potentially have regrets about the decision.

There are strengths and limitations to the current study. The study's standardized nature provided a reproducible and interrater-reliable method for assessing MDC in transgender adolescents who were about to start PS. Nevertheless, because of the study's design to only include adolescents who were about to start PS after a diagnostic trajectory, the sample contained relatively few adolescents aged <12 years, with low intelligence, showing serious (interfering) psychiatric conditions or psychopathology, and relatively few birth-assigned boys. Additionally, adolescent's Tanner stage was not investigated in this study as a potential associated variable on MDC. Furthermore, on the basis of the current results, one cannot conclude with certainty whether the exploration and explanation during the diagnostic trajectory is essential in helping the transgender adolescents becoming competent to consent to PS or that MDC was already reached before the diagnostic trajectory.

In future work, researchers should especially focus on transgender adolescents aged <12 years starting this treatment, particularly birth-assigned girls who may benefit from PS as early as nine years of age. Additional research is needed for adolescents with lower intelligence, serious developmental conditions, or psychopathology, for birth-assigned boys, and participants in early stages of puberty. More research is needed regarding the question what to do when an adolescent is incompetent to consent to the treatment; for example, what are the parents' and the involved clinician's role and responsibility in such a situation? In addition, qualitative research focused on the role of MDC in clinical practice and the principle of best interest are encouraged.

CONCLUSION

It is reassuring that the majority of the transgender adolescents participating in this study seem to have thoroughly thought about PS, understand what PS involves, and are deemed competent to decide. However, this might not be similar for all other contexts, particularly because our study cohort had extensive and thorough diagnostic evaluation before the MDC assessment as opposed to adolescents without this support. Additionally, the study results indicate feasibility and validity of the MacCAT-T in clinical practice. Nevertheless, as long as there are only limited data on transgender adolescents' MDC regarding starting PS, an individualized approach is highly important for this group.