

8-1-2022

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Recommended Citation

Schwartz, Beth I.; Efron, Arielle; Bear, Benjamin; Short, Vanessa L; Eisenberg, Julia; Felleman, Sarah; and Kazak, Anne E, "Experiences with Menses in Transgender and Gender Nonbinary Adolescents." (2022). *Department of Obstetrics and Gynecology Faculty Papers*. Paper 89.
<https://jdc.jefferson.edu/obgynfp/89>

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Experiences with Menses in Transgender and Gender Non-Binary Adolescents

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Short Title: Menses in Transgender and Gender Non-Binary Adolescents

Conflict of Interest: The authors have no conflicts of interest relevant to this article to disclose.

Funding Source: This research was supported by internal funding from a Jefferson Pediatric Award for Clinical Research.

Prior Presentation: Some of these data were presented as an oral presentation and poster at the 2021 American Academy of Pediatrics National Conference in Philadelphia, PA in October 2021.

Word Count: 3059

Abstract

Study Objective: To describe menstrual history, associated dysphoria, and desire for menstrual management in transgender male and gender diverse adolescents who were assigned female at birth.

Design: Retrospective chart review.

Setting: Tertiary care children's hospital.

Participants: All patients seen in a multidisciplinary pediatric gender program from March 2015 through December 2020 who were assigned female at birth, identified as transgender male or gender non-binary, and had achieved menarche.

Intervention: None.

Main Outcome Measures: Patient demographics, menstrual history, interest in and prior experiences with menstrual management, parental support and concerns about menstrual management

Results: Of the 129 included patients, 116 (90%) identified as transgender male and 13 (10%) as gender non-binary, with an average age of 15 (SD 1.6) years. Almost all (93%) patients reported menstrually-related dysphoria. The majority (88%) were interested in menstrual suppression. The most common reasons for desiring suppression were achievement of amenorrhea (97%) and improvement in menstrually-related dysphoria (63%).

Conclusions: The majority of gender diverse patients assigned female at birth reported dysphoria associated with menses and desired menstrual suppression. This information can encourage physicians to raise this topic and offer menstrual management for gender diverse patients who experience distress related to menses, especially for those who are not ready for or

do not desire gender-affirming hormonal treatment. Future research is needed to better understand patients' experiences with menses and to determine the optimal menstrual management methods. This could be an important intervention to improve outcomes for this vulnerable population.

Key Words: adolescent; transgender; gender non-binary; gender diverse; gender dysphoria; menses; menstrual management; menstrual suppression; hormonal contraception

Introduction

Transgender and gender diverse youth have an increased incidence of mental health diagnoses, economic marginalization, social isolation, and physical abuse, all of which are associated with increased risk of self-harm, alcohol and drug use, and suicidality.¹⁻⁴ As nomenclature in this field is constantly evolving, we define the terms that will be used for this manuscript. Gender diverse individuals are those whose gender identity and expression is different than that typically associated with the sex they were assigned at birth.¹ Transgender males are those who were assigned female at birth and identify as male. Gender non-binary is an umbrella term for individuals who do not identify as a binary male or female. They may identify as neither gender, both male and female at once, or as different genders at different times.⁵ Gender dysphoria is distress or discomfort caused by the discrepancy between gender identity and sex assigned at birth.⁶

Those who are assigned female at birth and do not identify as female may present to gynecologists or reproductive healthcare providers for multiple reasons, including preventative

care, menstrual issues, contraception, and mental health care, in addition to possible gender-affirming hormone therapy and treatments. Some adolescent or adult transgender male patients request therapeutic amenorrhea,^{7,8} but there is little known about this topic, especially in the pediatric population. While there is known increased dysphoria related to puberty,⁹ there are minimal data on dysphoria associated with menses. One study described mixed attitudes towards menstruation in transmasculine adults,¹⁰ and a qualitative study reported distress due to resumption of bleeding in transgender male adults who stopped gender-affirming hormonal treatment in order to pursue fertility preservation.¹¹ To our knowledge, there are no published reports on gender dysphoria, depression, anxiety, or other psychological symptoms or outcomes related to menses in the adolescent population. In our clinical experience, many transgender and gender diverse adolescents express significant distress related to menarche and menstruation. There is an even greater paucity of information about the experiences and treatment goals of gender non-binary children and adolescents, but there are some data that non-binary youth are at even higher risk of adverse mental health outcomes than their transgender peers.^{12,13} The experience of non-binary individuals who were assigned female at birth and undergo menstruation is unknown. It can be hypothesized that non-binary persons are as similarly distressed by menses as transmasculine or transgender males because they also do not identify as female and thus menses may cause increased gender dysphoria. Conversely, gender non-binary individuals may be more tolerant of menses because they do not identify as male. However, while many transgender males desire gender-affirming hormone therapy with testosterone, which often results in menstrual cessation,¹⁴⁻¹⁸ many gender non-binary patients may not desire or use testosterone.¹⁹ Therefore, knowledge about experiences with menstruation and desire for

menstrual management or suppression in non-binary youth may be even more important to guide long-term treatment options.

Given that most transgender and gender non-binary youth who are assigned female at birth will experience menstruation if puberty is not suppressed prior to menarche, their experiences around menstruation is an important and unexplored topic that may help facilitate conversations about the adolescents' well-being and possible treatment options.²⁰ The objective of this study is to describe the characteristics, menstrual history, associated dysphoria, and desire for menstrual management in gender diverse adolescents and to assess for any differences in characteristics between those who identify as transgender males and those who identify as gender non-binary. These data have the potential to identify gaps in medical treatment and new avenues to improve care for this vulnerable population.

Materials and Methods

This is a retrospective chart review of all patients who identified as transgender or gender non-binary and who were seen by at least one provider at the Nemours Children's Hospital Delaware multidisciplinary Gender Wellness Program (GWP) between March 1, 2015 through December 17, 2020. GWP is a multidisciplinary program. Patients and their parents or guardians are seen for a four-session evaluation by a psychologist to assess mental health, family and community supports, and readiness for medical transition. Patients are then followed by our psychologists for long-term gender-related care or transitioned to providers in the community. All patients are encouraged to see an endocrinologist and gynecologist when they are ready for information about gender-affirming medical treatments, as well as for menstrual management, counseling about fertility and fertility preservation, and reproductive health. A social worker meets with all

patients initially and then as needed to provide support and resources. The GWP team meets regularly to discuss patients at all stages in the process of exploring gender identity and treatments. All new GWP patients are 17 years of age or younger. Once patients have established care, they can be followed by the program through age 20, at which time they are transitioned to adult care.

Gender diverse patients were identified by electronic medical record queries based on a combination of encounter types and diagnosis codes and confirmed by chart review. Inclusion criteria for this study were female sex assigned at birth, transgender male or gender non-binary gender identity, and achievement of menarche. Included patients were seen by at least one of the GWP providers during the study time period. Three patients with other gender identities (two who identified as agender and one as a demi-boy) were excluded due to their very small numbers and because they did not fit into either of the other more well-defined gender identity subgroups.

Data were abstracted from the electronic medical record (EMR) by three investigators using standardized Research Electronic Data Capture (REDCap) electronic data capture forms.²¹ The investigators met regularly as a team with the primary investigator to ensure consistent data collection and resolve questions or discrepancies through consensus. Abstracted data included patient demographics (age, race, ethnicity, insurance, sex assigned at birth, gender identity) and gender-affirming medical history and treatments. Gender identity was reported by patients as with no predefined terms or lists. Information about behavioral health symptoms, psychiatric diagnoses, psychiatric admissions, contacts with a therapist and/or psychiatrist, and use of psychiatric medication, were collected. Psychiatric diagnoses were made by psychologists or psychiatrists using Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria.⁶ Menstrual history (age at menarche, frequency, duration, and flow of menses, menstrual pain and

other associated menstrual symptoms, mood symptoms and dysphoria related to menses), sexual activity, and interest in and prior experiences with menstrual management, including goals for medication use and parental support and concerns about menstrual management, were also abstracted. Menstrual symptoms were considered present if reported by the patient, except for premenstrual dysphoria disorder (PMDD), which has clear diagnostic criteria.⁶ Information about sexual activity was also collected. Patients were considered to be sexually active if they engaged in vaginal or anal intercourse.

Data were entered and managed using a REDCap electronic data capture tool hosted at Nemours Children's Hospital.²¹ Frequency counts and percentages and means and standard deviations were used to describe data for the entire study sample and by gender subgroup (transgender male, gender non-binary). Data were compared between the two gender identity subgroups using two-sample *t*-tests for continuous variables and chi-square and Fisher exact tests for categorical variables. A p-value of <0.05 was considered statistically significant. Statistical analyses were performed using SAS version 9.4.²² This study was approved by the Nemours Children's Health System Institutional Review Board.

Results

During the study period, 199 patients were seen by at least one GWP provider. Of these, 129 (65%) met inclusion criteria for this study (Figure 1). Demographic characteristics and sexual activity history for all patients and by gender identity subgroup are presented in Table 1. Mean age at initial presentation was 15 years (SD 1.6). Almost all patients were white (90%) and non-Hispanic (93%), and the majority (73%) were privately insured.

Only 12 (17%) had ever been sexually active, with only 7 patients currently sexually active and only 5 of these patients engaging in sexual activity that had the biologic potential to result in pregnancy. An additional 6 patients stated that they were considering becoming sexually active in the near future, although only 4 of these subjects intended to engage in vaginal intercourse. All sexually active patients were transgender males. A total of 17 (13%) patients reported a history of sexual abuse, with no patients experiencing current sexual abuse. Two of these patients also reported consensual sexual activity.

Very few patients (n=7, 5%) were using gender-affirming hormones (testosterone) at the time of their first GWP visit. Nearly 90% (n=116) of patients identified as transgender male, and 10% (n=13) identified as gender non-binary. There was a significant difference in age at initial presentation between gender identity subgroups, with gender non-binary patients presenting an average of one year earlier compared to transgender male patients (13.9 vs. 15.1, $P = .009$). There were no other differences in demographics between these subgroups.

Menstrual History

The average age of menarche for all study patients was 11.5 years (SD 1.3) (Table 2). The majority of patients (n=100, 85%) reported regular menstrual cycles. Almost three-quarters of patients had at least one associated menstrual symptom. The most common symptom was menstrual pain or cramping (n=76, 66%), with a variety of other symptoms reported by a small number of patients. Of patients with reported menstrual pain, more than half required use of pain medication during periods. Almost all patients (n=89, 93%) described increased gender dysphoria or distress related to menses. There were no significant differences in any menstrual

characteristics or symptoms between patients identifying as transgender male and those identifying as gender non-binary.

Menstrual Management

One-quarter (n=29, 24%) of patients reported previous use of a menstrual management method (MMM), with 19 (15%) currently using an MMM (Table 3). The most common prior method used was combined oral contraceptive pills (OCPs). Most patients were interested in starting menstrual management (n=107, 88%). Of those who desired menstrual management, almost all (n=104, 97%) patients cited a desire for amenorrhea as the reason for use. In addition, 63% (n=67) of patients stated that reduction in menstrually-related dysphoria was a motivating reason. Only 5 (4%) patients stated that they desired contraception. All of these patients were currently sexually active. In fact, 66 (50%) subjects explicitly stated that their desire for hormonal medication was not for contraception.

Parental Support

Of the 51 patients for whom data were available from the EMR about parental support for menstrual management, almost three-quarters (n=37) of parents were supportive of menstrual management (Figure 2). Only 6 (12%) parents were explicitly not supportive of initiation of MMM, with the remaining 8 (16%) reporting uncertainty or mixed feelings. There were no differences in parental support by gender identity subgroup. Regardless of whether parents voiced support for menstrual management, there were many reported parental concerns about its use. The most common concerns were side effects and long-term effects (Figure 3).

Discussion

This study describes transgender and gender diverse adolescents' experiences with menses. This is an issue that is anecdotally distressing to transgender and non-binary patients who were assigned female at birth and do not identify as female. However, to our knowledge, there are no prior published data on this subject. Many adolescents may desire gender-affirming hormone treatment with testosterone in part to stop menses, but testosterone use may not be appropriate for some patients due to age, parental reluctance, or lack of desire for testosterone.

Our data provide the first evidence that transgender and gender non-binary adolescents are distressed by their periods. Their menstrual history and associated pain and other symptoms are consistent with that of the general adolescent population.²³⁻²⁵ However, our patients report high rates of mood symptoms related to menses and significant gender dysphoria or distress that is caused or exacerbated by their periods. There is a strong desire for menstrual suppression in this population, with a primary goal of achieving amenorrhea. Desire for amenorrhea is different than menstrual goals for the general adolescent population, in which menstrual regulation or improvement is the typical request.²⁶ This is especially important information because many patients are started on combined OCPs for menstrual suppression and this method has lower rates of amenorrhea than other options.²⁷ In addition, given our population's low rates of sexual activity and lack of interest in contraception, methods that have a high likelihood of resulting in amenorrhea may be more desirable to patients than traditional methods that are known to be used for contraception. The information from this study can help providers consider other menstrual management options, although more information is needed to determine the optimal menstrual management methods in this population.

We present data separately for transgender males and gender non-binary patients because we suspect that they are similar but different populations, especially in respect to experiences with menstruation. Although no differences were seen between these subgroups, the small number of patients who identified as non-binary may have obscured any potential differences. There was a significant age difference, with the non-binary group presenting an average of 1 year younger than the transgender group. This may be of no clinical significance, but it also may be due to youth feeling more comfortable coming out as non-binary at an earlier age. Importantly, all the non-binary patients in our study population reported worsened gender dysphoria associated with menses. More research is needed on this subgroup of gender diverse patients, which may especially benefit from qualitative, patient-reported data on this topic.

Given the age of this population, parental knowledge, support, and consent may be major factors in decisions about and initiation of treatment. Our patients' parents were generally supportive of menstrual management or suppression, although they reported some concerns, especially about potential side effects. This is likely higher than the support for use of gender-affirming hormones, especially for younger patients, although there are no data on this topic. Possible reasons for the high acceptability of menstrual management are that many of these methods are familiar to parents for other reasons and are also completely reversible. Further research is needed to explore this topic.

Strengths of this study are the relatively large sample size and the breadth of information available from patients seen at a multidisciplinary gender program. The main limitation of this study is its retrospective nature, which relies on adequate documentation of variables sometimes difficult to extract, and the resultant missing data. While provider EMR templates were used to gather some of this information, there were not standardized questionnaires or tools. For those

patients seen by a gynecologist in the GWP, there was likely more data available about menstrual history and menstrual management than those who were not seen by this specialty. Another limitation is the smaller number of patients for whom information was available in the electronic medical record about parental support and concerns related to menstrual suppression. This is new information that deserves further study. As almost all patients reported significant distress or increased gender dysphoria related to menses, this precluded any analyses of the effects of this factor on overall mental health. Lastly, this study may have limited generalizability. The fact that these patients were all seen in a specialized gender care clinic introduces a selection bias and may overestimate the degree of both gender dysphoria in general and distress related to menses. In addition, the patients who opted to see a pediatric gynecologist may be more distressed by menses and interested in menstrual management, although patients who did not see Gynecology were also included in this study. Our patient population also has limited racial and ethnic diversity. The majority of patients were white, non-Hispanic, and privately insured. As there is no known national demographic information for adolescents who identify as transgender or gender diverse, it is difficult to know whether this information is generalizable to a broader population. However, the demographic composition of our population is significantly different than that of children and adolescents in the surrounding county and state, with a higher proportion of White (90% for our subjects vs. 49% in the county and 52% in the state) and non-Hispanic (93% vs. 86% for both the county and state) individuals in our population compared to these surrounding areas.²⁸ The ways that our population differs from the local community and the reasons for these differences deserve further study.

This study provides new information about a significantly understudied area for the transgender population. These data highlight the importance of providers raising these topics and offering

menstrual management for gender diverse patients who experience distress related to menses, especially for those who are too young, not currently ready for, or do not desire gender-affirming hormonal treatment. Future research is needed to obtain more information about patients' experiences with menses and menstrual management, as well as to determine the optimal menstrual management methods for this population to induce amenorrhea, improve menstrually-related moods, and help relieve gender dysphoria. This could be an important intervention to improve the mental health and overall health outcomes for individuals in this vulnerable population.

Disclosure/Conflict of Interest

All authors have no relevant conflicts of interest to be declared. This study was supported by an internal grant from a Jefferson Pediatric Award for Clinical Research.

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Figure Legends

Figure 1. Flow chart of patients in the final analysis sample

Figure 2. Parental support of menstrual suppression

Figure 3. Parental concerns about menstrual suppression, even if supportive of it