

Original Article:

**ATTITUDES TOWARD PUBERTY BLOCKERS FOR
CHILDREN EXPERIENCING GENDER DYSPHORIA**

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Abstract

Children who experience gender dysphoria (i.e., the feeling that one's biological sex is not aligned with their identity) have few options for affirming their identity. One current option is drug series called puberty blockers which can postpone puberty. These drugs are a relatively new treatment for gender dysphoria and opinions about their use in children vary. The current study explored individuals' reasoning behind their opinions about puberty blockers for treating gender dysphoria. Correlates of transphobia were also assessed. Participants (n = 114) read a story about an 8 year old child who would like to begin puberty blockers for treating precocious puberty (control vignette) or gender dysphoria (experimental vignette). Participants completed a transphobia scale, answered questions about their contact with transgender individuals, and indicated whether they would grant permission for the child to receive puberty blockers. Vignette was not found to significantly affect granting permission or how sure participants were about their indication to grant permission. Politically conservative views were found to be significantly correlated with transphobia. Further exploratory findings are also discussed, including one's sense of spirituality, the influence of education, and contact with the transgender community.

Keywords: gender dysphoria, puberty blockers, transphobia

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INTRODUCTION

Transgender populations currently face discrimination, unique health concerns, and particularly high rates of depression and suicide. Gender identity starts forming at a very young age (Blakemore, Berenbaum, & Liben, 2009), and for children who identify as transgender, options for affirming their identity are limited. One current option is a drug series called puberty blockers¹ which can postpone puberty. Although there are few reported side effects, these drugs are a relatively new treatment for gender dysphoria and opinions about their use in children vary greatly. One objective of this present study is to explore peoples' willingness and reasoning to potentially allow a child to use puberty blockers for treating gender dysphoria.

Transphobia as a Multifaceted Issue

Harré and Gillett (1994) contend that the behavior of an individual can only be understood through the understanding of knowledge structures that influence that individual. In that regard, the issue of transphobia needs to be examined through a multidisciplinary perspective. By considering the psychological, social, medical, and political aspects of transphobia as a whole, more comprehensive conclusions can be drawn.

Transgenderism is not a one dimensional topic that can be studied from a single perspective. It is also not a topic that only applies to a small group of people. More and more individuals are learning that transgender populations make up a significant and valuable portion of our communities. With many media outlets deeming 2015 as the "Year of Trans Visibility," transgender issues have become a prominent topic in public debate (Miller, 2015; Griggs, 2015; Taylor, 2015). A 2015 study conducted by the Human Rights Campaign found that 22 percent of surveyed likely American voters said they personally know or work with a transgender person, up from 17 percent in 2014, indicating that transgender individuals are becoming more visible in American society (Human Rights Campaign, 2016). Unfortunately, with visibility came increased violence and discrimination toward transgender individuals. As of August 17th, in 2016 there have been 47 pre-empting local protections, anti-transgender, and anti-LGBT bills proposed at the state level across the US (American Civil Liberties Union, 2016). While just two of these bills have since been introduced and another two have become law (HB 2 in North Carolina and HB 1523 in Mississippi), transgender individuals in North Carolina and Mississippi, as well as individuals in the other 30 states lacking complete LGBT nondiscrimination protections, are currently in danger of being legally discriminated against. Additionally, the push for these bills among certain groups indicates that much work is ahead on the road to social and politically equality for transgender individuals.

The current study adds to the body of knowledge surrounding the topics of LGBT discrimination, medical equity, and the psychological implications of identifying as gender nonconforming. By considering multiple aspects of transgenderism, the issue of medical

intervention for children experiencing gender dysphoria can be viewed in a more comprehensive manor, yielding more practical knowledge to aid in reducing LGBT discrimination.

The Heterogeneity of the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community

Much research has been done on issues commonly related to homosexuality. Homosexual individuals have been included as the sole participant pools in numerous studies on HIV/AIDS, social stigmas, and various health concerns (Detels et al., 2012; Hatzenbuehler & McLaughlin, 2014; Jacquez, Koopman, Simon, & Longini, 1994). Unfortunately, results of these studies are often mistakenly generalized by the public and/or researchers to include the entire LGBT community. Although the queer community and many gender/sexuality scholars consider the L and G of this popular acronym to be distinctly separate from the B and T, the differences between these terms are rarely considered in the public eye and, until recently, have gained little notice in research settings (Klein, Yescavage, & Alexander, 2004). Without making a distinction between the homosexual, bisexual, and transgender subgroups which make up the LGBT community, these generalizations can lead to detriments in our knowledge of the individual concerns from each of these groups.

Through the exclusion of transgender populations in “LGBT” research, we are currently left with gaps in our understanding of many health and social issues specific to the transgender community. For example, although some transgender individuals are thought to be at high risk for HIV, little research has been done to explain the causes and risk levels for this group (Bockting, Robinson, & Rosser, 1998). Subgroups of transgender individuals are only beginning to be included in HIV research, but more inclusion is needed to explore HIV as well as other health and social concerns among this population (Herbst et al., 2008).

Transgenderism: Biology and Sociology

Before delving into the current issues surrounding the transgender community, it is important to provide clear definitions of the terms to be used. Traditionally, the terms *sex* and *gender* have been differentiated in that the former refers to the biological make-up of an individual and the latter to the psychological, cultural, and social aspects of an individual which are traditionally associated with being male or female (Lehmiller, 2014). Along with these gender associations often come stereotypes, such as the expectation in many western societies for men to be assertive and independent and for women to be sociable and emotionally expressive. Gender is also commonly thought to be a binary concept, separating gender into two distinct categories which are often seen as opposites (i.e., only two genders exist: male and female) (Eisenclas, 2013). Transgender individuals, as well as individuals who consider themselves “gender non-conforming,” do not conform to these

traditional gender roles. These individuals may identify as crossdressers, bigender persons (one who identifies as being both genders), or transsexuals (Crooks & Baur, 2011; Hyde & Delamater, 2008). As a subgroup of the transgender community, transsexuals are those whose gender and sex do not match (e.g., a biological male who identifies as a woman). Before identifying as transgender, an individual might feel a sense of distress or discomfort as a result of feeling as if their body (e.g., male, female, intersex, etc.) does not match their identity (e.g., identifying as a man, woman, gender fluid, etc.). This is referred to as gender dysphoria. Transsexual individuals may undergo gender reassignment surgery and/or hormonal therapy with the purpose of changing their physical traits to match their gender identity, but this is not always the case (Crooks & Baur, 2011; Hyde & Delamater, 2008).

Concerns and Issues Particular to the Transgender Community

Discrimination and its Correlates. The transgender community faces unique social and cultural difficulties which can affect the physical and psychological health of these individuals. While gays and lesbians certainly face discrimination today, negative feelings toward transgender individuals can be even more severe. After asking participants to use a 101-point feeling thermometer to rate how warm or cold they felt toward certain groups of people, Norton and Herek (2013) found thermometer scores to be correlated between transsexuals and gay men [$r(2276) = 0.80$], lesbians [$r(2277) = 0.67$], bisexual men [$r(2280) = 0.84$], and bisexual women [$r(2280) = 0.66$]. However, after comparing the 95% confidence intervals for each group, thermometer ratings for the transsexual group ($M = 32.01$, 95% $CI = 30.23-33.79$) were found to be significantly lower than all the other groups ($p < .001$). Personal and social traits such holding politically conservative views, a strong support of a binary conception of gender, intolerance for ambiguity or “rule breaking”, and (among women) religiosity are strongly correlated with lower thermometer ratings for transgender people (Norton & Herek, 2013). Additionally, a lack of interaction with transgender individuals or seeing transgender individuals as different may correlate with discriminatory views. This is similar to the idea that homophobia may be a result of a lack of interaction with homosexual individuals (Kullasepp, 2007). However, Capezza (2007) suggests that lack of contact with various groups (e.g., contact between straight and gay individuals, or gender traditional and nontraditional individuals) can only partially explain negative views toward unfamiliar groups. Further, seeing others as “different” does not breed intolerance on its own; we are all different, and differences are often valued (Maduriera, 2007). The current study added to this body of research by exploring the effect of political views, spirituality, and contact with transgender individuals on transphobia.

In addition to greater discrimination compared to gays and lesbians, transgender individuals experience greater discrimination than racial minority groups (Erich, Tittsworth, Meier, & Lerman, 2010). Findings from a recent study found that participants (all transsexual men and women of color) experienced more discrimination based on their transsexual identity than based on their racial identities (Erich et al., 2010). As with

previous theories, holding strong social and political views as well as having a lack of contact with transgender individuals could explain this difference in expressed prejudice.

Childhood Identity. Transgender individuals also face unique concerns in childhood. While it is commonly thought that gay and lesbian children do not fully identify as homosexual until mid- to late adolescence, children form gender identities around 2 ½ years of age (Blakemore et al., 2009; Santrock, 2013, p. 251). If a child begins to play, dress, or otherwise act in a way that is not considered appropriate based on their outward presentation of their gender, social support surrounding the child may begin to change. The earliest discrimination of gender roles is typically provided by a child's parents (Santrock, 2013, p. 252). Despite efforts to decrease gender stereotyping based on its detrimental effects, research continues to provide evidence of parents' roles in encouraging gender norms consistent with the child's sex (Bronstein, 2006). School peers and playmates will also often reject a gender non-conforming child, such as a boy who plays with dolls or a girl who plays with toy trucks (Handrinos, Cooper, Pauletti, & Perry, 2012). Through these constant influences, gender non-conforming children may feel increasingly ostracized and left out, leading to depression, substance abuse, and/or suicide (which was estimated in 2006 to be attempted by around 32% of transgender individuals) (Clements-Nolle, Marx, & Katz, 2006).

Options for Children with Gender Dysphoria

In an effort to alleviate the negative social and psychological consequences of identifying as transgender, some individuals may opt for sex reassignment surgery or hormone therapies. It has been estimated that the number of transgender individuals in the United States is about 700,000, or about 0.3 percent of adults (Flores, Herman, Gates, & Brown, 2016). Other estimates indicate this population to be much greater in number. Horton (2008) suggests transgender individuals may be 1 in 1000, while the prevalence of those who have had or will have sex reassignment surgery is 1 in 3100. For many transgender adults, sex reassignment surgery and/or hormone treatments become a legitimate option. Of course, these options are vastly limited for children. Regardless of a child's desire to change their sex, a minimum age of 18 is required for surgery (Meyer et al., 2001, p. 11). In addition to the age requirement for irreversible procedures, such as sex reassignment surgery, many health professionals avoid providing treatment for these children, fearing that irreversible treatment is premature and that the child may grow up to identify as gay or gender conforming rather than transsexual (Platero, 2014).

However, there are alternatives for individuals under the age of 18. One such option is a series of drugs called hormone blockers, also known as puberty blockers, which can postpone puberty. A major appeal of this option is its characteristic of being reversible while also allowing more time for the child and their parents to make a decision about future efforts for more permanent actions (Navasky & O'Connor, 2015). The extra time

puberty blockers give families can be crucial for the health and wellbeing of their children. Because many children with gender dysphoria do not continue to identify as transgender in adulthood, it is important that these individuals are given enough time to make a sound decision (Wallien, Cohen-Kettenis, 2008). If used under the correct timing circumstances, puberty blockers can provide families with more time to consider their options while avoiding irreversible effects and simultaneously showing the child respect for their opinions and feelings (Navasky & O'Connor, 2015).

Although there are few negative consequences reported as a result of puberty blockers, very little is known about the long term effects. Use of this option for postponing puberty in children experiencing gender dysphoria is very recent. Because of this, no longitudinal studies have been performed past the extent of about 10 years (Kuper, 2014). However, these same drugs have been used for roughly the past 30 years to treat precocious puberty (this being the only FDA approved use of the drugs), reporting few side effects (Kuper, 2014).

Predictions

The current study looks to explore individual responses concerning transgender health issues. We are interested in the possible responses when participants are presented with the choice of granting a child permission to receive puberty blockers to treat a currently controversial issue. First, we predicted that participants presented with the option of granting a child permission to receive puberty blockers for the treatment of precocious puberty would be more likely to indicate granting permission than those presented with a child wanting to treat gender dysphoria. Second, we predicted that correlates with transphobia (i.e., politically conservative views, a strong support of a binary conception of gender, intolerance for ambiguity or “rule breaking,” and, among women, religiosity) will be confirmed and that these correlates will also predict infrequent *yes* responses to the question of granting permission for the child to receive puberty blockers. Third, it was hypothesized that participants presented with the control vignette concerning the child with precocious puberty would be more certain of their indication to grant or not grant permission for the child to receive puberty blockers.

METHOD

Participants

Participants were recruited from a small liberal arts college in Southern California through an online survey system available to the students. All participants ($N = 114$) were at least 18 years of age and ranged from 18 to 24 ($M = 19.76$, $SD = 1.50$). Men made up 14.0% of the sample ($n = 16$) while the majority (85.1%) were women ($n = 97$) and one reported as other ($n = 1$, 0.9%). All participants reported as cisgender (i.e., all participants who reported their gender as male also reported their sex as male, and those who reported

their gender as female also reported their sex as female), other than one who self-identified being a female tomboy ($n = 1$, 0.9%). Most of the sample was Caucasian ($n = 64$, 56.1%), followed by Hispanic ($n = 27$, 23.7%), Asian ($n = 7$, 6.1%), African American ($n = 4$, 3.5%), Middle Eastern ($n = 2$, 1.8%), Pacific Islander ($n = 2$, 1.8%), and Other ($n = 8$, 7.0%). Participants were also majority freshmen ($n = 37$, 32.4%), with sophomores ($n = 28$) representing 24.6%, juniors ($n = 26$) representing 22.8%, and seniors ($n = 23$) representing 20.2% of the sample. Finally, the majority of the sample reported their area of study as social/behavioral science ($n = 62$, 54.4%) and natural science ($n = 28$, 24.6%). Although participants were asked to indicate their religion, because of a system glitch this particular data was not able to be collected.

Materials

Assessment scales. A 25-item scale was used to assess transphobia and attitudes toward the medical use of puberty blockers. The Transphobia Scale (TS), adopted from Nagoshi et al. (2008), is a 9-item scale used to measure prejudice toward transgender individuals by asking participants to rate the extent to which they agree with statements such as, “When I meet someone, it is important for me to be able to identify them as a man or a woman” and, “I believe that the male/female dichotomy is natural.” Participants’ responses were averaged to create a final transphobia score. Item nine of the scale (appears as item 25 on the expanded assessment scale listed under Appendix A), mentioned above, asks whether responders believe the male/female dichotomy is natural. After asking participants to explain their understanding of the “male/female dichotomy,” it was found that many could not define the statement. Because of this, item nine was excluded from the final transphobia scale. The remaining questions answered by each participant were averaged. Nine additional medical phobia questions, adapted from an HPV immunization attitudes and believes scale developed by McRee, Brewer, Reiter, Gottlieb, and Smith (2010), were used to assess participants’ attitudes toward puberty blocker injections. All nine of the medical phobia questions were rewritten to include puberty blocker injections as the subject, rather than HPV immunization. An additional seven statements are included for exploratory reasons. Participants indicated how much they agree or disagree on a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*). This scale was prefaced with a statement describing puberty blockers to familiarize participants with this medical option. See Appendix A for the full transphobia and medical phobia assessment scale.

Vignettes. Two vignettes were used, both about a child, Alex, who desires medical intervention. The only difference between the two vignettes concerned the reason for medical intervention needed for each child. The control group read a vignette in which Alex is experiencing precocious puberty, defined as the onset of puberty before 8 years old in girls and before 9 in boys, and is seeking hormone therapy (puberty blocker medications) to treat the negative symptoms of precocious puberty by postponing puberty. In the

experimental vignette, Alex is experiencing gender dysphoria and currently seeking the same hormone therapy. Precocious puberty was chosen as the control because of its psychosocial similarities to gender dysphoria. Both can cause distress, anxiety, and depression in those affected, as well as increased risk of substance abuse (Mayo Clinic, 2014). Both children are 8 years old and presented as emotionally distressed. The main difference between the control and experimental vignettes is the perceptions of each disorder – gender dysphoria being more controversial and the topic of much media attention today. While puberty blockers are FDA approved for the use of treating precocious puberty but not gender dysphoria, all participants were told that they are not FDA approved for either diagnosis in order to provide a better control group. Please see Appendices B and C for the control and experimental vignettes, respectively.

Dependent variables. Dependent measures were gathered following the assessment scale and vignettes. First, the participants indicated if they would grant the child permission to receive the puberty blocker treatment. Following this yes/no question, participants rated how sure or reluctant they were of their choice using a 7-point Likert scale. Participants were also asked to explain their reasoning behind indications of granting or not granting permission through text entry responses. Further text entry questions were included to assess participants' understanding of the male/female dichotomy, alternative options to puberty blockers for the child in the vignettes, and conceptualization of transgenderism (i.e., "What does transgenderism mean to you? Please be as detailed as possible in your response."). Please see items 1 and 2 for the dependent variable assessment and items 3 through 6 for the text entry questions in Appendix D.

Follow up questions. Following the dependent variable questions, participants were asked about their history of education on the topic of transgenderism and their known contact with transgender or gender nonconforming individuals. Questions concerning known contact with transgender or gender nonconforming individuals were asked in two parts in order to encourage participants to consider the question thoroughly. The first question specifically asked about personal contact (e.g., a friend, coworker, child of a friend, spouse's cousin, friend's sibling, etc.), while the other asked about other relations (e.g., strangers, business related, casual meetings, etc.). Answers to these questions were combined in analyses to create a variable considering overall known contact with transgender and gender nonconforming individuals. If participants answered yes to either having personal or non-personal contact, they were considered to overall have contact and were recorded as such in the combined variable.

Participants were also asked whether they have had exposure to the topic of transgenderism, whether they are the parent or legal guardian of any children, and if they were aware of the hormone therapy option before their participation in the study. No participant indicated that they are a parent or legal guardian of children. The remaining two

variables were used in exploratory analyses to assess the role of prior knowledge on indicating to grant permission for the child to receive the puberty blocker treatment. The following was included with the follow up questions to facilitate the participants' understanding of the questions:

A transgender individual is someone whose sex (anatomy at birth) and gender (identity) do not conform to traditional gender roles. Gender nonconforming refers to an individual who does not follow others' ideas about how they should dress or act based on their biological sex. Transgender and gender nonconforming individuals may identify as crossdressers, bigender persons (one who identifies as being both genders), transsexuals, or one of many other identities.

Please refer to items 7 through 11 in Appendix D for all follow up questions.

Demographic questions. Participants were asked to indicate various demographic characteristics including their age, gender, sex, ethnicity, major, year in school, and spirituality. Variables previously found to predict transphobia were also assessed, including political views and religiosity (Norton & Herek, 2013). Refer to items 12 through 14 in Appendix D for demographic questions concerning religiosity, spirituality, and political views.

Procedure

Students who agreed to participate were randomly assigned to one of four groups (based on 1. the order of presentations of the assessment scale and vignette, and 2. the vignette to be read). To control for order effects, half of the participants completed the assessment scale before the vignette, and half read the vignette before the assessment scale. Participants were also randomly assigned to the control or experimental vignette. Participants in the control group were presented the vignette about a child with precocious puberty. The experimental group read about a child experiencing gender dysphoria. Participants were then asked a set of dependent variable assessment questions, most notably whether or not they would permit the child they read about to receive puberty blockers. Finally, the study concluded with the follow up questions and the demographic assessment.

RESULTS

Hypotheses

Hypothesis 1: Vignette on granting permission. First, it was predicated that the participants presented with the option of granting a child permission to receive puberty blockers for the treatment of precocious puberty would be more likely to respond favorably

(i.e., with a *yes* response to the question of granting the child permission to receive puberty blockers) compared to those presented with the child wanting to treat gender dysphoria. A Chi-Square test was used to assess this hypothesis. No significant difference based on vignette was found.

Hypothesis 2: Correlates of transphobia. Second, select correlates with transphobia, including politically conservative views and religiosity, were hypothesized to be predictors of high scores on the Transphobia Scale and to predict infrequent *yes* responses to the question of granting permission for the child to receive puberty blockers. After splitting the data based on vignette, a linear regression was performed to assess the significance of political views on predicting indications of granting permission for the child to receive puberty blockers. This test was also performed without the data split, by grouping all data together. For each vignette, as well as overall, political views were not found to significantly predict indicating granting permission. This same statistical method was used to assess the effect of political views on transphobia scores. Political views were found to significantly predict transphobia scores: those who reported having more conservative political views scored higher on the transphobia scale, indicating more transphobia, $F(1, 110) = 17.30, p < .001, R^2 = .14$. Please refer to Table 1a for regression coefficients for each vignette, and Table 1b for regression coefficients with both vignettes combined.

Table 1a. Political Views Predicting Transphobia for Control Vignette (Precocious Puberty) and Experimental Vignette (Gender Dysphoria)

Predictor	Vignette					
	Precocious puberty			Gender dysphoria		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SD B</i>	β
Political Views	.315**	.111	.359	.236**	.078	.386
<i>Df</i>	1			1		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1b. Political Views Predicting Transphobia for Overall

Predictor	<i>B</i>	<i>SE B</i>	β
Political Views	.280***	.067	.369
<i>Df</i>	1		

* $p < .05$. ** $p < .01$. *** $p < .001$.

A Chi-Square test was then used to assess the effect of frequency of religious gathering attendance on indicating granting permission for the child to receive puberty blockers. No significant effect was found. A Factorial ANOVA was also performed to assess the effect of frequency of religious gatherings and granting permission on transphobia score, however it should be noted that *daily* and *2-3 times a week* options for religious gatherings are underpowered, with only one participant responding *no* to granting permission in each of these categories. Because of this, additional data should be collected in order to draw conclusions about the effect of religiosity on transphobia.

As a separate measure, spirituality was found to be significantly and positively correlated with transphobia, $r = .21, p = .03$. This indicates that as feelings of spirituality go up, transphobia also increases.

Hypothesis 3: Vignette on certainty of decision of granting permission. Finally, it was hypothesized that participants presented with the control vignette concerning the child with precocious puberty would be more certain of their indication to grant or not grant permission for the child to receive puberty blockers compared to those presented with the gender dysphoria vignette. This hypothesis was tested using an independent groups t-test. No significant difference was found based on vignette.

Education on Transgender Topics as a Predictor Variable

Education and transphobia. Exploratory analyses were performed to assess other measures collected, most notably education and contact with transgender individuals. Participants were asked about their education on transgender topics, including classes, lectures, social clubs, public events and/or festivals. Results of an independent groups t-test indicated a trending effect of education as a predictor of transphobia, $t(18.46) = -2.00, p = .06, d = -.60$. Those who reported having had education on the topic of transgenderism had lower transphobia scores ($M = 2.34, SD = 1.07$) compared to those who reported not having education on transgender topics ($M = 3.17, SD = 1.64$). It is important to note that Levene's Test for Equality of Variances found that the transphobia score variable had significant outliers ($F = 6.60, p = .01$), however these scores were important for the analysis as they represented the upper range of transphobia scores collected. Because of this, the t-test was adjusted and the appropriate t and p values were reported to account for unequal variances within each group. While no causal relationship can be stated, since the education variable was not manipulated, this relationship between education and transphobia score does provide directions for future research. These future directions are proposed in the discussion section below.

Education and contact with transgender individuals. Participants' education on transgender topics was also considered in the context of their contact with transgender individuals. In order to assess this interaction and how it impacts how sure participants

were about their indication to grant or not grant permission for the child to receive puberty blockers, a Factorial ANOVA was performed. Before running this statistical test, the data was split based on the “grant permission” variable in order to assess participants’ certainty of their answers. In other words, separate Factorial AVOVAs were performed, one for those who answered *no* to granting permission for the child to receive puberty blockers, and one for those who answered *yes*. Results from each test reveal different effects of contact and education on participants’ rating of how sure they were about their indication to grant or not grant permission.

Did not grant permission. For the group that did not indicate they would grant permission for puberty blockers, a significant main effect was found for education on certainty of deciding not to grant permission for puberty blockers, $F(1, 33) = 4.93, p = .03, \eta_p^2 = .13$. Those who have had education on transgender topics ($M = 4.29, SD = 1.50$) were significantly less sure of their indication to not grant the child permission to receive puberty blockers compared to those who have not had education on transgender topics ($M = 5.44, SD = 1.19$). No significant interaction or main effect for contact was found.

Granted permission. Among the group that responded *yes* to granting the child permission to receive puberty blockers, no main effects were found for education on transgender topics or personal contact, however a significant interaction between the two variables on certainty of indication to grant permission was found, $F(2, 69) = 4.26, p = .02, \eta_p^2 = .11$. In this group of *yes* responders, among those who reported not having education on transgender topics, those who also had no contact with transgender individuals ($M = 3.36, SD = .61$) were significantly less sure of their indication to grant permission compared to those who were unsure of having had contact with transgender individuals ($M = 6.51, SD = 1.21$). In this same group who indicated they would grant permission and reported not having education on transgender topics, those who had contact with transgender individuals fell in-between those who had no contact and those who were unsure of contact in their rating of certainty ($M = 4.37, SD = .61$). Among those who reported having education on transgender topics, those who have not had contact with transgender individuals were the most certain of their decision to grant permission ($M = 5.02, SD = .31$), while those who were unsure for their contact were the least sure ($M = 3.93, SD = .50$). For this group who indicated they would grant permission and reported having education on transgender topics, those who have had contact with transgender individuals again fell in-between the other no contact and unsure contact groups in their certainty ($M = 4.67, SD = .18$).

Overall, education was not found to persuade participants to feel more certain about their decision. Instead, participants who had education and indicated they would not grant permission for the child to receive puberty blockers were less certain of that decision. Only for those who indicated granting permission, personal contact with transgender individuals interacted with education to impact their certainty of granting permission. When comparing between those who had education and those who did not, individuals with personal contact were more consistently certain of their choice (mean difference = .30) compared to those who haven't had contact (mean difference = 1.67) and those who were unsure of having contact (mean difference = -2.58). Please refer to Figure 1 for a line graph depicting this interaction among participants who indicated granting permission.

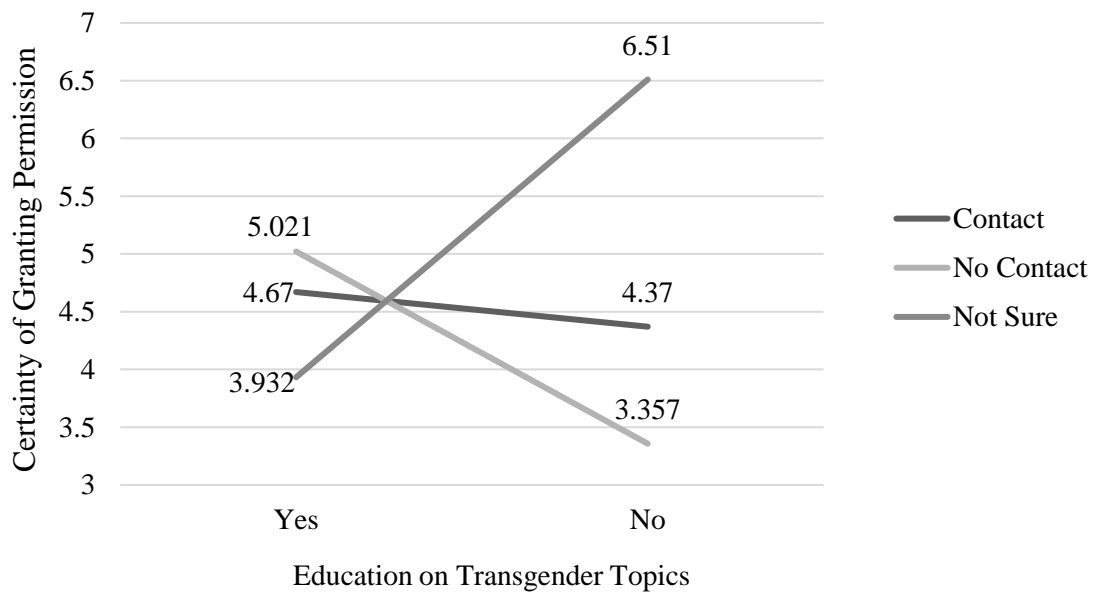


Figure 1. Contact with transgender individuals and education on transgender topics interacting to effect certainty about granting permission for the child to receive puberty blockers among those who indicated granting permission.

Transphobia and Granting Permission

A regression was conducted to assess the relationship between participants' indication of granting permission for the child to receive puberty blockers and participants' transphobia scores. Indicating to not grant permission was found to significantly predict higher transphobia scores, $F(1, 112) = 4.26, p = .04, R^2 = .04$. For every one point increase in not granting permission there was a .48 point increase in transphobia predicted. Please refer to Table 2 below for unstandardized and standardized betas, standard error, and significant values.

Table 2. Granting Permission Predicting Transphobia

Predictor	<i>B</i>	<i>SD B</i>	β
Granting Permission	.482**	.234	.191
<i>Df</i>	1		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Further analyses indicate that after separating participants based on vignette, this effect is no longer present. While indicating to not grant permission was found to predict higher transphobia scores overall, the effect was non-significant in the control and experimental groups separately. This change in significance could be a result of inadequate power, being that those who did not grant permission in the control and experimental groups totaled 21 and 18 participants, respectively.

Effect of Medical Phobia on Granting Permission

Because puberty blockers are a series of injections, feelings about injection treatments were taken into account when considering participants’ responses to granting permission for puberty blockers.

Belief in safety of puberty blockers. A series of questions asked participants about how safe they felt the puberty/hormone blocker treatment is. As a part of the transphobia assessment scale, questions included, “hormone blockers might cause short term problems like decrease in bone density,” “Hormone blockers might cause lasting health problems,” and, “I think hormone blockers are unsafe.” After running a linear regression, it was found that a stronger belief in puberty blockers being unsafe predicted less likelihood of indicating granting permission, $F(1, 112) = 13.51, p < .001, R^2 = .11$. For every 1 point increase in belief that puberty blockers are unsafe, there was a 0.11 point increase in likelihood of indicating to not grant permission for the child to receive puberty blockers. Please refer to Table 3 for standardized and unstandardized coefficients.

Table 3. Belief in Puberty Blockers Being Unsafe Predicting Not Granting Permission – Linear Regression Coefficients

Predictor	<i>B</i>	<i>SE B</i>	β
Puberty Blockers “Unsafe” Belief	.107***	.029	.329
<i>Df</i>	1		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Belief in ability to find puberty blocker clinics. Participants were also asked about their belief that an affordable clinic providing the puberty blocker treatment would be easy to find. These questions included, “I think it would be easy to find a provider or clinic where a parent can afford hormone blockers” and, “It would be easy to find a provider or clinic that has hormone blockers available.” Another linear regression was performed to assess this association. A trending association between belief that it is easy to find a provider of puberty blockers and indicating granting permission was found, $F(1, 112) = 2.84, p = .10, R^2 = .03$. For every 1 point increase in belief that puberty blocker clinics are easy to find, there was a .06 point decrease in likelihood of denying permission for puberty blockers (i.e., increased belief that puberty blocker clinics are easy to find predicts higher likelihood of indicating granting permission). Please refer to Table 4 for standardized and unstandardized coefficients.

Table 4. Belief That Puberty Blockers Clinics are Easy to Find Predicting Granting Permission – Linear Regression Coefficients

Predictor	<i>B</i>	<i>SE B</i>	β
Clinics Easy to Find Belief	-.056	.034	-.157
<i>Df</i>	1		

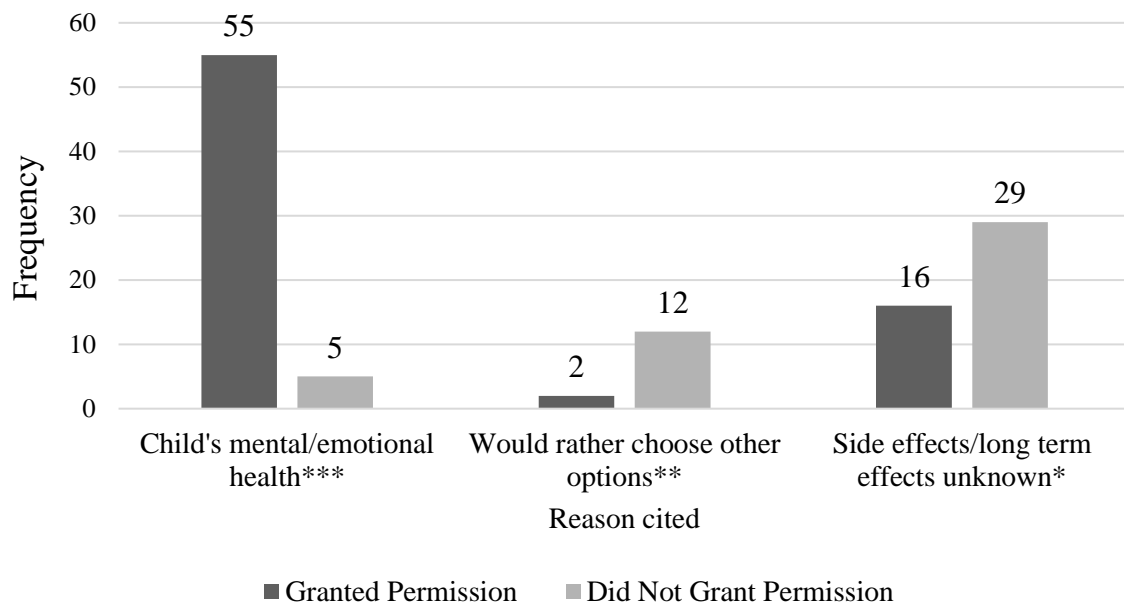
Themes Found in Participants’ Explanations of Granting or Not Granting Permission

Participants were asked to answer a free response question about their decision making process. Through the text entry response, participants gave specific reasons for their indication to either grant or not grant permission for the child to receive puberty blockers. These responses were used to explore the various aspects or “ingredients” used in the participants’ decision making processes. Participants’ answers were coded for the most frequent themes present, including puberty blockers’ lack of FDA approval, lack of research about puberty blockers, unknown side effects and long term effects, preference for other treatment options, consideration of the child’s mental and emotional health, and treatment being against religious and moral beliefs. These themes were found after reading the text entry responses and were not defined before reading participants’ responses.

All demographics for participants included in the quantitative analyses are the same as previously listed, however one participant did not answer the free response question and was excluded from the analyses. In total, 113 participants were included in the frequency analyses.

Most participants ($N = 75, 65.79\%$) indicated they would give the child permission to receive the puberty blocker treatment, however negative factors such as the lack of research and knowledge of long term effects were still brought up. While many cited that side effects and long term effects are unknown ($N = 45, 39.82\%$), not all that cited this

considered it a deal breaker for puberty blockers and still indicated that they would grant permission ($N = 16, 14.16\%$). Overall, there was a large lack of knowledge, whether it be personal understanding of puberty blockers or citing that little research has been done on the topic. Twenty participants (17.70%) cited lack of knowledge as a factor in deciding whether or not to give permission for the child to receive puberty blockers. After splitting the participants' data based on granting permission (i.e., *yes* or *no*), it was found that significantly more participants who indicated they would give permission cited the child's mental or emotional state ($N = 55$), compared to those who did not say they would grant permission ($N = 5$), $X^2(1, N = 113) = 41.67, p < 0.001$. It was also found that participants who did not indicate that they would grant permission more frequently said they would rather choose an option other than puberty blockers ($N = 12$), compared to those who indicated they would grant permission ($N = 2$), $X^2(1, N = 113) = 7.14, p = .01$. Finally, a significant difference was found based on granting permission where those who did not indicate granting permission cited the lack of understanding about long term effects of puberty blockers ($N = 27$) significantly more frequently than those who granted permission ($N = 16$), $X^2(1, N = 113) = 3.76, p = .05$. Refer to Figure 2 below for significant differences in reasons cited.



* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 2. Reasons cited for indication to grant or not grant permission for puberty blockers.

DISCUSSION

Findings

Puberty blockers. As discussed earlier, the main appeal of puberty blockers for the treatment of gender dysphoria is their characteristic of being reversible while also allowing more time for the child and their parents or guardians to make a decision about future efforts for more permanent actions (Navasky & O'Connor, 2015). Because the majority of children experiencing gender dysphoria do not go on to identify as transgender or gender non-conforming, it is important that these children and their families are provided the maximum amount of time to consider the child's gender identity while also acknowledging the child's psychological wellbeing (Wallien & Cohen-Kettenis, 2008). That being said, parents of children experiencing gender dysphoria remain skeptical about the puberty blocker option, citing the lack of longitudinal understanding of puberty blockers and lack of FDA approval for their use in treating gender dysphoria (Navasky & O'Connor, 2015). These concerns were confirmed in the current study. When considering granting permission for the child they read about to receive puberty blockers, 39.82% cited the lack of understanding of long term effects, 11.50% cited the lack of FDA approval of the treatment option, and 17.70% cited the overall lack of understanding (either personal understanding by the participant or lack of research and empirical understanding of puberty blockers) when making their decision. These results help confirm the idea that parents and guardians are in need of more detailed information when making the choice to grant permission for their child to receive treatment.

In the case of gender dysphoria, parents and guardians are not only confronted with the difficult decision of granting or not granting permission for their child to receive a hormone treatment, but the child's psychological health is also at risk. With gender identity usually starting to form around 2½ years of age, a child with gender dysphoria has likely been experiencing distress for many years over the feeling that their body and identity don't match (Blakemore et al., 2009; Santrock, 2013, p. 251). As the child approaches puberty and begins asking for puberty blockers, both the parents/guardians and the child have likely experienced years of distress. As supported by the current study's results, the child's emotional experiences surrounding their gender identity are often considered by the individual responsible for granting permission for the puberty blocker treatment. In our sample, 53.10% of participants cited the child's mental or emotional health when making their decision to indicate granting or not granting permission. Although the long term effects and lack of understanding of puberty blockers were prominent concerns for participants, the majority were concerned by the child's negative emotional responses associated with gender dysphoria.

Participants' rational for granting or not granting permission. Through text entry responses, participants were asked to provide reasons for their indications to grant or

not grant permission for the child to receive puberty blockers. Frequently cited responses for participants' indications to grant or not grant permission included lack of FDA approval, lack of research about puberty blockers, unknown side effects and long term effects, preference for other treatment options, consideration of the child's mental and emotional health, and treatment being against religious and moral beliefs. After comparing responses from participants who indicated that they would grant permission versus those who did not indicate granting permission, significant differences were found. Participants who indicated they would grant permission were significantly more likely to cite the child's emotional and mental health, while those who did not indicate granting permission were significantly more likely to cite the unknown side effects and lack of understanding of the long term effects of puberty blockers. This provides insight into how participants' are supporting their indications to grant or not grant permission. After making their decisions, those who indicated they would grant permission were much more likely to use the child's emotional distress as support for granting permission, while those who did not grant permission were more likely to bring up the potential negative effects of puberty blockers. Because of the legitimate concerns raised by participants about the potential negative effects of puberty blockers, future research into the long term effects of puberty blockers for treating gender dysphoria is essential so that children suffering from adverse effects of gender dysphoria have viable options for treatment.

Transphobia. Various factors were found to significantly predict transphobia. Previous studies have found correlations between transphobia and politically conservative views and religiosity (among women only) (Norton & Herek, 2013). As predicted, in the current study politically conservative views were found to significantly and positively correlate with transphobia, but more data must be collected in order to draw conclusions based on the religiosity variable.

When studying homophobia, Capezza (2007) found that homophobia can be partially explained by a lack of contact with homosexual people, where less interaction was associated with more homophobia. In the current study, a marginally significant effect of contact on transphobia was found. Transphobia was highest among those who were unsure about their contact with transgender individuals ($M = 3.06$, $SD = .32$), compared to those who have had personal contact with transgender individuals ($M = 2.40$, $SD = .14$) and those who have not had contact with transgender individuals ($M = 2.34$, $SD = .23$). Since these findings were not statistically significant, a more detailed assessment of contact with transgender individuals on transphobia can be performed. Rather than having participants simply report if they have had contact with transgender individuals with the categorical answer options of *yes*, *no*, and *I'm not sure*, further studies can ask participants more detailed questions about how close they are with transgender individuals. While personal contact was defined for participants by including examples of personal relationships (e.g., friend, coworker, child of a friend, spouse's cousin, friend's sibling), more detailed

questions about participants' relationship with transgender individuals may provide noteworthy results. Varying degrees of relationship closeness with transgender individuals may yield more or less transphobia, as individuals with closer relationships with transgender individuals were predicted to have less transphobia. Contact, however, should not be considered as a main avenue to reduce discrimination. First, increasing contact with transgender individuals is not a practical solution. Second, as Capezza (2007) points out while commenting on the influence of contact with minority groups, although most men have contact with women, sexism and negative views toward women persist. Because of this, contact with a marginalized group of people is not a "cure all" remedy to discrimination. Discrimination persists even after the humanization of minority groups in the eyes of those with discriminatory views. Other avenues to potentially reduce transphobia must be considered.

One such avenue could be encouraging education on the topic of transgenderism. In the current study, having education on transgender topics was found to be correlated with lower transphobia. When participants were asked about their education on transgender topics, many options were considered to be education. Examples provided to participants included classes, lectures, social clubs, and public events/festivals. Even though education was not defined as only including traditional or formal learning settings, such as semester long classes, a trending effect of education on transphobia with a medium-large effect size was still found. This points to the practical significance of encouraging education on transgender topics. Further, a formal setting is not required for this correlation to be present. Even with some participants reporting their only education as a single lecture, attending parties or clubs, talking to a roommate about their "Queer Theology" class, or brief discussions in unrelated courses, this effect still produces a strong trend.

Limitations

While the sample size was adequate ($N = 114$), sample characteristics could have skewed the results. The majority of the sample were female ($n = 97$, 85.1%), Caucasian ($n = 64$, 56.1%), and majors within the social and behavioral sciences ($n = 62$, 54.4%) and natural science ($n = 28$, 24.6%). All participants were between the ages of 18 to 24 ($M = 19.76$, $SD = 1.50$), were nonparents, and students at a small liberal arts college in Southern California. These characteristics, with special attention given to the lack of participants who were primary caregivers of a child, limits the reality factor of the study's parent-child decision making feature. Additionally, students at the university sampled are often in contact with the LGBT community on campus. With clubs on campus, many classes covering LGBT topics, events throughout the year, and constant reminders of the university's mission for inclusivity, compared to the general US population this sample is likely more conscious of the LGBT community. Younger populations such as traditional university students are also frequently exposed to popular culture media outlets. With the LGBT community currently receiving a lot of attention in pop culture, this becomes

another factor influencing this sample's contact with and acceptance of the LGBT community. These factors may have led to lower transphobia scores and more frequent indications to grant permission for puberty blockers compared to a more heterogeneous sample outside the university.

Additionally, the control and experimental vignettes may not have been different enough to yield significant results. The vignette about the child experiencing precocious puberty was chosen as the control vignette because of its similarities to gender dysphoria. Although precocious puberty and gender dysphoria were thought to have drastically different levels of perceived controversy, future studies should include manipulation checks to assure that this difference is present.

Future Directions

Suggestions for education on transgender topics. The most substantial findings of this study included education on transgender topics and its effect on transphobia and the medical use of puberty blockers. However, because the education variable was not manipulated in this study, no causal relationship can be claimed. Future studies should include education as a manipulated independent variable to assess its impact on transphobia. The current study defined education on transgender topics as classes, lectures, social clubs, and public events or festivals. Future studies should look at these education settings separately to assess the impact of direct education about transgender populations (e.g., understanding gender vs. sex, society's impact on gender identity, political and social systems and how they impact the trans community, etc.) versus education which simply exposes students to the general idea of transgenderism (e.g., Pride festivals, social clubs, etc.). With these future studies, possible causal relationship between education and transphobia can be assessed.

Although no causal statements can be made, education was consistently and significantly associated with transphobia and indicating granting permission for the child to receive puberty blockers. Because of this, it is suggested that lessons including the topic of transgenderism are implemented in middle and high school classes that are already established. The topic of transgenderism can fit in social studies and political science classes by discussing the impact of society on gender identity and expression, or in biology and health classes by discussing the age range in which gender identity forms and differences between sex and gender. With these classes already being taught in public high schools across the US, implementing discussions on transgenderism does not require large changes to current curriculum. Nevertheless, further research is still needed to assess the depth of information necessary to reduce transphobia.

Longitudinal studies. Results revealed a lack of confidence among participants in the current medical understanding of puberty blockers, suggesting a need for further clinical studies. For parents and guardians considering the treatment option of puberty

blockers, the themes brought up by our participants in their text entry responses may represent difficult obstacles in getting a child such treatment. Families with children experiencing gender dysphoria can also be expected to be concerned by the lack of FDA approval for this treatment. Although their doctor may prescribe puberty blockers for the treatment of gender dysphoria, some parents and guardians may see the lack of FDA approval as a barrier to giving permission for their child to receive the treatment.

Families in this situation may also be concerned with the lack of knowledge regarding the long term effects of puberty blockers for children experiencing gender dysphoria. Although puberty blockers have been used for roughly the past 30 years to treat precocious puberty and longitudinal studies have found few adverse long term effects from the treatment, longitudinal studies on gender dysphoric populations have only been performed at the extent of 10 years (Kuper, 2014). For many families, unknown long term effects are enough to avoid the treatment all together, leaving children with gender dysphoria without medical treatment. Fifty seven and a half percent of participants cited unknown side-effects, long term effects, and little research or overall knowledge on puberty blockers as concerns when making the decision to indicate granting or not granting permission. Of those who brought up the unknown effects of puberty blockers, 56.9% indicated they would not give permission for the child to receive puberty blockers, suggesting that the lack of longitudinal data may be preventing children from receiving the puberty blocker treatment for gender dysphoria. Future studies are needed to further investigate the social, psychological, and physical aspects of treating gender dysphoria.

Gender dysphoria continues to be a distressing experience. With particularly high rates of depression and suicide in the transgender community, it is vital that effective treatment options such as puberty blockers are utilized. Puberty blockers can be a viable treatment option for improving the psychological health of affected children; however, many parents/guardians of children experiencing gender dysphoria are understandably hesitant to grant permission for their child to receive the treatment. Our data shows that individuals often have varied concerns about puberty blockers, and it is these expressed concerns which provide insight into why many families may prefer to avoid puberty blockers. We believe the healthcare community can benefit from our findings by taking them into account while interacting with families that have children experiencing gender dysphoria.

Footnotes:

1. The Leuprolide injection, referred to here as puberty blockers, can be used to treat gender dysphoria by postponing the onset of puberty. Common brand names include Eligard, Lupron, Lupron Depot, Lupron Depot-Ped, and Viadur (National Institute of Health, 2011).

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APPENDIX ATransphobia and Medical Phobia Assessment Scale

(All items are rated using a 7-point scale, 1 = *strongly disagree*, 7 = *strongly agree*)

Hormone blockers are injections that are sometimes used by doctors to treat children who have medical conditions which would benefit from the delay of puberty

1. I tend to be open to discussing sexual issues with my partner(s).
2. Hormone blockers might cause short term problems, like decrease in bone density.
3. I would rather a child be raised in an orphanage than be adopted by a gay couple.
4. I don't like it when someone is flirting with me, and I can't tell if they are a man or a woman.
5. Hormone therapies might cause lasting health problems.
6. I think hormone therapy is unsafe.
7. I think there is something wrong with a person who says that they are neither a man nor a woman.
8. I believe it is important for partners in a committed relationship to have independent activities, aside from work or school.
9. How hard do you think it would be to find a provider or clinic where a parent can afford hormone therapy?
10. I would be upset, if someone I'd known a long time revealed to me that they used to be another gender.
11. How hard do you think it would be to find a provider or clinic that is easy to get to?
12. I avoid people on the street whose gender is unclear to me.
13. Homosexual individuals choose to be gay.
14. How hard do you think it would be to find a provider or clinic that has hormone therapy available?
15. How hard do you think it would be to find a provider or clinic where you don't have to wait long to get an appointment?
16. When I meet someone, it is important for me to be able to identify them as a man or a woman.
17. Homosexuality is an inborn trait.
18. Men should be careful to avoid acting feminine.
19. I am uncomfortable around people who don't conform to traditional gender roles, e.g., aggressive women or emotional men.
20. How effective do you think hormone therapy is in medical conditions triggered by puberty?
21. I believe that a person can never change their gender.
22. A person's genitalia define what gender they are, e.g., a penis defines a person as being a man, a vagina defines a person as being a woman.
23. I don't have enough information about hormone therapy to decide whether or not it should be used to treat children.
24. The government should fund more scientific research.
25. I believe that the male/female dichotomy (i.e., contrast or split) is natural.

APPENDIX BControl Vignette (Precocious Puberty)

Imagine you are the parent of Alex, an 8 year old who, until recently, could be described as doing well in school, having many friends, and appearing happy. Recently Alex's outlook has changed as a result of issues with precocious puberty. Precocious puberty is when puberty begins too early (at 8 years old or earlier in girls and 9 years old or earlier in boys). An individual experiencing precocious puberty will develop secondary sex characteristic, such as facial hair, breasts, and menstruation (depending on the sex of the individual) well before any other their classmates. Because of experiencing precocious puberty, Alex no longer has the motivation to focus on schoolwork, play sports, or spend time with friends, and often comes home from school crying or noticeably depressed. Although Alex's teachers are aware of the precocious puberty diagnosis, they are unsympathetic to Alex's emotional pain. You decide to have a one-on-one meeting with faculty members at Alex's school, however they are of little help stating that this is a personal matter and legally they cannot intervene. You now decide to turn to therapy. After numerous sessions with a therapist, you are told that the onset of puberty is a common cause for negative emotional changes in children experiencing precocious puberty. The therapist also tells you that Alex's emotional concerns are in dire need of clinical attention and that waiting to act may result in anxiety, depression, mental health issues, or suicide. To help with Alex's distress, the therapist recommends a new hormone blockers which will delay the onset of puberty, making the daily effects of precocious puberty less stressful. Since all changes caused by the hormone blockers are reversible, if you or Alex decide in the future that the hormone blockers are causing unwanted changes, the treatment can be stopped and conventional puberty will resume. You are also told that the hormone blockers are so new that the long term effects are unknown, however there have been few negative effects found in other children receiving the same hormone blockers. Finally, while hormone blockers have been successful in other children, the treatment option is not approved by the FDA for the treatment of precocious puberty and instead has been approved for other uses.

APPENDIX CExperimental Vignette (Gender Dysphoria)

Imagine you are the parent of Alex, an 8 year old who, until recently, could be described as doing well in school, having many friends, and appearing happy. Recently Alex's outlook has changed as a result of issues with gender dysphoria. Gender dysphoria can be described as feeling as though one's gender at birth does not match the one they identify with. An individual who is experiencing gender dysphoria feels as if their body, being male or female, does not match their actual identity as a woman or a man. Because of experiencing gender dysphoria, Alex no longer has the motivation to focus on schoolwork, play sports, or spend time with friends, and often comes home from school crying or noticeably depressed. Although Alex's teachers are aware of the gender dysphoria diagnosis, they are unsympathetic to Alex's emotional pain. You decide to have a one-on-one meeting with faculty members at Alex's school, however they are of little help stating that this is a personal matter and legally they cannot intervene. You now decide to turn to therapy. After numerous sessions with a therapist, you are told that the onset of puberty is a common cause for negative emotional changes in children experiencing gender dysphoria. The therapist also tells you that Alex's emotional concerns are in dire need of clinical attention and that waiting to act may result in anxiety, depression, mental health issues, or suicide. To help with Alex's distress, the therapist recommends a new hormone blockers which will delay the onset of puberty, making the daily effects of gender dysphoria less stressful. Since all changes caused by the hormone blockers are reversible, if you or Alex decide in the future that the hormone blockers are causing unwanted changes, the treatment can be stopped and conventional puberty will resume. You are also told that the hormone blockers are so new that the long term effects are unknown, however there have been few negative effects found in other children receiving the same hormone blockers. Finally, while hormone blockers have been successful in other children, the treatment option is not approved by the FDA for the treatment of gender dysphoria and instead has been approved for other uses.

APPENDIX D

Dependent Variable Assessment

1. As Alex’s parent, would you grant Alex permission to receive the hormone therapy?

Yes	No
-----	----

2. How sure/reluctant are you of your decision?

1	2	3	4	5	6	7
Very Reluctant			Very Sure			

3. Why would you/would you not grant permission for Alex to receive hormone therapy? Please be as detailed as possible in your response.

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4. Other than the options listed in the story (therapy and talking to Alex’s teachers), what alternative do you see to the option of hormone treatment? Give as many options as possible. Please be as detailed as possible in your response.

--

5. What does a “male/female dichotomy” mean to you?

--

6. What does transgenderism mean to you? Please be as detailed as possible in your response.

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7. Are you personally aware of anyone who identifies as transgender or gender nonconforming (e.g., friend, coworker, child of a friend, spouse’s cousin, friend’s sibling, etc.)?

Yes	No	Not Sure
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If yes, what is/are their relation(s) to you?

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8. Have you had any contact (outside of personal relationships mentioned above) with anyone you knew to be transgender or gender nonconforming (e.g., strangers, business related, casual meetings, etc.)?

Yes	No	Not Sure
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If yes, what is/are their relation(s) to you?

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9. Have you had any exposure to the topic of transgenderism (e.g., classes, lectures, social clubs, public events/festivals, etc.)?

Yes	No
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If yes, please specify any exposure you have had to the topic of transgenderism.

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10. Are you the parent of legal guardian of any children?

Yes	No
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If yes, how many children do you have?

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11. Before participating in this study, were you aware of hormone therapy options for children experiencing gender dysphoria?

Yes	No
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12. How often do you go to religious gatherings (church, temple, mosque, study groups, etc.)?

Never	Less than once a month	1-3 times a month	Once a week	2-3 times a week	Daily
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13. How spiritual do you feel on average?

1	2	3	4	5	6	7
None			A lot			

14. How would you rate your political views?

1	2	3	4	5	6	7
Strongly Liberal			Strongly Conservative			