

**COMPARISON OF HEALTHCARE EXPERIENCES AND HEALTHCARE
AVOIDANCE BETWEEN BINARY AND NONBINARY TRANSGENDER YOUTH**

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ABSTRACT

Background: There is growing research exploring the underlying causes of health disparities experienced by transgender communities. Little research has explored the unique healthcare experiences of transgender youth, particularly nonbinary youth, which may help explain the mechanisms contributing to health outcomes for gender minority youth.

Aims: To compare the positive and negative healthcare experiences and healthcare avoidance between binary and nonbinary transgender youth.

Methods: A cross sectional survey was conducted with transgender youth between the ages of 12 and 26 years old receiving gender-affirming care at the Gender Clinic at UPMC Children's Hospital of Pittsburgh. Participants were recruited during clinical hours with eligible and consenting youth who had a clinic visit during the study period (July – October 2018). 181 youth were surveyed including 141 binary youth (103 binary transmasculine and 38 binary transfeminine youth) and 40 nonbinary youth (24 nonbinary assigned female at birth (AFAB), 8 nonbinary assigned male at birth (AMAB), and 8 nonbinary youth who did not indicate their sex assigned at birth).

Results: There are no statistically significant differences in healthcare experiences and healthcare avoidance for nonbinary youth compared to binary youth. Nonbinary youth, particularly nonbinary AFAB (Coefficient: 0.99; $p = 0.05$) and nonbinary AMAB (Coefficient:

1.45; $p = 0.06$), reported more negative healthcare experiences than binary transfeminine youth when controlling for age and race/ethnicity. However, compared to binary transmasculine youth, neither nonbinary AFAB (Coefficient: 0.34; $p = 0.44$) nor nonbinary AMAB (Coefficient: 0.80; $p = 0.27$) had significantly more negative healthcare experiences. Regardless of gender identity, more negative healthcare experiences were statistically associated with healthcare avoidance (OR: 2.02; 1.58, 2.59). Parental support and positive healthcare experiences did not moderate the association between negative healthcare experiences and healthcare avoidance.

Conclusions/Public Health Statement: These findings indicate that healthcare experiences may be different for nonbinary youth compared to binary transfeminine youth. However, more research with larger sample sizes of nonbinary youth is needed to support and fully explore these differences. It is imperative that future research explores the potentially unique healthcare experiences of nonbinary transgender youth to reduce health disparities and promote positive health outcomes for this population.

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PREFACE

I would like to thank the Gender Clinic providers, especially Dr. Gina Sequeira and Dr. Gerald Montano, at UPMC Children's Hospital of Pittsburgh for allowing me the opportunity to partner with the clinic on my thesis. It has been a pleasure working with you on such meaningful and impactful research.

I also would like to thank my mentors, Jamie Egan and Robert Coulter, for mentoring me throughout this process and throughout my MPH program. You both have believed in me when I had my doubts and supported me always. I have learned so much from you both and I cannot thank you enough for your mentorship.

Without the combined assistance from my mentors and the partnership with the Gender Clinic, this would not have been possible. I hope that this study and its findings can support future research at the Gender Clinic so that we may better understand the experiences of both nonbinary and binary transgender youth and, ultimately, create positive action resulting in improved healthcare and positive health outcomes for all transgender youth.

1.0 INTRODUCTION

1.1 PURPOSE

This original research project compares the healthcare experiences and healthcare avoidance between binary and nonbinary transgender youth who receive care at the Gender Clinic at the UPMC Children's Hospital of Pittsburgh (CHP).

1.1.1 Primary Research Question

How do nonbinary transgender youth differ in their healthcare experiences and healthcare avoidance from binary transgender youth?

1.2 EXPERIMENTAL AND CONCEPTUAL BACKGROUND

There is an increasing number of adolescents in the U.S. who self-identify as transgender and are seeking medical services to alleviate gender dysphoria, a diagnosable mental health condition characterized by a feeling of discomfort/distress with the discrepancy between one's gender identity and sex assigned at birth.¹ An estimated 1.55 million transgender individuals live

in the U.S., of which 10% are youth between the ages of 13 and 17 years old and 13% are between 18 and 24 years old.²

Not all transgender individuals experience gender dysphoria at clinically significant levels requiring treatment.³ Additionally, some individuals may experience gender dysphoria only for a temporary period of time while others experience gender dysphoria throughout their life.³ The diagnosis of gender dysphoria is not a pathological indication of transgender identity; instead, the diagnosis often facilitates access to treatment so that individuals can pursue medical interventions that help them feel comfortable with their gender identity and expression.³

Regardless of one's experience of gender dysphoria or lack thereof, gender affirmation is an important social determinant of health for transgender individuals.⁴ Studies show that a lack of gender affirmation impacts healthcare utilization behaviors, including delaying preventative care or avoiding clinical care when one is sick or injured (i.e., healthcare avoidance).^{5,6} Therefore, gender-affirming healthcare is important for transgender individuals. Gender-affirming care seeks to affirm transgender individuals' identities across social, psychological, medical, and legal dimensions.⁴ Medical providers mostly affirm transgender individuals through social, psychological, and medical domains.⁴ For example, providers practicing gender-affirming care affirm one socially and psychologically by using one's preferred name and pronouns.⁴ Additionally, providers may provide individualized treatment of hormones, surgeries, and/or other procedures to help transgender individuals feel that their physical being matches their gender identity.⁴

Gender-affirming care is largely a specialized field that is not incorporated into the mainstream delivery of healthcare or primary care services.⁴ As a result, gender clinics – specialized in providing gender-affirming care, usually via a multidisciplinary team – in pediatric

hospitals and other health centers have expanded to meet the medical needs for youth referred to them at increasingly younger ages.¹ Despite these trends, many transgender adolescents who meet the criteria for gender dysphoria do not receive treatment to reduce their gender dysphoria.⁷ Additionally, studies show that transgender youth, regardless of their experience with gender dysphoria, experience many barriers to receiving care that affirms one's gender identity, have overall poorer health, and have lower rates of preventative healthcare visits.⁸

According to one population-based study in 2016, 62.1% of transgender youth consider their general health as poor, fair, or good, compared to 33.1% of cisgender youth who have a gender identity that aligns with their sex assigned at birth.⁸ Additionally, 59.3% of transgender youth have long-term mental health problems, compared to 17.4% of cisgender youth, and 25.2% have long-term physical disabilities, compared to 15.2% of cisgender youth.⁸ The same study found that 41.2% of transgender youth report visiting the nurse's office at least once in the last 30 days and 51.5% of these youth report staying home sick from school at least once in the last 30 days, compared to 25.9% and 42.6% of their cisgender peers, respectively.⁸ Significantly higher use of the nurse's office and sick days indicate that transgender youths' overall poorer health likely keeps these youth from reaching their full potential.⁸

Research studying transgender health disparities and their causes are growing. In the larger field of sexual and gender minority health, Minority Stress Theory has been heavily utilized to understand the factors impacting sexual minority individuals' health so that we can understand how health disparities manifest in this community.⁹ Recently, researchers have developed a tool to measure minority stress specifically for gender minority individuals called Gender Minority Stress and Resilience.⁹ This tool, along with its conceptual model, can be used to describe the unique phenomenon of minority stress for gender minority individuals.⁹ Gender

Minority Stress and Resilience describes both the proximal and distal stress factors that impact gender minorities' mental and physical health. Proximal stress factors such as internalized transphobia, negative expectations, and concealment negatively affect physical and mental health outcomes.⁹ Distally, stress factors such as gender-related discrimination, gender-related rejection, gender-related victimization, and non-affirmation of gender identity negatively affect gender minority health outcomes.⁹

There is established literature describing the prevalence of these stress factors experienced in the adult transgender community. However, there is less research describing these factors for transgender youth. A recent study in Seattle that included transgender youth, parents, and providers found that there are many barriers to gender-affirming medical care for these youth.¹⁰ These barriers include: few pediatric providers trained in providing gender-affirming care, inconsistent use of chosen name/pronoun, uncoordinated care and gatekeeping, limited/delayed access to gender-affirming medical interventions such as hormone blockers and cross sex hormones, lack of consistently applied protocols, and insurance exclusions.¹⁰ According to Gender Minority Stress and Resilience, these poor healthcare experiences characterized by discrimination and a lack of gender affirmation negatively impact one's health and contribute to negative expectations, internalized transphobia, and concealment, which further impact one's mental and physical health.⁹ It is unclear how negative expectations, internalized transphobia, and concealment affect one's health; however, it is possible that these thoughts and behaviors may contribute to healthcare avoidant behaviors.

Research shows that interpersonal stigma, such as healthcare discrimination and denial of care by providers, can affect transgender individuals on an individual level by shaping one's cognitive, affective, and behavioral processes.¹¹ These processes include anxious expectation of

rejection, stigma avoidance, and self-efficacy to cope with stigma-related stressors, all of which may affect how one approaches future healthcare encounters potentially through the development of healthcare avoidant behaviors.¹¹

Although there are no longitudinal studies to support the causality of healthcare discrimination resulting in healthcare avoidance for transgender youth, there is evidence that transgender youth utilize preventative services and regular dental health maintenance at lower rates than their cisgender peers.⁸ One study found that 60.0% of transgender youth received a medical check-up in the past year, compared to 64.7% of cisgender youth, and 28.9% of transgender youth received a dental check-up in the past year, compared to 82.0% of cisgender youth.⁸ It is unclear why preventative services are underutilized by transgender youth. I hypothesize that healthcare discrimination, negative healthcare experiences, and a lack of gender affirmation are positively associated with healthcare avoidant behaviors.

Recently there has been a focus on resiliency in the literature concerning sexual and gender minority health. Gender Minority Stress and Resilience posits that community connectedness and pride are positively associated with mental and physical health.⁹ Additionally, studies find that parental support is a protective factor associated with better health and positive health outcomes for transgender youth.¹² According to a study of youth receiving care at Children's Hospital Los Angeles, parental support was significantly associated with fewer depressive symptoms, reduced perceived burden of being transgender, and higher life satisfaction.¹² However, it remains unclear how parental support operates as a protective health factor. I hypothesize that parental support may mitigate the relationship between negative healthcare experiences and healthcare avoidance. Additionally, I hypothesize that positive healthcare experiences may act as a protective factor, similar to parental support; although, there

is limited research on the positive healthcare experiences of transgender youth and its subsequent impact on this population.

One area of research still relatively unexplored is identifying the potential differences in health disparities within the transgender community. Under the umbrella of transgender identity falls a number of other identities that have been largely overlooked by the medical community and the public, which has primarily focused on the binary narrative of transgender boys/men and transgender girls/women. As a result, nonbinary identities are under-researched. Thus, we have little knowledge of the specific health status and experiences of nonbinary transgender individuals. More research is needed in this area since a significant proportion of transgender youth identify as such. One study conducted in the United Kingdom found that of the transgender youth in a sample of sexual and gender minority young adults aged 16-25 years old, over half (53.5%) of youth identified as nonbinary, 39.7% of youth assigned female at birth (AFAB) and 13.7% of youth assigned male at birth (AMAB).¹³ Thus, it is critical that we make nonbinary transgender youth a priority so that we can positively affect change for all transgender youth.

The goal of this original research is to explore the potential differences in healthcare experiences and healthcare avoidance between nonbinary and binary transgender youth to further our knowledge of the specific health needs of these different but equally important transgender individuals. Through this research, I will further explore the phenomenon between stress factors such as negative/non-gender affirmative healthcare experiences and healthcare avoidance as well as the relationship between potential resiliency factors such as parental support and positive/gender-affirming healthcare experiences (**Figure 1**). This research will build off of Gender Minority Stress and Resiliency to better understand the underlying causes of the health

disparities experienced by transgender youth. Clinically, this research will inform pediatric healthcare providers caring for transgender youth across the nation that transgender youth of various gender identities may experience different healthcare experiences requiring different approaches to care.

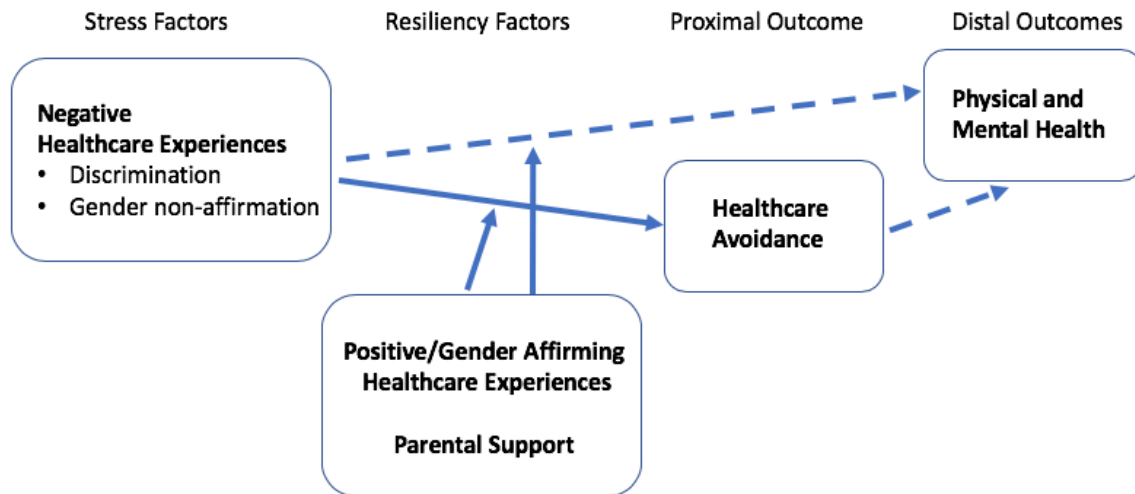


Figure 1. Relationship between Healthcare Experiences and Healthcare Avoidance

2.0 METHODS

2.1 PARTICIPANTS AND PROCEDURES

This study involved the analysis of data from a cross-sectional survey of transgender youth receiving care from the CHP Gender Clinic. The Gender Clinic at CHP is a specialized clinic offering gender-affirming care such as hormone therapy, hormone blockers, as well as behavioral health and preventative care to transgender children and youth up to the age of 26 years old. This clinic serves youth from Allegheny County and beyond with many patients traveling from central Pennsylvania, Ohio, and West Virginia since there are few clinics/providers providing gender-affirming care for those under 18 years old. Since the Gender Clinic was established six years ago, the clinic has served approximately 600 youth.

Participants were recruited during the Gender Clinic's clinical hours. For each incoming patient with an appointment in July – October 2018, a member of the research team reviewed the patient's prior electronic health record and their reason for visit to determine if the patient was eligible for the survey and, if they were eligible, the youth was approached to participate in the study during their clinic visit. The inclusion criteria for the study were that the youth be between the ages of 12 and 26 years old and identify as something other than cisgender or have a gender identity different from their sex assigned at birth (e.g., identify as a girl and is male assigned at birth). Parental consent was waived to allow those younger than 18 years old to provide their

own assent to participate in the study. Each participant received \$10 compensation after completing the Qualtrics survey on an iPad. This study was approved by the University of Pittsburgh IRB.

2.2 MEASURES

Table 1 lists the survey items that were used and categorizes them into the four main groups of variables: Sociodemographics, Healthcare Experiences, Healthcare Avoidance, and Parental Support. For the Healthcare Experiences domain, subdomains are used to further organize items; these subdomains include Negative Healthcare Experiences and Positive Healthcare Experiences.

2.2.1 Gender Identity

Participants were categorized into two main groups, nonbinary and binary transgender youth, using the Gender Identity item “How do you describe your gender identity? Check all that apply” with options “transmasculine, transfeminine, nonbinary, genderqueer, genderfluid, gender questioning, gender nonconforming, agender, demi boy/man, demi girl/woman, gender variant, androgyne, two spirit (or other identity of indigenous origin), cisgender, or other.” Because this item is select all that apply, youth had the ability to select more than one gender identity. **Table 2** lists and defines each gender identity included in the Gender Identity item and categorizes each into either the nonbinary or binary group.

Those who selected only “transmasculine” or only “transfeminine” were coded into the binary group. Regardless of whether participants selected “transmasculine” or “transfeminine,” those who selected any of the following gender identities were coded as nonbinary: “nonbinary, genderqueer, gender fluid, gender nonconforming, agender, demi boy/man, demi girl/woman, gender variant, androgyne, and two-spirit.” Those who did not select any of the listed gender identities and instead wrote in a gender identity in the “Other” category were categorized based on their response; if the gender identity was synonymous with a nonbinary gender identity (e.g., “no gender”), they were coded as nonbinary; and if the gender identity was synonymous with a binary identity (e.g., male, female, male-to-female, female-to-male), the participant was coded into the binary group. Participants who selected “gender questioning” were categorized into the nonbinary group unless they selected a binary identity.

After creating the two main gender identity groups, I further categorized participants within each group as either binary transmasculine or binary transfeminine for the binary youth and assigned female at birth or assigned male at birth for the nonbinary youth. For those in the binary group, participants were assigned to either the binary transmasculine or binary transfeminine group. Those who only selected “transmasculine” in the Gender Identity item were coded as binary transmasculine. Those who only selected “transfeminine” in the Gender Identity item were coded as binary transfeminine. For those assigned to the nonbinary group, the Sex Assigned at Birth (SAAB) Item “What sex were you assigned at birth?” with options “male, female, would not rather answer, other” was used to categorize these participants into either the assigned male at birth (AMAB) or assigned female at birth (AFAB) group. This is necessary because nonbinary youth cannot be defined via traditional binary gender identities, but it is important to categorize them by their SAAB because youth of different SAAB may have

different experiences. Participants who selected “female” were coded into the AFAB group and those who selected “male” were assigned to the AMAB group. Participants who did not indicate their SAAB were coded as nonbinary unknown SAAB.

2.2.2 Sociodemographic Characteristics

Sociodemographic characteristics were assessed with questions regarding age and race/ethnicity. Age was assessed using the question “How old are you” with options “under 14, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, over 26.” Age was recoded into under 18 and 18 years old and older because youth under 18 years old cannot consent for the majority of gender-affirming medical care without parental consent. Also, youth under 18 years old may experience different barriers to accessing healthcare. For instance, one’s parent/guardian may control where and who provides care, which may impact one’s access to gender-affirming provider, depending on the parent/guardian’s support of their child’s gender identity/transition. Those 18 years or older may have more control over their healthcare and may have different healthcare experiences than younger transgender youth.

Race/ethnicity was assessed using the question “How do you identify your race/ethnicity” with options “Black, Hispanic/Latino/a/x, White, Asian, Multiracial, Other, I’d rather not say.”

2.2.3 Positive Healthcare Experiences

Eight survey questions measured various positive healthcare experiences. **Table 1** lists the positive healthcare experience questions. These questions were grouped together in the

survey and were preceded by “Has a healthcare provider outside of the gender clinic ever...” Each question had the option of either “yes” or “no”.

A total experience score was calculated for each participant so I could measure the magnitude of positive healthcare experiences one encountered. Each item within the Positive Healthcare Experiences domain was scored yes = 1 and no = 0. Then, each of the values for the eight positive healthcare experience measures were summed to calculate a total Positive Healthcare Experience score for each participant. The maximum Positive Healthcare Experiences Score possible was 8 if one reported “yes” for all the positive healthcare experience measures and the minimum possible score was 0 if one reported “no” for all the positive healthcare experience measures.

2.2.4 Negative Healthcare Experiences

Seven survey questions measured various negative healthcare experiences. **Table 1** lists the negative healthcare experience question. These questions were grouped together in the survey and were preceded by “Has a healthcare provider ever...” Each question had the option of either “yes” or “no”.

A total Negative Healthcare Experience score was calculated for each participant each participant so that I could measure the magnitude of negative healthcare experiences one encountered. Each item within the Negative Healthcare Experiences domain was scored yes = 1 and no = 0. Then, each of the values for the seven negative healthcare experience measures were summed to calculate a total Negative Healthcare Experience score for each participant. The maximum Negative Healthcare Experiences Score possible was 7 if one reported “yes” for all the

negative healthcare experience measures and the minimum possible score was 0 if one reported “no” for all the negative healthcare experience measures.

2.2.5 Healthcare Avoidance

The following question was used to measure healthcare avoidance, “Have you ever avoided seeing a healthcare provider (even though you felt you needed to) because you were worried about how they might react to your gender identity?” Options for this question were “Yes” or “No.”

2.2.6 Parental Support

The following question was used to assess parental support: “How supportive would you say your most supportive parent/legal guardian is of your transition?” The available options ranged from a 1-10 Likert Scale, with 1 being “not supportive at all” and 10 being “extremely supportive.” Respondents were also provided the options of selecting “unsure” and “other,” which I coded as missing. Respondents who selected “other” and provided a numerical response were re-coded to the corresponding Likert Scale option; respondents who selected “other” and who wrote in an explanation or a non-numerical response were coded as missing.

2.3 STATISTICAL ANALYSES

Statistical analyses were conducted in Stata version 15.1 (College Station, Texas). Chi-square analysis were used to assess gender identity differences for sociodemographic variables, age and race-ethnicity. Linear regression was used to assess differences in Positive and Negative Healthcare Experiences between nonbinary and binary youth. Logistic regression was used to assess differences for Healthcare Avoidance between nonbinary and binary youth. Negative Healthcare Experiences were evaluated as predictor of Healthcare Avoidance. Parental Support and Positive Healthcare Experiences were evaluated as potential moderators mitigating the relationship between Negative Healthcare Experiences and Healthcare Avoidance.

First, group differences among each of the measures were analyzed among the two main gender identity groups, binary and nonbinary, using the binary group as the reference group. Next, group differences among each of the measures were analyzed among the gender identity subgroups; the three nonbinary groups (nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) were compared to the binary transmasculine group and then compared to the binary transfeminine group. Nonbinary youth were compared to both binary transfeminine youth and binary transmasculine youth separately because a preliminary analysis comparing all gender groups to binary transmasculine youth (reference group) showed that there was a significant difference between binary transmasculine and binary transfeminine youth.

Table 1. Survey Items

Item Name	Item Description
Sociodemographics	
Gender Identity	How do you describe your gender identity? (Choose all that apply)
Sex Assigned at Birth	What sex were you assigned at birth?
Age	How old are you?
Race/Ethnicity	How do you identify your race/ethnicity?
Healthcare Experiences	
Negative Healthcare Experiences	
Disrespected because of Gender	Have you ever felt you were disrespected by a healthcare provider because of your gender identity or expression?
Discouraged from Exploring Gender	Discouraged you from exploring your gender?
Inconsistent/Misuse of Pronouns	Inconsistently used or misused your preferred name or pronouns?
Refused Care	Refused to care for you because of your gender identity?
Refused to Discuss Gender Concerns	Refused to discuss or address gender related health concerns?
Not Knowledgeable about Gender Care to Provide It	Told you they didn't know enough about your gender-related care to provide it?
Used Hurtful/Insulting Language	Used hurtful or insulting language when discussing your gender identity?
Positive Healthcare Experiences	
Asked Preferred Name and Pronouns	Asked you what name and pronouns you would like to use during your visit?
Discussed Gender Exploration is Normal	Discussed that it is normal for people to explore their gender?
Asked if one Wanted to Talk about Gender	Asked you if you wanted to talk about your gender identity?
Supported you in Talking to Parent/Guardian about Gender	Supported you in talking with your parent/guardian about your gender identity?
Asked about one's Preferred Body Part Terms	Asked what terms you would like to use to describe parts of your body you may be uncomfortable with?
Connected one to Support Groups/Organizations	Connected you with a local organization or support group for trans or nonbinary people?
Connected one to a Gender Affirming Mental Health Provider	Connected you with an affirming mental health provider or therapist?
Connected one to a Doctor/Clinic for Hormones/Hormone Blockers	Connected you with another doctor or clinic where hormones or puberty blockers are prescribed?
Healthcare Avoidance	
Healthcare Avoidance	Have you ever avoided seeing a healthcare provider because you were worried about how they might react to your gender identity?
Parental Support	
Parental Support	How supportive would you say your most supportive parent/legal guardian is of your transition?

Table 2. Gender Identities

Gender Identity	Definition
Binary	
Transmasculine	Someone who was born female but whose gender identity is more male than female ¹⁴
Transfeminine	Someone who was born male but whose gender identity is more female than male ¹⁴
Nonbinary	
Nonbinary	A gender identity not defined in terms of traditional binary oppositions ¹⁵
Genderqueer	Can be used in two ways: 1) an umbrella term to include all people whose gender varies from the traditional binary or 2) someone who is anatomically female or male, but feels their gender identity is neither female or male ¹⁶
Genderfluid	Someone who identifies and presents themselves as both or alternatively male and female, as no gender, or as a gender outside of the male/female binary ¹⁶
Gender Questioning	Someone who is in the process of exploring and discovering their gender identity and/or gender expression ¹⁷
Gender Nonconforming	Someone whose gender expression is neither masculine nor feminine or is different from traditional expectations of how a man or woman should behave ¹⁶
Agender	Someone who does not identify themselves with a particular gender ¹⁵
Demi Boy/Man	Someone who has a partial connection to the male identity ¹⁸
Demi Girl/Woman	Someone who has a partial connection to the female identity ¹⁸
Gender Variant	Someone whose gender identity or expression does not conform to socially defined male or female gender norms
Androgynous	Someone whose gender identity is both male and female, or neither male nor female ¹⁶
Two Spirit (or other identity of indigenous origin)	Someone who displays both male and female characteristics; sometimes is referred to as a third gender ¹⁶
Cisgender	Someone whose gender identity and gender expression align with their sex assigned at birth ¹⁶
Other	
Other	Participants may write in what they identify as

3.0 RESULTS

Full results of the statistical analyses are shown in Tables 3 – 20. The main results are summarized below.

3.1 PARTICIPANTS

Participants included 181 transgender youth who received care at the Gender Clinic between July 2018 and October 2018. The youth ranged in age from approximately 12 to 26 years old. Participants were categorized as either binary (n = 141) or nonbinary (n = 40) and were categorized further as binary transmasculine (n = 131), binary transfeminine (n = 38), nonbinary assigned female at birth (AFAB) (n = 24), nonbinary assigned male at birth (AMAB) (n = 8), and as nonbinary unknown SAAB (n = 8) if the participant did not specify their sex assigned at birth (SAAB).

3.2 SOCIODEMOGRAPHIC CHARACTERISTICS

When comparing all nonbinary participants to binary participants, there were statistically significant group differences for age ($p = 0.02$). A greater proportion of binary youth were under

18 years old (53.19%) than nonbinary youth (32.50%). Alternatively, a larger percentage of nonbinary youth (50.00%) were 18 years old or older compared to the binary youth (40.43%). However, there were not statistically significant group differences for race/ethnicity ($p = 0.17$). Both the binary and nonbinary youth identified primarily as White, 82.98% and 67.50%, respectively. See **Table 3** for the full results comparing sociodemographics of nonbinary youth to binary youth.

When examining differences between all five gender identity subgroups, there were statistically significant group differences for age ($p < 0.0001$). There was a higher proportion of binary transmasculine youth under 18 years old (60.19%) compared to youth with other gender identities. The majority of binary transfeminine (55.26%), nonbinary AFAB (54.17%), and nonbinary AMAB (62.50%) youth reported being 18 years old or older. For the nonbinary unknown SAAB group, 62.50% of youth did not specify their age; of those who did, 25.00% reported being 18 years old or older and 12.50% reported being under 18 years old. However, there were no significant group differences for race/ethnicity ($p = 0.42$). A majority of binary transmasculine (83.50%), binary transfeminine (81.58%), nonbinary AFAB (75.00%), and nonbinary AMAB (75.00%) identified as White. See **Table 4** for the full results comparing sociodemographics between each of the gender identity subgroups.

Table 3. Sociodemographics: Nonbinary Youth Compared to Binary Youth

	Binary (n=141)	Nonbinary (n= 40)	Result of Group Comparison
Age			
Under 18	75 (53.19%)	13 (32.50%)	p = 0.018
18+	57 (40.43%)	20 (50.00%)	
Not Specified	9 (6.38%)	7 (17.50%)	
Race/Ethnicity			
White	117 (82.98%)	27 (67.50%)	p = 0.17
Black	4 (2.84%)	2 (5.00%)	
Hispanic/Latinx	3 (2.13%)	2 (5.00%)	
Multiracial	7 (4.96%)	3 (7.50%)	
Other	4 (2.84%)	1 (2.50%)	
Not Specified	6 (4.26%)	5 (12.50%)	

Table 4. Sociodemographics: Gender Identity Subgroups

	Binary Transmasculine (n=103)	Binary Transfeminine (n=38)	Nonbinary AFAB (n = 24)	Nonbinary AMAB (n=8)	Nonbinary Unknown SAAB (n=8)	Result of Group Comparison
Age						
Under 18	62 (60.19%)	13 (34.21%)	9 (37.50%)	3 (37.50%)	1 (12.50%)	p < 0.0001
18+	36 (34.95%)	21 (55.26%)	13 (54.17%)	5 (62.50%)	2 (25.00%)	
Not Specified	5 (4.85%)	4 (10.53%)	2 (8.33%)	0 (0.00%)	5 (62.50%)	
Race/Ethnicity						
White	86 (83.50%)	31 (81.58%)	18 (75.00%)	6 (75.00%)	3 (37.50%)	p = 0.42
Black	2 (1.94%)	2 (5.26%)	1 (4.17%)	1 (12.50%)	0 (0.00%)	
Hispanic/ Latinx	2 (1.94%)	1 (2.63%)	1 (4.17%)	1 (12.50%)	0 (0.00%)	
Multiracial	6 (5.83%)	1 (2.63%)	3 (12.50%)	0 (0.00%)	0 (0.00%)	
Other	3 (2.91%)	1 (2.63%)	1 (4.17%)	0 (0.00%)	1 (12.50%)	
Not Specified	4 (3.88%)	2 (5.26%)	0 (0.00%)	0 (0.00%)	4 (50.00%)	

3.3 POSITIVE HEALTHCARE EXPERIENCES

Nonbinary youth had a slightly higher mean Positive Healthcare Experiences score than binary youth, 2.88 (SD: 0.46) compared to 2.70 (SD: 0.20). See **Table 5** for full results comparing mean Positive Healthcare Experiences scores between nonbinary and binary youth. Among the gender identity subgroups, nonbinary AMAB had the highest mean Positive Healthcare score of 4.25 (SD: 1.03) out of a maximum score of 8. Nonbinary unknown SAAB youth had the lowest Positive Healthcare Experiences score of 2.25 (SD: 1.01). See **Table 6** for full results comparing mean Positive Healthcare Experience scores across gender identity subgroups.

When comparing all nonbinary youth to binary youth, there was no significant difference in Positive Healthcare Experiences score after adjusting for age and race/ethnicity. After adjusting for age and race/ethnicity, nonbinary youth reported a Positive Healthcare Experiences score that was 0.42 (-0.46, 1.29) points higher than binary youth. See **Table 7** for full results comparing nonbinary youths' Positive Healthcare Experiences scores to binary youth.

When comparing the three nonbinary groups (i.e., nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) to binary transmasculine youth, there were no significant differences in Positive Healthcare Experiences scores after adjusting for age and race/ethnicity. After adjusting for age and race/ethnicity, nonbinary AFAB had a Positive Healthcare Experiences score that was 0.06 (-1.04, 1.16) points higher than binary transmasculine youth. Nonbinary AMAB had a Positive Healthcare Experiences score that was 1.21 (-0.58, 3.01) points higher than binary transmasculine youth. Nonbinary unknown SAAB youth had a Positive Healthcare Experiences score that was 0.83 (-1.16, 2.82) points higher than binary transmasculine youth. However, none of these differences were statistically significant. See

Table 8 for full results comparing nonbinary youths’ Positive Healthcare Experiences scores to binary transmasculine youth.

When comparing each of the three nonbinary groups (i.e., nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) to binary transfeminine youth, there were no significant differences in Positive Healthcare Experiences score after adjusting for age and race/ethnicity. After adjusting for age and race/ethnicity, nonbinary AFAB had a Positive Healthcare Experiences score that was 0.003 (-1.25, 1.26) points higher than binary transmasculine youth. Nonbinary AMAB had a Positive Healthcare Experiences score that was 1.15 (-0.73, 3.03) points higher than binary transmasculine youth. Nonbinary unknown SAAB youth had a Positive Healthcare Experiences score that was 0.77 (-1.28, 2.82) points higher than binary transmasculine youth. However, none of these differences were statistically significant. See **Table 9** for full results comparing nonbinary youths’ Positive Healthcare Experiences scores to binary transfeminine youth.

Table 5. Average Positive Healthcare Experiences Scores: Nonbinary Compared to Binary Youth

	Binary (n = 141)	Nonbinary (n=40)
Positive Healthcare Experiences (Mean, SD)	2.88 (0.46)	2.70 (0.20)

Table 6. Average Positive Healthcare Experiences Scores among Gender Identity Subgroups

	Binary Transmasculine (n = 103)	Binary Transfeminine (n=38)	Nonbinary AFAB (n=24)	Nonbinary AMAB (n=8)	Nonbinary Unknown SAAB (n=8)
Positive Healthcare Experiences (Mean, SD)	2.67 (0.23)	2.79 (0.43)	2.63 (0.59)	4.25 (1.03)	2.25 (1.01)

Table 7. Unadjusted Adjusted Positive Healthcare Experiences: Nonbinary Compared to Binary Youth

	Coefficient	P Value	95% CI
Unadjusted			
Binary	Reference Group		
Nonbinary	0.17	0.70	(-0.71, 1.06)
Adjusted			
Binary	Reference Group		
Nonbinary	0.42	0.35	(-0.46, 1.29)

Table 8. Unadjusted and Adjusted Positive Healthcare Experiences: Nonbinary Compared to Binary Transmasculine Youth

	Coefficient	P Value	95% CI
Unadjusted			
Binary Transmasculine	Reference Group		
Binary Transfeminine	0.12	0.80	(-0.82, 1.06)
Nonbinary AFAB	-0.05	0.94	(-1.17, 1.08)
Nonbinary AMAB	1.58	0.09	(-0.23, 3.39)
Nonbinary unknown SAAB	-0.42	0.65	(-2.23, 1.39)
Adjusted			
Binary Transmasculine	Reference Group		
Binary Transfeminine	0.06	0.90	(-0.87, 0.99)
Nonbinary AFAB	0.06	0.91	(-1.04, 1.16)
Nonbinary AMAB	1.21	0.18	(-0.58, 3.01)
Nonbinary Unknown SAAB	0.83	0.41	(-1.16, 2.82)

Table 9. Unadjusted and Adjusted Positive Healthcare Experiences: Nonbinary Compared to Binary Transfeminine Youth

	Coefficient	P Value	95% CI
Unadjusted			
Binary Transfeminine	Reference Group		
Nonbinary AFAB	-0.16	0.80	(-1.45, 1.12)
Nonbinary AMAB	1.46	0.14	(-0.46, 3.38)
Nonbinary Unknown SAAB	-0.54	0.58	(-2.46, 1.38)
Adjusted			
Binary Transfeminine	Reference Group		
Nonbinary AFAB	0.003	0.996	(-1.25, 1.26)
Nonbinary AMAB	1.15	0.23	(-0.73, 3.03)
Nonbinary Unknown SAAB	0.77	0.46	(-1.28, 2.82)

3.4 NEGATIVE HEALTHCARE EXPERIENCES

Nonbinary youth had a slightly higher mean Negative Healthcare Experiences score than binary youth, 2.45 (SD: 0.33) compared to 1.93 (SD: 0.16). See **Table 10** for full results comparing mean Negative Healthcare Experiences scores between nonbinary and binary youth. Among the gender identity subgroups, nonbinary AMAB had the highest mean Negative Healthcare Experiences score of 3 (SD: 0.85) out of a maximum score of 7. Binary transfeminine youth had the lowest mean Negative Healthcare Experiences score of 1.45 (SD: 0.31). See **Table 11** for full results comparing mean Negative Healthcare Experience scores across gender identity subgroups.

When comparing all nonbinary youth to binary youth, there was no significant difference in Negative Healthcare Experiences score after adjusting for age and race/ethnicity. After adjusting for age and race/ethnicity, nonbinary youth reported a Negative Healthcare

Experiences score that was 0.63 (-0.06, 1.33) points higher than binary youth. See **Table 12** for full results comparing nonbinary youths' Negative Healthcare Experiences scores to binary youth.

When comparing each of the three nonbinary groups (i.e., nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) to binary transmasculine youth, there were no significant differences in Negative Healthcare Experiences scores after adjusting for age and race/ethnicity. After adjusting for age and race/ethnicity, nonbinary AFAB had a Negative Healthcare Experiences score that was 0.34 (-0.53, 1.21) points higher than binary transmasculine youth. Nonbinary AMAB had a Negative Healthcare Experiences score that was 0.80 (-0.62, 2.22) points higher than binary transmasculine youth. Nonbinary unknown SAAB youth had a Negative Healthcare Experiences score that was 0.33 (-1.24, 1.91) points higher than binary transmasculine youth. However, none of these differences were statistically significant. See **Table 13** for full results comparing nonbinary youths' Negative Healthcare Experiences scores to binary transmasculine youth.

When comparing each of the three nonbinary groups (i.e., nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) to binary transfeminine youth, there were significant differences in Negative Healthcare Experiences scores. Nonbinary AFAB youth had a Negative Healthcare Experiences score 1.01 ($p = 0.04$) points higher than binary transfeminine youth and nonbinary AMAB youth had a Negative Healthcare Experiences score 1.55 ($p = 0.04$) points higher than binary transfeminine youth. However, after adjusting for age and race/ethnicity, these differences were no longer statistically significant. Nonbinary AFAB youth had a Negative Healthcare Experiences score 0.99 (-0.01, 1.98) points higher than binary transfeminine youth and nonbinary AMAB youth had a Negative Healthcare Experiences score 1.45 (-0.04, 2.94)

points higher than binary transfeminine youth. Nonbinary unknown SAAB youth had a Negative Healthcare Experiences score 0.97 (-0.65, 2.60) points higher than binary transfeminine youth, which was not statistically significant. See **Table 14** for full results comparing nonbinary youths' Negative Healthcare Experiences scores to binary transfeminine youth.

Table 10. Average Negative Healthcare Experiences Scores: Nonbinary compared to Binary Youth

	Binary (n = 141)	Nonbinary (n=40)
Negative Healthcare Experiences (Mean, SD)	1.93 (0.16)	2.45 (0.33)

Table 11. Average Negative Healthcare Experiences Scores among Gender Identity Subgroups

	Binary Transmasculine (n = 103)	Binary Transfeminine (n=38)	Nonbinary AFAB (n=24)	Nonbinary AMAB (n=8)	Nonbinary Unknown SAAB (n=8)
Negative Healthcare Experiences (Mean, SD)	2.11 (0.18)	1.45 (0.31)	2.46 (0.37)	3 (0.85)	1.88 (0.91)

Table 12. Unadjusted and Adjusted Negative Healthcare Experiences: Nonbinary Compared to Binary Youth

	Coefficient	P Value	95% CI
Unadjusted			
Binary	Reference Group		
Nonbinary	0.52	0.13	(-0.15, 1.19)
Adjusted			
Binary	Reference Group		
Nonbinary	0.63	0.07	(-0.06, 1.33)

Table 13. Unadjusted and Adjusted Negative Healthcare Experiences: Nonbinary Compared to Binary Transmasculine Youth

	Coefficient	P Value	95% CI
Unadjusted			
Binary Transmasculine	Reference Group		
Binary Transfeminine	-0.66	0.068	(-1.37, 0.05)
Nonbinary AFAB	0.35	0.41	(-0.50, 1.20)
Nonbinary AMAB	0.89	0.20	(-0.48, 2.267)
Nonbinary unknown SAAB	-0.23	0.74	(-1.60, 1.14)
Adjusted			
Binary Transmasculine	Reference Group		
Binary Transfeminine	-0.64	0.09	(-1.38, 0.09)
Nonbinary AFAB	0.34	0.44	(-0.53, 1.21)
Nonbinary AMAB	0.80	0.27	(-0.62, 2.22)
Nonbinary Unknown SAAB	0.33	0.68	(-1.24, 1.91)

Table 14. Unadjusted and Adjusted Negative Healthcare Experiences: Nonbinary Compared to Binary Transfeminine Youth

	Coefficient	P Value	95% CI
Unadjusted			
Binary Transfeminine	Reference Group		
Nonbinary AFAB	1.01	0.04	(0.04, 1.99)
Nonbinary AMAB	1.55	0.04	(0.10, 3.01)
Nonbinary unknown SAAB	0.43	0.56	(-1.03, 1.88)
Adjusted			
Binary Transfeminine	Reference Group		
Nonbinary AFAB	0.99	0.05	(-0.01, 1.98)
Nonbinary AMAB	1.45	0.06	(-0.04, 2.94)
Nonbinary Unknown SAAB	0.97	0.24	(-0.65, 2.60)

3.5 HEALTHCARE AVOIDANCE

The percentage of youth reporting healthcare avoidance did not significantly vary across gender identities ($p = 0.39$). Healthcare avoidance was most prevalent among binary transmasculine youth (42.72%) and nonbinary AFAB youth (41.67%). Alternatively, nonbinary unknown SAAB youth were the least healthcare avoidant with only one participant (12.50%) who reported healthcare avoidance. See **Table 15** for full results of the percentage of respondents reporting healthcare avoidance across for each gender identity subgroup.

There was a statistically significant difference for healthcare avoidance between binary transmasculine youth and binary transfeminine youth. Binary transfeminine youth had significantly lower odds of healthcare avoidance after adjusting for age and race/ethnicity (OR: 0.34; 0.14, 0.84); see **Table 17**. For this reason, nonbinary youth were compared to binary transmasculine and binary transfeminine youth separately when conducting the statistical analyses.

When comparing nonbinary youth to binary youth, there was no statistically significant difference in healthcare avoidance after adjusting for age and race/ethnicity. After controlling for sociodemographics, nonbinary youth had 0.79 (0.35, 1.74) times the odds of being healthcare avoidant than binary youth. See **Table 16** for full results comparing nonbinary youths' healthcare avoidance to binary youth.

When comparing each of the three nonbinary groups (i.e., nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) to binary transmasculine youth, there were no significant differences in healthcare avoidance after adjusting for age and race/ethnicity. After adjusting for sociodemographics, nonbinary AFAB had 0.64 (0.24, 1.70) times the odds of being

healthcare avoidant compared to binary transmasculine youth. Nonbinary AMAB had 0.60 (0.12, 2.88) times the odds of being healthcare avoidant compared to binary transmasculine youth. Nonbinary unknown SAAB youth had 0.26 (0.02, 2.81) times the odds of being healthcare avoidant compared to binary transmasculine youth. However, none of these differences were statistically significant. See **Table 17** for full results comparing nonbinary youths’ healthcare avoidance to binary transmasculine youth.

When comparing each of the three nonbinary groups (i.e., nonbinary AFAB, nonbinary AMAB, and nonbinary unknown SAAB) to binary transfeminine youth, there were no significant differences in healthcare avoidance even after adjusting for age and race/ethnicity. After adjusting for sociodemographics, nonbinary AFAB had 1.90 (0.60, 6.05) times the odds of being healthcare avoidant compared to binary transmasculine youth. Nonbinary AMAB had 1.78 (0.33, 9.53) times the odds of being healthcare avoidant compared to binary transmasculine youth. Nonbinary unknown SAAB youth had 0.76 (0.07, 8.94) times the odds of being healthcare avoidant compared to binary transmasculine youth. However, none of these differences were statistically significant. See **Table 18** for full results comparing nonbinary youths’ healthcare avoidance to binary transfeminine youth.

Table 15. Percentage of Healthcare Avoidance among Gender Identity Subgroups

	Binary Transmasculine (n = 103)	Binary Transfeminine (n=38)	Nonbinary AFAB (n=24)	Nonbinary AMAB (n=8)	Nonbinary Unknown SAAB (n=8)	Result of Group Comparison
Healthcare Avoidance (n, %)	44 (42.72%)	10 (26.32%)	10 (41.67%)	3 (37.50%)	1 (12.50%)	p = 0.39

Table 16. Unadjusted and Adjusted Healthcare Avoidance: Nonbinary Compared to Binary Youth

	Odds Ratio	P Value	95% CI
Unadjusted			
Binary	Reference Group		
Nonbinary	0.94	0.86	(0.44, 1.98)
Adjusted			
Binary	Reference Group		
Nonbinary	0.79	0.55	(0.35, 1.74)

Table 17. Unadjusted and Adjusted Healthcare Avoidance: Nonbinary Compared to Binary Transmasculine Youth

	Odds Ratio	P Value	95% CI
Unadjusted			
Binary Transmasculine	Reference Group		
Binary Transfeminine	0.47	0.07	(0.21, 1.08)
Nonbinary AFAB	0.91	0.84	(0.37, 2.24)
Nonbinary AMAB	0.76	0.72	(0.17, 3.37)
Nonbinary Unknown SAAB	0.32	0.31	(0.03, 2.95)
Adjusted			
Binary Transmasculine	Reference Group		
Binary Transfeminine	0.34	0.02	(0.14, 0.84)
Nonbinary AFAB	0.64	0.37	(0.24, 1.70)
Nonbinary AMAB	0.60	0.52	(0.12, 2.88)
Nonbinary Unknown SAAB	0.26	0.27	(0.02, 2.81)

Table 18. Unadjusted and Adjusted Healthcare Avoidance: Nonbinary Compared to Binary Transfeminine

Youth

	Odds Ratio	P Value	95% CI
Unadjusted			
Binary Transfeminine	Reference Group		
Binary Transmasculine	2.12	0.074	(0.93, 4.85)
Nonbinary AFAB	1.93	0.24	(0.65, 5.73)
Nonbinary AMAB	1.62	0.56	(0.33, 8.06)
Nonbinary Unknown SAAB	0.68	0.74	(0.07, 6.79)
Adjusted			
Binary Transfeminine	Reference Group		
Binary Transmasculine	2.97	0.02	(1.19, 7.42)
Nonbinary AFAB	1.90	0.28	(0.60, 6.05)
Nonbinary AMAB	1.78	0.50	(0.33, 9.53)
Nonbinary Unknown SAAB	0.76	0.83	(0.07, 8.94)

3.6 PARENTAL SUPPORT

Binary transgender youth reported slightly higher parental support than nonbinary youth, 8.11 compared to 7.48. See **Table 19** for full results comparing average parental support of binary youth to nonbinary youth. Binary transmasculine youth reported the highest parental support (8.19). Nonbinary AMAB youth reported high parental support as well (8.14). Nonbinary unknown SAAB youth reported the lowest parental support (7.00). See **Table 20** for full results of the average parental support for each gender identity.

Table 19. Average Parental Support: Binary Compared to Nonbinary Youth

	Binary (n = 141)	Nonbinary (n=40)
Average Parental Support (mean, SD)	8.11 (0.21)	7.48 (0.41)

Table 20. Average Parental Support Across Gender Identities

	Binary Transmasculine (n = 103)	Binary Transfeminine (n=38)	Nonbinary AFAB (n=24)	Nonbinary AMAB (n=8)	Nonbinary Unknown SAAB (n=8)
Average Parental Support (mean, SD)	8.19 (0.22)	7.85 (0.53)	7.35 (0.49)	8.14 (0.70)	7.00 (2.08)

3.7 RELATIONSHIP BETWEEN STRESS FACTORS AND HEALTHCARE AVOIDANCE

When examining the impact of negative health experiences on healthcare avoidance, there was a statistically significant relationship between negative healthcare experiences and healthcare avoidance when controlling for sociodemographics, gender identity, positive healthcare experiences, and parental support. For a one-point increase in Negative Healthcare Experiences score, transgender youth had 2.02 (1.58, 2.59) times the odds of being healthcare avoidant.

3.8 IMPACT OF RESILIENCY FACTORS ON THE RELATIONSHIP BETWEEN STRESS FACTORS AND HEALTHCARE AVOIDANCE

There was not a statistically significant interaction between negative healthcare experiences and parental support impacting healthcare avoidance when controlling for sociodemographics, gender identity, and positive healthcare experiences (OR: 1.05; 0.97, 1.14).

There was not a statistically significant interaction between negative healthcare experiences and positive healthcare experiences impacting healthcare avoidance when controlling for sociodemographics, gender identity, and parental support (OR: 0.98; 0.93, 1.04).

4.0 DISCUSSION

4.1 POSITIVE HEALTHCARE EXPERIENCES

Average positive healthcare experiences were low across all gender identity groups, ranging from 2.25 to 4.25. This was not surprising since many of these experiences involved discussing gender and referring one to gender-affirming resources, which are generally not included in routine clinical care that often assumes cisgender identity. The CHP Gender Clinic is one of the few, if not the only, gender-affirming clinic providing care to adolescent transgender youth in Allegheny County. Consequently, youth participating in this study are likely not to have had many opportunities to experience care that addresses their gender identity.

Nonbinary youth had slightly more positive healthcare experiences (Coefficient: 0.42 ; -0.46, 1.29) compared to binary youth; although, this was not statistically significant. This slight increase in positive healthcare experiences is likely driven by the nonbinary AMAB youth who, compared to the other nonbinary youth, had 1.21 (-0.58, 3.01) and 1.15 (-0.73, 3.03) points higher for their Positive Healthcare Experiences score than binary transmasculine and binary transfeminine youth, respectively; however, this was not statistically significant. Alternatively, nonbinary AFAB (Coefficient: 0.06; 1.04, 1.16) and nonbinary unknown SAAB (Coefficient: 0.83; -1.16, 2.81) youth had marginally more positive healthcare experiences compared to binary transmasculine youth; nonbinary AFAB (Coefficient: 0.003; -1.25, 1.26) and nonbinary

unknown SAAB youth (Coefficient: 0.77; -1.28, 2.82) also had marginally more positive healthcare experiences compared to binary transfeminine youth. From this study, it is unclear why nonbinary AMAB youth would have more positive healthcare experiences compared to other nonbinary youth.

4.2 NEGATIVE HEALTHCARE EXPERIENCES

Average Negative Healthcare Experiences scores were, unexpectedly, low across all gender identity groups ranging from 1.45 to 3.00. Healthcare discrimination is a reality for many transgender individuals. In the 2015 U.S. Transgender Survey of nearly 28,000 transgender individuals, 33% of respondents reported experiencing anti-transgender discrimination in the past year.¹⁹ Although, this survey only included adults, other adolescent research indicates that anti-transgender discrimination is a problem for many transgender youth. In a qualitative study examining barriers to gender-affirming care for transgender youth in Seattle, WA, researchers found that inconsistent use of one's preferred name/pronouns and few accessible providers trained in gender-affirming care were common barriers to care.¹⁰ Respondents reported that, in their healthcare interactions, providers emphasized rigid gender roles, used outdated/offensive language, lacked an interest or had a moral opposition to gender-affirming healthcare, and that youth experienced judgmental/hostile clinical interactions, all of which were assessed in this study of transgender youth.¹⁰ It is possible that many individual youth do experience negative/discriminatory care, but do not experience many different types of negative/discriminatory healthcare experiences and that is why the Negative Healthcare

Experiences score was low across gender identities. However, we cannot be certain without further research.

Despite the low Negative Healthcare Experiences score, there was more variation in negative healthcare experiences compared to positive healthcare experiences. Nonbinary youth had slightly more negative healthcare experiences than binary youth (Coefficient: 0.63; -0.06, 1.33). This is likely driven by nonbinary youths' experiences compared to binary transfeminine youth. Before adjusting for sociodemographics, both nonbinary AFAB and nonbinary AMAB had higher Negative Healthcare Experiences scores than binary transfeminine youth, 1.01 ($p = 0.04$) and 1.55 ($p = 0.04$) points higher, respectively. After controlling for sociodemographics, these greater Negative Healthcare Experiences scores were not statistically significant: nonbinary AFAB had a score 0.985 (-0.006, 1.98) points higher and nonbinary AMAB had a score 1.45 (-0.04, 2.94) points higher than binary transfeminine in terms of Negative Healthcare Experiences score. It is possible that there was simply not enough power to detect a significant difference because of the few nonbinary AFAB and nonbinary AMAB youth included in this study.

4.3 HEALTHCARE AVOIDANCE

Across gender identities, approximately 25 – 40% of youth reported being healthcare avoidant at some point, except for Nonbinary unknown SAAB youth of which only 12.50% of youth reported being healthcare avoidant. This aligns with previous research on transgender adults which found that 23% of transgender individuals had chosen to forgo healthcare because of a fear of discrimination.¹⁴

When comparing nonbinary and binary youth, nonbinary youth had lesser odds of being healthcare avoidant than binary youth (OR: 0.79; 0.35, 1.74); although, this difference was not statistically significant. However, when comparing nonbinary youth to binary transmasculine and binary transfeminine youth, there were two different phenomena. Compared to binary transmasculine youth, nonbinary AFAB (OR: 0.64; 0.24, 1.70), nonbinary AMAB (OR: 0.60; 0.12, 2.88), and nonbinary unknown SAAB (OR: 0.26; 0.02, 2.81) all had lesser odds of being healthcare avoidant. Alternatively, nonbinary AFAB (OR: 1.90; 0.60, 6.05) and nonbinary AMAB (OR: 1.78; 0.33, 9.53) had greater odds of being healthcare avoidant compared to binary transfeminine youth while nonbinary unknown SAAB youth had lesser odds of being healthcare avoidant (OR: 0.76; 0.07, 8.94).

Nonbinary AFAB and AMAB likely had greater odds of being healthcare avoidant compared to binary transfeminine youth because they experience more negative healthcare experiences and since increased negative healthcare experiences was significantly associated with being healthcare avoidant (OR: 2.02; 1.58, 2.59).

4.4 RELATIONSHIP BETWEEN STRESS FACTORS AND HEALTHCARE

AVOIDANCE

Increased negative healthcare experiences was significantly associated with healthcare avoidance (OR: 2.02; 1.58, 2.59); this finding supports the relationship between negative healthcare experiences/discrimination in Gender Minority Stress and Resilience. However, since this study is cross-sectional, we do not know the causal relationship between these two factors. Consequently, this evidence cannot support the directionality that negative healthcare

experiences/discrimination lead to negative expectations and concealment, in this case healthcare avoidance.

4.5 IMPACT OF RESILIENCY FACTORS ON THE RELATIONSHIP BETWEEN STRESS FACTORS AND HEALTHCARE AVOIDANCE

Parental support did not significantly moderate the relationship between negative healthcare experiences and healthcare avoidance (OR: 1.05; 0.97, 1.14). This may be because parental support was relatively high across gender identity groups due to the parental support measure only assessing the support of the most supportive parent. Measuring combined parental support may have resulted in more variation of parent support and may have allowed a better opportunity to find a moderating relationship for parental support, if it were to exist. Also, because this sample of youth were accessing care at the Gender Clinic, these youth are more likely to have supportive parents.

Positive healthcare experiences did not significantly moderate the relationship between negative healthcare experiences and healthcare avoidance (OR: 0.98; 0.93, 1.04). This may be because positive healthcare experiences were relatively low across all gender identity groups or, perhaps, positive healthcare experiences do not moderate the relationship between negative healthcare experiences and healthcare avoidance. More research is needed to understand the impact of positive healthcare experiences for transgender youth.

4.6 LIMITATIONS

The data presented mostly reflects the experiences of White transgender youth who are receiving high quality gender-affirming care from the Gender Clinic at CHP. Consequently, this sample of transgender youth is likely more highly privileged and have better access to healthcare than many transgender youth across the nation. Thus, the Negative Healthcare Experiences scores for each of the gender identity subgroups were likely lower in this study than what the average transgender youth's experiences would be in the U.S. Consequently, we would need a more diverse sample that was not recruited from a specialized clinic, such as the Gender Clinic, to discover the true differences in healthcare experience and avoidance.

Further, the sample size of this study was low which hindered analysis when looking for differences among the nonbinary subgroups in which some had fewer than ten participants. With a greater sample size, there would be more power to detect differences in experiences across subgroups of gender identities.

Third, this survey did not collect any sociodemographic information beyond age and race/ethnicity. Family socioeconomic status and health insurance status and type may impact one's positive and negative healthcare experiences and avoidance; however, we were not able to control for these variables.

Fourth, parental support was measured using the support of only one parent; measuring the combined parental support would allow a better picture of parental support since parents may differ in their support of their youth's identity. This is important since the support of both parents impacts a youth's healthcare experiences. Also, this sample of youth likely have more supportive parents compared to transgender youth at large because these youth are receiving care from the Gender Clinic.

Lastly, eight (20%) of the nonbinary youth who did not indicate their SAAB failed to answer many of the survey questions. Thus, much of the data on the nonbinary unknown SAAB group is calculated from fewer than eight participants. However, I thought it was important to include this group in the analysis and report their data because this is a significant proportion of the nonbinary group who, for some unidentifiable reason, did not answer many of the survey items used in this analysis. Perhaps, this group of youth have had previous negative experiences within healthcare and are weary to share information on their experiences. As a result, this group of youth may be particularly vulnerable in comparison to other transgender youth.

4.7 CLINICAL AND RESEARCH IMPLICATIONS

Findings indicate that nonbinary youth, especially nonbinary AFAB and nonbinary AMAB youth, may experience more negative healthcare experiences than binary transgender youth. Consequently, these youth may be a particularly vulnerable subpopulation of transgender youth. Further, findings indicate that nonbinary AFAB and AMAB youth may be more likely to be healthcare avoidant and be weary of accessing healthcare. Thus, healthcare providers should be cognizant that nonbinary youth, particularly nonbinary AFAB and AMAB youth, may be more cautious in healthcare encounters and be aware that these youth may have unmet health needs because of avoiding and delaying healthcare.

Eight (20.00%) of the nonbinary youth did not indicate their SAAB. Although it is unclear why these youth did not share their SAAB and other information, this may be an indication that some nonbinary youth do not feel comfortable sharing information with researchers and healthcare providers. Healthcare providers should meet nonbinary youth where

they are, practicing patience for youth who may not be ready to fully open up and express themselves and their needs.

Further research with transgender youth should recognize the unique identities of nonbinary youth and examine nonbinary youth separately from binary youth to discover the unique experiences of each gender identity. Additionally, recruitment for further research should include transgender youth outside a clinical setting in order to understand the true experiences of transgender youth who may or may not have regular access to healthcare or may have limited contact with healthcare settings because of healthcare avoidance.

5.0 CONCLUSIONS

There were no significant differences in healthcare experiences and healthcare avoidance for nonbinary youth compared to binary youth. However, this study's relatively small sample size may not have allowed enough power to detect significant differences, especially considering that some nonbinary groups had fewer than ten respondents.

Despite this limitation, this study provides preliminary evidence indicating that there may be differences in negative healthcare experiences and healthcare avoidance for nonbinary youth. Compared with binary transfeminine youth, nonbinary youth, particularly nonbinary AFAB and nonbinary AMAB, had more negative healthcare experiences. Concerning healthcare avoidance, nonbinary youth, particularly nonbinary AFAB and nonbinary AMAB, were more likely to report healthcare avoidance.

In regard to theory, findings from this study supported Gender Minority Stress and Resilience. Negative healthcare experiences were associated with healthcare avoidance. However, the mechanism underlying this relationship is unclear. More research is needed to know that negative healthcare experiences leads to modification of behavior towards protective behaviors such as healthcare avoidance, as predicted by Gender Minority Stress and Resilience.

Concerning resilience specifically, neither parental support nor positive healthcare experiences moderated the relationship between negative healthcare experiences and healthcare avoidance. More research is needed to understand the resiliency effects of parental support to

know the mechanism in which parental support promotes positive health outcomes. Similarly, more research should focus on positive/gender-affirming healthcare experiences to understand the impact of these experiences on transgender youths' health and wellbeing.

This study is one of the first of its kind to compare nonbinary youth's experiences to binary youth. More research is needed to further confirm and build onto Gender Minority Stress and Resilience. Ultimately, further research is imperative to understand the unique healthcare experiences of nonbinary youth so that healthcare providers can appropriately care for this population according to their specific needs so that these youth may have more positive health outcomes.

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