Assessing Transgender Patient’s Comfortability Disclosing their Gender Identity and Trans-specific Healthcare needs as Predicted by Healthcare Provider Perceived Knowledge of Trans-specific Healthcare.

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**Abstract:**

*Background:*

Research has investigated the adverse experiences of transgender patients and the reasons as to why they may not seek out or return to care. There are many factors which contribute to these adverse experiences including misgendering, inappropriate and transphobic questioning, and the lack of knowledge around trans-specific healthcare by healthcare providers. This study aims to build on this literature by assessing the relationship between perceived healthcare provider knowledge and transgender patient comfortability disclosing their transgender status and trans-specific care.

*Research Question*:

Does perceived provider knowledge of transgender healthcare issues, affect the comfortability of transgender patients discussing their gender identity and trans-specific healthcare?

*Methods:*

This analysis was conducted using data from the Virginia Transgender Health Initiative Study (THIS) which was a cross-sectional, quantitative survey conducted between September 2005 and July 2006. Univariate analysis was conducted to provide descriptive statistics. Bivariate analysis was conducted between the dependent variable of comfortability, the independent variable of perceived knowledge, and all covariates. An ordinal, multinomial logistic regression was used to build the final model.

*Results:*

Results of the final model showed that transgender patients who report being more comfortable disclosing their gender identity and discussing their trans-specific healthcare are more likely to perceive their providers as knowledgeable with statistical significance achieved at the level of being very knowledgeable, which had an OR of 3.99 (95%CI: 1.12-14.86).

*Conclusion:*

There is a significant association between a healthcare provider being perceived as very knowledgeable and transgender patient’s comfortability discussing their healthcare needs. This finding points to the need for provider education interventions.

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**Introduction:**

Gender—which is defined as the cultural roles, behaviors, activities, and attributes expected of people based on their sex— exists on a spectrum.1 Cisgender people—individuals whose gender identity is the same as the sex they were assigned at birth—define the extremes of this spectrum as man and woman.1 Transgender people—individuals whose current gender identity differs from the sex they were assigned at birth—can operate both at these binary points, and in the nonbinary space in-between them.1 First, binary transgender people are those who transition from Male-to-Female or from Female-to-Male.1 On the other hand, nonbinary transgender people encompass a range of gender expression.1 While some nonbinary transgender people feel comfortable in a more fixed trans-masculine or trans-feminine gender, there are other people who identify as gender fluid, gender queer and gender nonconforming. For these people, their gender expression may change and vary along this gender spectrum with time.1

Transgender people face several barriers to accessing general healthcare—much less trans-specific care—which precipitates the disproportionate adverse health outcomes experienced by this community.2-4 A prominent barrier is healthcare provider discrimination;

transgender patients are less likely to seek out care if they feel as though they may be victims of discrimination. For example, in a study focused on the Emergency Department (ED) visits of transgender people, half of the respondents stated that they would not return to the ED they had visited due, en large, to the discrimination they faced.2

Healthcare provider discrimination towards transgender people ranges from purposefully not using someone’s correct pronouns to direct and hostile transphobia.2-7 This discrimination can be inadvertent, as shown by the findings that many non-specialized healthcare providers approach trans-specific healthcare with cis-normative attitudes.6 This inadvertent offense is often the result of healthcare providers not being aware of the specific issues that transgender patients face, and many transgender patients report having to educate their providers on the specifics of their care.7

Hormone replacement therapy (HRT) is a common area in which transgender patients report having to educate their healthcare providers. For example, from that same ED study, one participant reported that their healthcare provider was not aware of how her HRT could affect the presentation of her cardiac symptoms.2 She reported having to explain the possible effects to her physician while having active chest pain.2 She stated that the provider was overlooking her symptoms, as they assumed she would present with the symptoms more common in cis-gender men.2

However, even if a healthcare provider is educated, there exist limitations in the current knowledge surrounding trans-specific healthcare. For example, there is limited research addressing the effects that hormone replacement therapy (HRT) has on the clinical efficacy of pre-exposure prophylaxis (PrEP) which is an antiretroviral regime that prevents the acquisition of HIV.8 Moreover many transgender people prioritize their HRT over PrEP, predisposing this population to higher-rates of HIV seroconversion.

Along with these inadvertent offenses, other research has documented more severe and purposeful transphobia expressed by healthcare providers. These reports of discrimination include misgendering, being asked inappropriate and dehumanizing questions about their gender identity, and inconsistency in their healthcare access due to being denied care or being too afraid to return to a provider.2,3 Specifically, in geographical areas of the US which are known for high political conservatism and Christian Evangelicalism, higher rates of transphobia and cissexism in the healthcare setting have been reported.3 These areas are usually rural, and the transgender people living there report being more likely to experience discrimination when accessing local care.6

For example, A trans-masculine study participant described the questions he was asked while seeking care.2 He stated that when seen by the provider, he was bluntly asked to remove his chest binder—a device used to minimize the appearance of breasts.9 The patient asked why it was necessary, to which the provider continued to insist on its removal without explanation. Subsequently, the provider asked the patient about his genitalia by asking if he had had “the surgery.” The patient noted that his genitals were not relevant to the issue prompting his visit. Overall, the participant reported that they would not return to the same provider as they made him feel dysphoric.

As healthcare interventions are designed to improve healthcare accessibility for this population, interventions centered around addressing healthcare provider discrimination and lack of education could address necessary and immediate issues faced by transgender patients. The purpose of this present study is to assess the level of comfortability transgender patients feel toward discussing their gender identity and healthcare concerns with their healthcare providers.

Moreover, the guiding research question for this study is: Does perceived provider knowledge of transgender healthcare issues, previous experiences of having to educate their doctors on transgender healthcare issues, previous experiences of healthcare provider discrimination, and the presence of all gender restrooms affect the comfortability of transgender patients to discuss their gender identity and trans-specific healthcare?

**Methods:**

*Data Source & Study Design:*

This study uses data from the Virginia Transgender Health Initiative Study (THIS) which was a cross-sectional, quantitative survey conducted between September 2005 and July 2006.10 The study included 387 respondents with a final analysis sample of 350. The study includes participants from 60 of the 136 cities and counties in Virginia. Funding for this data set was provided by the Virginia Department of Health, Division of Disease Prevention, the United States Department of Health and Human Services, and the Centers for Disease Control and Prevention.

The public version of the data set was used for the following statistical analysis. This version has several omitted answer choices to survey questions as to protect the identities of study participants. Variables utilized in this analysis with omitted answer choices are described as below.

*Data Collection Procedures:*

The study was publicized with the help of The Virginia Transgender Task Force (TTF). TTF is composed of community members, service providers and other allies who discussed the study with community members and professional audiences. Moreover, a community-based sample was ascertained via snowball sampling for this study.

The inclusion criteria for the sample were individuals aged 18 years and older who lived in or attended school in Virginia during the data collection period, and who self-identified as transgender. Being transgender was assessed by the question, “Do you consider yourself to be a transgender person?” Participants had to answer yes in order to continue the survey. The survey was administered by either a mail-in questionnaire or an on-site questionnaire.

*Measures:*

The main measure of this analysis is based on question 26.c of the survey “How comfortable are you discussing your transgender status and transgender-specific health care needs with your doctor?” The answer choices included: very uncomfortable, uncomfortable, comfortable, and very comfortable.

The main variables considered for use in the model were based on questions 26.d, 26.e, 28 and 29. Question 26.d was “How knowledgeable is your doctor about transgender health care issues?” The answer choices included: not at all knowledgeable, somewhat knowledgeable, knowledgeable, and very knowledgeable.

Question 26.e was “Have you ever had to educate your doctor about your health care needs as a transgender person?” The answer choices included yes and no.

Question 28 was “Have you ever experienced discrimination by a doctor or other health care provider due to your transgender status or gender expression?” The answer choices included: Yes, No, and Don’t know/unsure.

Question 29 was “Has the lack of appropriate restroom facilities ever prevented you from seeing a doctor or getting regular health care?” The answer choices included: Yes, No and Don’t know/unsure.

The covariates considered for inclusion were sex, gender, sexual orientation, racial/ethnic background, age, education, employment status, individual income from 2004, and health insurance status.

Sex was assessed by the question “What was your physical, assigned sex at birth?” Answer choices included male and female.

Gender was assessed by the question “What is your present gender identity?” Answer choices included: man, woman, transgender, androgynous, questioning, gender queer, and other. Of note, gender was assessed after participants had already self-identified as transgender via the initial eligibility questionnaire. The discrepancies here exist because some transgender people prefer to refer to themselves as a gender identity other than transgender.11

Sexual Orientation was assessed by the question “What is your sexual orientation?” Answer choices included: heterosexual, gay, lesbian, bisexual, questioning, queer, asexual (I’m not interested in sex), I do not label my sexual orientation, and other.

Racial/Ethnic background was assessed by the question “What is your racial/ethnic background?” Answer choices included African American (Black), White (Caucasian), Hispanic or Latino/Latina, Native American/American Indian, Asian or Pacific Islander, Caribbean, and Other (please specify), which had a write in option. The answer choices Asian or Pacific Islander, Caribbean, and Other (please specify) were omitted from the public version of this data set.

Age was assessed by the question “Please check the box that represents your age category.” Answer choices included: 18-24, 25-34, 35-44, 45-54, 55-64, and 65 or older.

Education was assessed by the question “How much education have you completed?” Answer choices included 8th grade or less, some high school (no diploma), high school graduate/GED, technical certificate/Associate’s degree (including cosmetology), some college (no degree), college graduate, some graduate school (no degree), graduate or professional degree.

Employment status was assessed by the question “What is your current employment status?” Answer choices included: full time (35 hours or more per week), part time (fewer than 35 hours per week), student, retired, out of work, on disability, currently unemployed (not a student, retired, or disabled), and other (please specify), which had a write-in option. Other (please specify) was omitted from the public version of this data set.

Individual Income in 2004 was assessed by the question “Which of the following categories best describes your individual income in 2004 from all sources before taxes? Check one only.” Answer choices included: I had no source of income, $1 to $4,999, $5,000 to $9,999, $10,000 to $16,999, $17,000 to $23,999, $24,000 to $29,999, $30,000 to $39,999, $40,000 to $49,999, $50,000 to $69,999, $70,000 to $99,999, $100,000 or more.

Health insurance status was assessed by the question “Do you currently have health insurance?” Answer choices included yes and no.

*Statistical Analysis:*

To be included in the following analysis, participants had to have answered “yes” to question 26 “Do you have a doctor you see regularly for care?” Out of the 350 study participants, 141 answered this question. All other cases were excluded from this analysis. This exclusion of a large amount of the study population is consistent with current literature which shows that transgender people face many barriers to accessing appropriate routine medical care.2-7

Univariate analysis was performed for each of the variables above. Each variable in this dataset is categorical and so frequencies were used to provide descriptive statistics. After univariate analysis a bivariate analysis was conducted between the dependent variable patient comfort and the remaining variables, and between the independent variable perceived provider knowledge and the remaining variables. Cochran-Armitage Trend tests were performed between a dichotomized version of patient comfort and both age category and highest level of education.

An ordinal, multinominal logistic regression was used to build the study model. This model was chosen since the dependent variable, patient comfort, has four categories which are ordinal in nature as they have an implicit hierarchy. Purposeful selection was used to determine the inclusion of covariates in the final model. Statistical significance of explanatory variables included in the model was considered at an alpha of 0.05. Inclusion of covariates depended both on statistical significance and previously established importance from existing literature. Model fit was assessed using AIC values for the crude and adjusted models.

All analysis were conducted in R Studio version 2023.03.0+386.

**Results:**

Table 1 shows the results of the univariate analysis. There were 97 people assigned male at birth and 41 people assigned female at birth in the sample. 47 of the respondents identify as transgender, 46 identify as a woman, 34 identify as a man, 3 identified as androgynous, 3 identified as gender queer, 2 identified as questioning and 6 identified as a gender that was not listed.

With regards to sexual orientation, 36 respondents identified as heterosexual, 28 identified as gay, 19 reported that they don’t label their sexual orientation, 18 identified as lesbian, 17 identified as bisexual, 8 identified as queer, 7 identified as questioning and 6 identified as asexual.

With regards to race, 91 of the respondents were White, 40 were Black, 4 identified as Latine, 2 identified as Indigenous, and 4 identified as other.

Age was assessed by category for this study. 16 respondents were between 18-24, 27 were between 25-34, 41 were between 35-44, 39 were between 45-54 and 18 were 55 or older.

The highest level of education obtained was assessed for the participants in this population. The most common level of education was some college, with 37 respondents, followed by graduating college with 28 respondents, graduating high school or having a GED with 22 respondents, having a graduate or professional degree with 21 respondents, having a technical certificate/Associates degree with 15 respondents, having completed some graduate school with 11 respondents, having completed some high school with 6 respondents and having completed 8th grade or less with 1 respondent.

With regards to employment status, 89 respondents reported working full-time, 14 reported working part time, 13 reported being out of work and on disability, 7 reported being currently unemployed, 7 reported being retired, 6 reported being students, and 5 reported some other form of employment.

Yearly income for 2004 was ascertained in categories. 8 respondents reported having an income between $1 - $4,999, 11 respondents reported having an income between $5,000 - $9,999, 18 respondents reported having an income between $10,000 - $16,999, 16 respondents reported having an income between $17,000 - $23,999, 12 respondents reported having an income between $24,000 - $29,999, 20 respondents reported having an income between $30,000 - $39,999, 12 respondents reported having an income between $40,000 - $49,999, 10 respondents reported having an income between $50,000 - $69,999, 18 respondents reported having an income between $70,000 - $99,999, 12 respondents reported having an income of $100,000 or more and 4 respondents reported having no source of income.

With regards to health insurance status, 116 respondents reported having insurance and 25 reported not having insurance.

When answering the question “How comfortable are you discussing your transgender status and transgender-specific health care needs with your doctor?” 52 respondents reported being very comfortable, 40 reported being comfortable, 11 reported being uncomfortable, and 38 reported being very uncomfortable.

When answering the question “How knowledgeable is your doctor about transgender-based care?” 34 respondents reported their provider being very knowledgeable, 39 reported them being knowledgeable, 51 reported them being somewhat knowledgeable, and 17 reported them being not at all knowledgeable.

From primary test models it was found that the inclusion of the questions “Have you ever had to educate your doctor about your health care needs as a transgender person?” “Have you ever experienced discrimination by a doctor or other health care provider due to your transgender status or gender expression?” and “Has the lack of appropriate restroom facilities ever prevented you from seeing your doctor or getting regular health care?” did not significantly correlate with patient comfortability. Thus, they were not included in further analysis.

Table 2 shows the results of the bivariate analysis between patient comfortability, perceived provider knowledge, and all possible covariates. As all variables in this analysis are categorical, p-values were assessed with Chi-squared tests. Gender, sexual orientation, race, employment status, and individual income in 2004 were not statistically significant.

Age and highest level of education were close to being statistically significant with p-values of 0.0561 and 0.07447 respectively. Age showed that participants in the categories above age 35 had more responses of being comfortable or very comfortable discussing trans-specific healthcare with their providers. Similarly with education, those who achieved higher levels of education had more reports of being comfortable or very comfortable.

Subsequently, comfort was dichotomized into the categories of comfortable—consisting of the answers “very comfortable,” and “comfortable”— and uncomfortable—consisting of the answers “very uncomfortable,” and “uncomfortable”— to run Cochran-Armitage trend tests for both age and highest level of education. Age remained close, but not quite, significant with a p-value of 0.055. Highest level of education achieved statistical significance, with a p-value of 0.04985.

Answers to the question “How knowledgeable is your doctor about transgender-based care?” was significantly correlated with patient comfort with a p-value of <0.001. Those who perceived their providers to be very knowledgeable had more responses of higher levels of comfort.

Table 3 shows the results of the bivariate analysis between the independent variable perceived provider knowledge, the dependent variable patient comfortability and all considered covariates. Sex, gender, sexual orientation, age category, highest level of education, employment status, and health insurance status were not significantly correlated with perceived provider knowledge.

Race and individual income in 2004 were significant with respective p-values of 0.0306 and 0.007629. Of note, there were very few responses for race categories aside from the categories of White and Black. White respondents responded more often with levels of higher perceived knowledge than Black respondents. For income, those with higher incomes reported slightly less perceived provider knowledge than those with lower incomes.

Perceived provider knowledge and patient comfortability were significantly correlated with a p-value of <0.001. The same trend as above was observed.

Table 4 shows the results of the model used to assess the relationship between perceived provider knowledge and patient comfortability. The final model was built with an ordinal, multinomial logistic regression as the dependent variable—patient comfortability—is a factor variable with a natural hierarchy to its response categories. The reference category for this model was set as the response “Unknowledgeable” for perceived provider knowledge. The crude model only contained the dependent variable patient comfort and the independent variable of perceived provider knowledge. The full model adjusted for race, age and individual income in 2004.

The crude odds ratio (OR) for the response category of “Somewhat knowledgeable” providers was 1.22 with a 95% confidence interval (CI) of 0.48-3.07, and the adjusted OR was 1.17 with a 95% CI of 0.39-3.53. The crude OR for the response category of “Knowledgeable” was 1.78 with a 95% CI of 0.67-4.74, and the adjusted OR was 2.42 with a 95% CI of 0.73-8.21. The crude OR for the response category of “Very knowledgeable” was 3.06 with a 95% CI of 1.05-7.54 and the adjusted OR was 3.99 with a 95% CI of 1.12-14.86.

The Akaike information criterion (AIC) is listed for both models. The crude model had a value of 366.4966 and the adjusted model had a value of 380.9434.

**Discussion:**

After assessment via univariate and bivariate analysis, the covariates adjusted for in the final model were race, age and individual income in 2004. All of the listed covariates were considered for inclusion in the model. Race, age and individual income in 2004 were found to be the most significantly associated with patient comfortability via bivariate analysis and purposeful selection in model building. Additionally, all considered covariates were not included in the final adjusted model as it considerably raised the AIC of the model to a value of 410.2296.

The model showed that transgender patients who report being more comfortable disclosing their gender identity and discussing their trans-specific healthcare perceive their providers to be more knowledgeable, with statistical significance reached for providers who are perceived to be very knowledgeable. While the ORs for the somewhat knowledgeable and knowledgeable response categories were not statistically significant, the overall results of this model show a dose-response trend between perceived provider knowledge and patient comfort. Overall, transgender patients feel generally more comfortable discussing their healthcare with more educated providers.

This same trend was consistent in the model adjusted for race, age and individual income in 2004. Again, the only statistically significant result was for the very knowledgeable category which had an odds ratio of 3.99. Overall, there appears to be a similar dose-response relationship between perceived provider knowledge and patient comfort.

Importantly, a bidirectional association likely exists between patient comfort and perceived provider knowledge. It is very possible that a provider, in making a patient feel comfortable irrespective of their knowledge level, may be perceived as being more knowledgeable. Therefore, this study is limited in determining the true association between patient comfort and perceived provider knowledge as the two are likely mutually associated.

This study included perceived provider knowledge as an independent variable in the final model as it was used as a proxy measure for the fixed amount of knowledge a provider has of trans-specific healthcare issues. Comfort was included as the dependent variable because it would presumably vary dependent on these fixed levels of provider knowledge. Moreover, future studies could bypass this assumption and proxy measure by quantitatively surveying healthcare providers’ knowledge of transgender people and their specific-health care needs, and also how comfortable transgender patients feel with those same providers. These studies could more accurately assess the directional association between the variables in this study.

Despite this, these results are consistent with previous literature which show that transgender patients are unwilling to return to providers who are unknowledgeable about their trans-specific healthcare.2-7 This study builds on that finding, showing that transgender patients are much more likely to discuss and engage in care if they believe their provider has an understanding of that care.

Additionally, the results from the bivariate analysis show that small improvements in provider knowledge could have substantial effects on transgender patients’ comfort.

Of note, the finding that White respondents reported higher levels of perceived provider knowledge as opposed to Black respondents points to a possible racial disparity in the delivery of trans-specific health care. However, more research is needed to definitively state this relationship. Additionally, further studies should focus on the enrollment of a more racially diverse transgender sample to overcome the small cell size issues in this study.

With regards to age in this study, there were very few younger respondents analyzed. This was due to the inclusion criteria of this analysis, as respondents aged 18-24 years old represented 24% of the total study population of 350 individuals. Further studies should assess the barriers that younger transgender patients face to accessing routine care. This finding points to possible community-based interventions to connect younger transgender people with healthcare resources.

This study has several limitations. Of note, the results are accompanied by wide 95% CIs. This is likely the result of an overall small sample size and small cell sizes in variables like race. Future studies could replicate this design with a larger and more diverse sample of transgender patients.

This goal of this present study was to build a multinomial ordinal logistic regression model to assess any possible dose-response relationship between the patient comfort and perceived provider knowledge. However, a future study with this same data set could achieve higher statistical power by dichotomizing patient comfort and using a simpler logistic regression model. The increased power of this decision can be seen in the results from the reported Cochran-Armitage trend tests between a dichotomized version of patient comfort and both age category and education level.

This study also has limited generalizability. This sample is much more applicable to the state of Virginia, however future studies should focus on a larger, more representative, and generalizable population of transgender patients in the US.

Finally, this study uses data collected from 2005-2006. Future studies should use more contemporary data to inform the current landscape of transgender patient’s healthcare experiences.

This work points towards the need for more current analyses, but beyond those, to education interventions. Currently, there is no required education on the LGBTQIA+ community for physicians in the US at the medical school level.12 Only the district of Washington D.C. requires continuing education credits be achieved with regards to the LGBTQIA+ community. Moreover, these results show that physician education on transgender people and their specific healthcare is needed in order to provide appropriate care to this population.

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Table 1. Univariable Analysis for chosen covariates and variables from the Virginia Transgender Health Initiative Study (THIS), 2005-2006

|  |  |
| --- | --- |
| Category | N (%) |
| Sex |  |
| Male | 97 (68.8%) |
| Female | 41 (31.2) |
|  |  |
| Gender |  |
| Transgender | 47 (33.3%) |
| Woman | 46 (32.6%) |
| Man | 34 (24.1%) |
| Other | 6 (4.3%) |
| Androgynous | 3 (2.1%) |
| Gender Queer | 3 (2.1%) |
| Questioning | 2 (1.4%) |
|  |  |
| Sexual Orientation |  |
| Heterosexual | 36 (25.5%) |
| Gay | 28(19.9%) |
| I do not label my sexual orientation | 19 (13.5%) |
| Lesbian | 18 (12.8%) |
| Bisexual | 17 (12.1%) |
| Queer | 8 (5.7%) |
| Questioning | 7 (5.0%) |
| Asexual | 6 (4.3%) |
| Other | 2 (1.4%) |
|  |  |
| Race |  |
| White | 91 (64.5%) |
| Black | 40 (28.4%) |
| Other | 4 (2.8%) |
| Latine | 4 (2.8%) |
| Indigenous | 2 (1.4%) |
|  |  |
| Age Category |  |
| 35-44 | 41 (29.1%) |
| 45-54 | 39 (27.7%) |
| 25-34 | 27 (19.1%) |
| 55 or older | 18 (12.8%) |
| 18-24 | 16 (11.3%) |
|  |  |
| Highest Level of Education |  |
| Some college (no degree) | 37 (26.2%) |
| College graduate | 28 (19.9%) |
| High school graduate/GED | 22(15.6%) |
| Graduate or professional degree | 21 (14.9%) |
| Technical certificate/Associate’s degree | 15 (10.6%) |
| Some graduate school (no degree) | 11 (7.8%) |
| Some high school (no diploma) | 6 (4.3%) |
| 8th grade or less | 1 (0.7%) |
|  |  |
| Category | N (%) |
|  |  |
| Employment Status |  |
| Full-time (35 hours or more per week) | 89 (63.1%) |
| Part-time (fewer than 35 hours per week) | 14 (9.9%) |
| Out of work, on disability | 13 (9.2%) |
| Currently unemployed (not a student, retired, or disabled) | 7 (5.0%) |
| Retired | 7 (5.0%) |
| Student | 6 (4.3%) |
| Other | 5 (3.5%) |
|  |  |
| Yearly Income Category |  |
| $1- $4,999 | 8 (5.7%) |
| $5,000 - $9,999 | 11 (7.8%) |
| $10,000 - $16,999 | 18 (12.8%) |
| $17,000 - $23,999 | 16 (11.3%) |
| $24,000 - $29,999 | 12 (8.5%) |
| $30,000 - $39,999 | 20 (14.2%) |
| $40,000 - $49,999 | 12 (8.5%) |
| $50,000 - $69,999 | 10 (7.1%) |
| $70,000 - $99,999 | 18 (12.8%) |
| $100,000 or more | 12 (8.5%) |
| I had no source of income | 4 (2.8%) |
|  |  |
| Health Insurance Status |  |
| Has insurance | 116 (82.3%) |
| Does not have insurance | 25 (17.7%) |
|  |  |
| How comfortable are you discussing your transgender status and transgender-specific health care needs with your doctor? |  |
| Very comfortable | 52 (36.9%) |
| Comfortable | 40 (28.4%) |
| Uncomfortable | 11 (7.8%) |
| Very uncomfortable | 38 (27.0%) |
|  |  |
| How knowledgeable is your doctor about transgender-based care? |  |
| Very knowledgeable | 34 (24.1%) |
| Knowledgeable | 39 (27.7%) |
| Somewhat knowledgeable | 51 (36.2%) |
| Not at all knowledgeable | 17 (12.1%) |
|  |  |
| Have you ever had to educate your doctor about your health care needs as a transgender person? |  |
| Yes | 64 (45.4%) |
| No | 77 (54.6%) |
|  |  |
|  |  |
|  |  |
| Category | N (%) |
|  |  |
| Has the lack of appropriate restroom facilities ever prevented you from seeing your doctor or getting regular health care? |  |
| Yes | 10 (7.1%) |
| No | 126 (89.4%) |
|  |  |
| Have you ever experienced discrimination by a doctor or other health care provider due to your transgender status or gender expression? |  |
| Yes | 42 (29.8%) |
| No | 78 (55.3%) |
| Don’t know/unsure | 21 (14.9%) |

Table 2. Bivariable analysis demonstrating the associations between patient comfort discussing transgender-based care and chosen variables and covariates from the Virginia Transgender Health Initiative Study (THIS), 2005-2006

|  | Total | Patient Comfortability | | | |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | N (%) | Very uncomfortable  n (%) | Uncomfortable  n (%) | Comfortable  n (%) | Very Comfortable  n (%) | p-value[[1]](#footnote-1) |
|  |  |  |  |  |  |  |
| Sex |  |  |  |  |  | 0.09395 |
| Male | 97 (68.8) | 28 (19.9) | 5 (3.5) | 24 (17.0) | 40 (28.4) |  |
| Female | 44 (31.2) | 10 (7.1) | 6 (4.3) | 16 (11.3) | 12 (8.5) |  |
|  |  |  |  |  |  |  |
| Gender |  |  |  |  |  | 0.181 |
| Transgender | 47 (33.4) | 13 (9.2) | 3 (2.1) | 14 (9.9) | 17 (12.1) |  |
| Woman | 46 (32.6) | 15 (10.6) | 1 (0.7) | 11 (7.8) | 19 (13.5) |  |
| Man | 34 (24.1) | 9 (6.4) | 2 (1.4) | 10 (7.1) | 13 (9.2) |  |
| Other | 6 (4.3) | 0 (0) | 2 (1.4) | 2 (1.4) | 2 (1.4) |  |
| Androgynous | 3 (2.1) | 0 (0) | 1 (0.7) | 1 (0.7) | 1 (0.7) |  |
| Gender Queer | 3 (2.1) | 1 (0.7) | 1 (0.7) | 1 (0.7) | 0 (0) |  |
| Questioning | 2 (1.4) | 0 (0) | 1 (0.7) | 1 (0.7) | 0 (0) |  |
|  |  |  |  |  |  |  |
| Sexual Orientation |  |  |  |  |  | 0.306 |
| Heterosexual | 36 (25.5) | 12 (8.5) | 4 (2.8) | 7 (5.0) | 13 (9.2) |  |
| Gay | 28 (19.9) | 12 (8.5) | 0 (0) | 9 (6.4) | 7 (5.0) |  |
| I do not label my sexual orientation | 19 (13.5) | 4 (2.8) | 2 (1.4) | 4 (2.8) | 9 (6.4) |  |
| Lesbian | 18 (12.8) | 5 (3.5) | 0 (0) | 8 (5.7) | 5 (3.5) |  |
| Bisexual | 17 (12.1) | 3 (2.1) | 2 (1.4) | 4 (2.8) | 8 (5.7) |  |
| Queer | 8 (5.7) | 1 (.7) | 2 (1.4) | 2 (1.4) | 3 (2.1) |  |
| Questioning | 7 (5.0) | 0 (0) | 0 (0) | 4 (2.8) | 3 (2.1) |  |
| Asexual | 6 (4.3) | 1 (0.7) | 1 (0.7) | 2 (1.4) | 2 (1.4) |  |
| Other | 2 (1.4) | 0 (0) | 0 (0) | 0 (0) | 2 (1.4) |  |
|  |  |  |  |  |  |  |
| Race |  |  |  |  |  | .3966 |
| White | 91 (64.5) | 21 (14.9) | 9 (6.4) | 25 (17.7) | 36 (25.5) |  |
| Black | 40 (28.4) | 16 (11.3) | 2 (1.4) | 10 (7.1) | 12 (8.5) |  |
| Other | 4 (2.8) | 1 (0.7) | 0 (0) | 1 (0.7) | 2 (1.4) |  |
| Latine | 4 (2.8) | 0 (0) | 0 (0) | 2 (1.4) | 2 (1.4) |  |
| Native | 2 (1.4) | 0 (0) | 0 (0) | 2 (1.4) | 0 (0) |  |
|  |  |  |  |  |  |  |
| Age Category |  |  |  |  |  | 0.0561 |
| 18-24 | 16 (11.3) | 5 (3.5) | 2 (1.4) | 7 (0.5) | 2 (1.4) |  |
| 25-34 | 27 (19.1) | 6 (4.3) | 3 (2.1) | 12 (8.5) | 6 (4.3) |  |
| 35-44 | 41 (29.1) | 8 (5.7) | 5 (3.5) | 8 (5.7) | 20 (14.2) |  |
| 45-54 | 39 (27.7) | 15 (10.6) | 1 (07) | 7 (5.0) | 16 (11.3) |  |
| 55 or older | 18 (12.8) | 4 (2.8) | 0 (0) | 6 (4.3) | 8 (5.7) |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Highest Level of Education |  |  |  |  |  | 0.07447 |
|  |  |  |  |  |  |  |
| 8th grade or less | 1 (.7) | 0 (0) | 0 (0) | 0 (0) | 1 (.7) |  |
| Some high school (no diploma) | 6 (4.3) | 2 (1.4) | 1 (.7) | 1 (.7) | 2 (1.4) |  |
| High school graduate/GED | 22 (15.6) | 9 (6.4) | 0 (0) | 7 (5.0) | 6 (4.3) |  |
| Technical certificate/Associate’s degree | 15 (10.6) | 1 (0.7) | 2 (1.4) | 8 (5.7) | 4 (2.8) |  |
| Some college (no degree) | 37 (26.2) | 8 (5.7) | 4 (2.8) | 13 (9.2) | 12 (8.5) |  |
| College graduate | 28 (19.9) | 6 (4.3) | 2 (1.4) | 10 (7.1) | 10 (7.1) |  |
| Some graduate school (no degree) | 11 (7.8) | 2 (1.4) | 1 (0.7) | 0 (0) | 8 (5.7) |  |
| Graduate or professional degree | 21 (14.9) | 10 (7.1) | 1 (0.7) | 1 (.7) | 9 (6.4) |  |
|  |  |  |  |  |  |  |
| Employment Status |  |  |  |  |  | .1866 |
|  |  |  |  |  |  |  |
| Full-time (35 hours or more per week) | 89 (63.1) | 26 (18.4) | 10 (7.1) | 19 (13.5) | 34 (24.1) |  |
| Part-time (fewer than 35 hours per week) | 14 (9.9) | 6 (4.3) | 0 (0) | 3 (2.1) | 5 (3.5) |  |
| Out of work, on disability | 13 (9.2) | 2 (1.4) | 0 (0) | 8 (5.7) | 3 (2.1) |  |
| Currently unemployed (not a student, retired, or disabled) | 7 (5.0) | 0 (0) | 0 (0) | 2 (1.4) | 5 (3.5) |  |
| Retired | 7 (5.0) | 1 (0.7) | 0 (0) | 4 (2.8) | 2 (1.4) |  |
| Student | 6 (4.3) | 2 (1.4) | 1 (0.7) | 2 (1.4) | 1 (0.7) |  |
| Other | 5 (3.5) | 1 (0.7) | 0 (0) | 2 (1.4) | 2 (1.4) |  |
|  |  |  |  |  |  |  |
| Yearly Income Category |  |  |  |  |  | 0.1003 |
|  |  |  |  |  |  |  |
| $1- $4,900 | 8 (5.7) | 2 (1.4) | 1 (.7) | 1 (.7) | 4 (2.8) |  |
| $5,000 - $9,999 | 11 (7.8) | 3 (2.1) | 1 (.7) | 4 (2.8) | 3 (2.1) |  |
| $10,000 - $16,999 | 18 (12.8) | 5 (3.5) | 0 (0) | 5 (3.5) | 8 (5.7) |  |
| $17,000 - $23,999 | 16 (11.3) | 4 (2.8) | 0 (0) | 7 (5.0) | 5 (3.5) |  |
| $24,000 - $29,999 | 12 (8.5) | 3 (2.1) | 3 (2.1) | 1 (0.7) | 5 (3.5) |  |
| $30,000 - $39,999 | 20 (14.2) | 6 (4.3) | 2 (1.4) | 4 (2.8) | 8 (5.7) |  |
| $40,000 - $49,999 | 12 (8.5) | 1 (0.7) | 0 (0) | 8 (5.7) | 3 (2.1) |  |
| $50,000 - $69,999 | 10 (7.1) | 1 (0.7) | 1 (0.7) | 3 (2.1) | 5 (3.5) |  |
| $70,000 - $99,999 | 18 (12.8) | 9 (6.4) | 0 (0) | 4 (2.8) | 5 (3.5) |  |
| $100,000 or more | 12 (8.5) | 2 (1.4) | 3 (2.1) | 1 (.7) | 6 (4.3) |  |
| I had no source of income | 4 (2.8) | 2 (1.4) | 0 (0) | 2 (1.4) | 0 (0) |  |
|  |  |  |  |  |  |  |
| Health Insurance Status |  |  |  |  |  | 0.7818 |
|  |  |  |  |  |  |  |
| Has insurance | 116 (82.3) | 32 (22.7) | 10 (7.1) | 33 (23.4) | 41 (29.1) |  |
| Does not have insurance | 25 (17.7) | 6 (4.3) | 1 (0.7) | 7 (.5) | 11 (7.8) |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| How knowledgeable is your doctor about transgender-based care? |  |  |  |  |  | <0.001 |
|  |  |  |  |  |  |  |
| Very knowledgeable | 34 (24.1) | 11 (7.8) | 0 (0) | 2 (1.4) | 21 (14.9) |  |
| Knowledgeable | 39 (27.7) | 10 (7.1) | 1 (0.7) | 13 (9.2) | 15 (10.6) |  |
| Somewhat knowledgeable | 51 (36.2) | 14 (9.9) | 4 (2.8) | 20 (14.2) | 13 (9.2) |  |
| Not at all knowledgeable | 17 (12.1) | 3 (2.1) | 6 (4.3) | 5 (3.5) | 3 (2.1) |  |
|  |  |  |  |  |  |  |

Table 3. Bivariable analysis demonstrating the associations between perceived provider knowledge of transgender-based care and chosen variables and covariates from the Virginia Transgender Health Initiative Study (THIS), 2005-2006

|  | Total | Perceived Provider Knowledge | | | |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | N (%) | Not at all knowledgeable  n (%) | Somewhat knowledgeable  n (%) | Knowledgeable  n (%) | Very knowledgeable  n (%) | p-value[[2]](#footnote-2) |
|  |  |  |  |  |  |  |
| Sex |  |  |  |  |  | 0.07246 |
| Male | 97 (68.8) | 11 (7.8) | 29 (20.6) | 32 (22.7) | 25 (17.7) |  |
| Female | 44 (31.2) | 6 (4.3) | 22 (15.6) | 7 (5.0) | 9 (6.4) |  |
|  |  |  |  |  |  |  |
| Gender |  |  |  |  |  | 0.07373 |
| Transgender | 47 (33.3) | 5 (3.5) | 13 (9.2) | 17 (12.1) | 12 (8.5) |  |
| Woman | 46 (32.6) | 4 (2.8) | 16 (11.3) | 12 (8.5) | 14 (.9) |  |
| Man | 34 (24.1) | 4 (2.8) | 14 (9.9) | 8 (5.7) | 8 (5.7) |  |
| Other | 6 (4.3) | 1 (.7) | 4 (2.8) | 1 (.7) | 0 (0) |  |
| Androgynous | 3 (2.1) | 0 (0) | 2 (1.4) | 1 (0.7) | 0 (0) |  |
| Gender Queer | 3 (2.1) | 1 (.7) | 2 (1.4) | 0 (0) | 0 (0) |  |
|  |  |  |  |  |  |  |
| Sexual Orientation |  |  |  |  |  | 0.5244 |
| Heterosexual | 36 (25.5) | 4 (2.8) | 9 (6.4) | 12 (8.5) | 11 (7.8) |  |
| Gay | 28 (19.9) | 2 (1.4) | 7 (5.0) | 12 (8.5) | 7 (5.0) |  |
| I do not label my sexual orientation | 19 (13.5) | 3 (2.1) | 6 (4.3) | 6 (4.3) | 4 (2.8) |  |
| Lesbian | 18 (12.8) | 2 (1.4) | 8 (5.7) | 4 (2.8) | 4 (2.8) |  |
| Bisexual | 17 (12.1) | 3 (2.1) | 8 (5.7) | 2 (1.4) | 4 (2.8) |  |
| Queer | 8 (5.7) | 2 (1.4) | 5 (3.5) | 1 (.7) | 0 (0) |  |
| Questioning | 7 (5.0) | 1 (.7) | 2 (1.4) | 2 (1.4) | 2 (1.4) |  |
| Asexual | 6 (4.3) | 0 (0) | 5 (3.5) | 0 (0) | 1 (0.7) |  |
| Other | 2 (1.4) | 0 (0) | 1 (0.7) | 0 (0) | 1 (0.7) |  |
|  |  |  |  |  |  |  |
| Race |  |  |  |  |  | 0.0306 |
| White | 91 (64.5) | 14 (9.9) | 38 (27.0) | 17 (12.1) | 22 (15.6) |  |
| Black | 40 (28.4) | 2 (1.4) | 11 (7.8) | 16 (11.3) | 1 (0.7) |  |
| Latine | 4 (2.8) | 0 (0) | 0 (0) | 3 (2.1) | 1 (.7) |  |
| Native | 2 (1.4) | 1 (.7) | 1 (.7) | 0 (0) | 0 (0) |  |
| Other | 4 (2.8) | 0 (0) | 1 (.7) | 3 (2.1) | 0 (0) |  |
|  |  |  |  |  |  |  |
| Age Category |  |  |  |  |  | .1318 |
| 18-24 | 16 (11.3) | 2 (1.4) | 8 (5.7) | 1 (.7) | 5 (3.5) |  |
| 25-34 | 27 (19.1) | 5 (3.5) | 7 (5.0) | 12 (8.5) | 3 (2.1) |  |
| 35-44 | 41 (29.1) | 6 (4.3) | 15 (10.6) | 8 (5.7) | 12 (8.5) |  |
| 45-54 | 39 (27.7) | 3 (2.1) | 11 (7.8) | 14 (9.9) | 11 (7.8) |  |
| 55 or older | 18 (12.8) | 1 (.7) | 10 (7.1) | 4 (2.8) | 3 (2.1) |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Highest Level of Education |  |  |  |  |  | 0.471 |
| 8th grade or less | 1 (.7) | 0 (0) | 0 (0) | 0 (0) | 1 (.7) |  |
| Some high school (no diploma) | 6 (4.3) | 2 (1.4) | 0 (0) | 1 (.7) | 3 (2.1) |  |
| High school graduate/GED | 22 (15.6) | 2 (1.4) | 8 (5.7) | 7 (5.0) | 5 (3.5) |  |
| Technical certificate/Associate’s degree | 15 (10.6) | 1 (.7) | 8 (5.7) | 4 (2.8) | 2 (1.4) |  |
| Some college (no degree) | 37 (26.2) | 4 (2.8) | 13 (9.2) | 12 (8.5) | 8 (5.7) |  |
| College graduate | 28 (19.9) | 4 (2.8) | 14 (9.9) | 6 (4.3) | 4 (2.8) |  |
| Some graduate school (no degree) | 11 (7.8) | 1 (.7) | 1 (.7) | 4 (2.8) | 5 (3.5) |  |
| Graduate or professional degree | 21 (14.9) | 3 (2.1) | 7 (5.0) | 5 (3.5) | 6 (4.3) |  |
|  |  |  |  |  |  |  |
| Employment Status |  |  |  |  |  | 0.3118 |
| Full-time (35 hours or more per week) | 89 (0.631) | 14 (9.9) | 28 (19.9) | 24 (17.0) | 23 (16.3) |  |
| Part-time (fewer than 35 hours per week) | 14 (9.9) | 0 (0) | 6 (4.3) | 5 (3.5) | 3 (2.1) |  |
| Out of work, on disability | 13 (9.2) | 2 (1.4) | 4 (2.8) | 4 (2.8) | 3 (2.1) |  |
| Currently unemployed (not a student, retired, or disabled) | 7 (5.0) | 0 (0) | 2 (1.4) | 2 (1.4) | 3 (2.1) |  |
| Retired | 7 (5.0) | 1 (.7) | 3 (2.1) | 3 (2.1) | 0 (0) |  |
| Student | 6 (4.3) | 0 (0) | 6 (4.3) | 0 (0) | 0 (0) |  |
| Other | 5 (3.5) | 0 (0) | 2 (1.4) | 1 (.7) | 2 (1.4) |  |
|  |  |  |  |  |  |  |
| Yearly Income Category |  |  |  |  |  | 0.007629 |
| $1- $4,900 | 8 (5.7) | 0 (0) | 3 (2.1) | 0 (0) | 5 (3.5) |  |
| $5,000 - $9,999 | 11 (7.8) | 1 (.7) | 2 (1.4) | 6 (4.3) | 2 (1.4) |  |
| $10,000 - $16,999 | 18 (12.8) | 0 (0) | 8 (5.7) | 4 (2.8) | 6 (4.3) |  |
| $17,000 - $23,999 | 16 (11.3) | 1 (.7) | 6 (4.3) | 6 (4.3) | 3 (2.1) |  |
| $24,000 - $29,999 | 12 (8.5) | 3 (2.1) | 4 (2.8) | 3 (2.1) | 2 (1.4) |  |
| $30,000 - $39,999 | 20 (14.2) | 4 (2.8) | 7 (5.0) | 4 (2.8) | 5 (3.5) |  |
| $40,000 - $49,999 | 12 (8.5) | 1 (.7) | 8 (5.7) | 3 (2.1) | 0 (0) |  |
| $50,000 - $69,999 | 10 (7.1) | 0 (0) | 1 (.7) | 5 (3.5) | 4 (2.8) |  |
| $70,000 - $99,999 | 18 (12.8) | 1 (.7) | 6 (4.3) | 5 (3.5) | 6 (4.3) |  |
| $100,000 or more | 12 (8.5) | 3 (2.1) | 5 (3.5) | 3 (2.1) | 1 (.7) |  |
| I had no source of income | 3 (2.1) | 1 (.7) | 0 (0) | 0 (0) | 0 (0) |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Health Insurance Status |  |  |  |  |  | .5794 |
| Has insurance | 116 (82.3) | 15 (10.6) | 44 (31.2) | 31 (22.0) | 26 (18.4) |  |
| Does not have insurance | 25 (17.7) | 2 (1.4) | 7 (5.0) | 8 (5.7) | 8 (5.7) |  |
|  |  |  |  |  |  |  |
| How comfortable are you discussing your transgender status and transgender-specific health care needs with your doctor? |  |  |  |  |  | <0.001 |
|  |  |  |  |  |  |  |
| Very uncomfortable | 38 (27.0) | 3 (2.1) | 14 (9.9) | 10 (7.1) | 11 (7.8) |  |
| Uncomfortable | 11 (7.8) | 0 (0) | 1 (.7) | 4 (2.8) | 6 (4.3) |  |
| Comfortable | 40 (28.4) | 5 (3.5) | 20 (14.2) | 13 (9.2) | 2 (1.4) |  |
| Very comfortable | 52 (36.9) | 3 (2.1) | 13 (9.2) | 15 (10.6) | 21 (14.9) |  |

Table 4. Results of the final ordinal logistic regression between patient comfortability and perceived provider knowledge of transgender-based care and chosen variables and covariates from the Virginia Transgender Health Initiative Study (THIS), 2005-2006

|  | Crude OR (95% CI) | Full model  Adjusted OR (95% CI) |
| --- | --- | --- |
| Perceived Provider Knowledge |  |  |
| Unknowledgeable | Reference | Reference |
| Somewhat knowledgeable | 1.22 (0.48 – 3.07) | 1.17 (0.39 – 3.53) |
| Knowledgeable | 1.78 (0.67 – 4.74) | 2.42 (0.73 – 8.21) |
| Very Knowledgeable | 3.06 (1.05 – 7.54) | 3.99 (1.12 – 14.86) |
|  |  |  |
|  | AIC | |
| Crude Model | 366.4966 | |
| Adjusted Model | 380.9434 | |
|  |  | |

OR = Odds ratio

CI = Confidence interval

The Full Model was adjusted for race, age and individual income in 2004

1. Pearson’s χ2 unless otherwise indicated [↑](#footnote-ref-1)
2. Pearson’s χ2 unless otherwise indicated [↑](#footnote-ref-2)