YOUTH AND PROVIDER PERSPECTIVES ON IMPROVING HEALTH CARE EXPERIENCES FOR TRANSGENDER AND GENDER NONCONFORMING ADOLESCENTS: A MIXED METHODS STUDY

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Purpose: Youth who identify as transgender and gender nonconforming (TGNC) often face stigma in healthcare, which may affect service utilization and health status. The dual purpose of this mixed-method study was to 1) use quantitative data to describe healthcare utilization and health status of TGNC students, and 2) use qualitative data to describe providers’ training experiences and patient encounters related to providing health services to youth who are TGNC.

Methods: Data were collected from 80,929 students in 9th and 11th grades (n=2,168 TGNC students, 2.7%) who completed the Minnesota Student Survey, a large population-based survey. Students self-reported gender identity, health status (general health, long-term physical disabilities and mental health problems), and care utilization (nurse office visits, preventive medical check-ups). Chi-square tests and general linear models were used to compare groups. Qualitative data were collected from 14 physicians and nurses in semi-structured interviews. Thematic analysis was used to characterize participants’ descriptions. Two coders independently reviewed all digital recordings and transcriptions and grouped responses by each interview question into separate documents. Each reviewer inserted quotes into a table and assigned a theme reflecting the main point. Within themes, quotes were reviewed for subthemes. The research team discussed the coding to increase validity of analysis and findings.

Results: Quantitative analyses indicated that TGNC youth reported poorer health and less care utilization than cisgender students; for example, only 39% of TGNC vs. 67% of cisgender students reported general health as excellent (X²=763.7, p<.001). TGNC students were also less likely to report preventative health check-ups than cisgender students (58% vs. 63%, X²=26.1, p<.001). Six main themes emerged from interviews with providers: no training about gender identity, some training about gender diversity, talking about gender, asking about gender/pronouns/language, not asking about gender (subthemes: afraid of offending/losing trust; wanting to be sensitive/nonjudgmental, form disclosure, focus on specific health concerns, receive all patients respectfully), and discomfort with gender-related topics. Many providers described differing comfort levels and lacking training about gender and how to ask patients about gender issues. During patient encounters, many interviewees attributed their hesitation or reluctance to ask about gender to concerns of being offensive or losing patient trust, instead expressing desires to be sensitive and nonjudgmental.

Conclusions: TGNC youth report poorer health, which may necessitate access to and utilization of health services, yet gaps exist in addressing health needs specific to this community. Providers expressed concerns with being perceived as offensive and thus tended to avoid gender discussions. Results highlight multiple opportunities for strengthening medical and nursing education to improve the healthcare experiences of TGNC youth. Specific training is needed to assist providers with managing discomfort with gender-related topics while simultaneously developing their skills to discuss gender issues. Such efforts may result in increased care utilization and improved quality of care not only for TGNC youth, but all youth.
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8.
DIFFERENCES BETWEEN VACCINATED AND UNVACCINATED WOMEN EXPLAIN INCREASE IN NON-VACCINE-TYPE HUMAN PAPILLOMAVIRUS IN UNVACCINATED WOMEN AFTER VACCINE INTRODUCTION
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Purpose: Surveillance studies after HPV vaccine introduction have examined trends in non-vaccine-type HPV to determine whether type replacement (an increase in non-vaccine types due to an ecological niche created by a decrease in vaccine types) is occurring, but results are inconsistent. Type replacement is unlikely for papillomaviruses, and it is possible that an observed increase in non-vaccine HPV types could instead be due to differences between vaccinated and unvaccinated women in characteristics that are associated with increased risk of HPV infection. The first aim of this study was to examine changes in prevalence of non-vaccine-type HPV in vaccinated and unvaccinated women in the first eight years after vaccine introduction, stratifying non-vaccine-type HPV into types genetically related and unrelated to vaccine-type HPV in order to take into account the effects of cross-protection. The second aim was to compare characteristics of unvaccinated and vaccinated women.

Methods: In three cross-sectional studies (2006-2007, n=371; 2009-2010, n=409; and 2013-2014, n=400), women 13-26 years old were recruited from a hospital-based teen health center and health department clinic. Participants completed a survey assessing sociodemographic characteristics, gynecological history and behaviors, and vaccination status. Cervicovaginal swabs were tested for 36 HPV types using the Roche Linear Array test. Outcome variables were: non-vaccine-type HPV, non-vaccine-type HPV genetically unrelated to HPV16 or HPV18, non-vaccine-type HPV genetically related to HPV16, and non-vaccine-type HPV genetically related to HPV18. Trends in non-vaccine-type HPV were determined in vaccinated and unvaccinated women, propensity-score adjusted to balance covariates across the 3 study waves. Differences between unvaccinated and vaccinated women were examined using univariable methods.

Results: We enrolled 1180 young women: none were vaccinated in wave 1 and 71.5% (286/400) in wave 3. Between waves 1 and 3, in vaccinated women, there was no change in all non-vaccine type HPV, non-vaccine-type HPV genetically related to HPV18, and non-vaccine-type HPV genetically unrelated to vaccine types, but a 36.1% (p=0.01) decrease in non-vaccine-type HPV genetically related to HPV16. In unvaccinated women, there was a 24.5% (p=0.01) increase in all non-vaccine type HPV, a 55.2% (p=0.02) increase in non-vaccine-type HPV genetically related to HPV18, no significant increase in non-vaccine-type HPV genetically related to HPV16, and a 24.3% (p=0.04) increase in non-vaccine-type HPV genetically unrelated to vaccine-type HPV. Among women recruited from the health department, unvaccinated vs. vaccinated women were more likely to lack health insurance; use condoms consistently over the past 3 months; and be older (p < .05). Among women recruited from the teen health center,
unvaccinated women were less likely to be African-American and to have Medicaid, but more likely to have at least one new sexual partner in past 3 months (p < .05).

**Conclusions:** The prevalence of non-vaccine-type HPV in unvaccinated women increased significantly during the study period, even after accounting for possible cross-protection. Demographic and behavioral differences in unvaccinated vs. vaccinated women may account for the observed increase in non-vaccine-type HPV, and must be considered before attributing increases in non-vaccine-type HPV after vaccine introduction to type replacement.

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### 9.

**RESPONSE TO SUBCUTANEOUS C1-ESTERASE INHIBITOR (C1-INH [SC]), A PROPHYLACTIC TREATMENT FOR ADOLESCENTS AND ADULTS WITH HEREDITARY ANGIOEDEMA: RESULTS FROM THE PHASE 3 COMPACT TRIAL**

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**Purpose:** Hereditary angioedema (HAE) is caused by deficiency or dysfunction of C1-esterase inhibitor (C1-INH) protein, which predisposes patients to inflammatory attacks of the subcutaneous (SC) tissues of the face, trunk, and limbs, as well as submucosal tissues of the upper respiratory, gastrointestinal, and genitourinary tracts. Attacks are painful and potentially fatal in the case of upper airway involvement. HAE typically manifests in childhood (age of onset, 4.4 to 18 years), with attacks becoming more severe at puberty due to hormonal and psychological factors. Select data are presented from the pivotal phase 3 COMPACT study of subcutaneous C1-INH (HAEGARDA®, CSL Behring, Marburg), which was recently approved by the US Food and Drug Administration as routine prophylaxis to prevent HAE attacks in adolescents and adults.

**Methods:** The safety and efficacy of prophylaxis with C1-INH (SC) were evaluated in a multicenter, double-blind, incomplete crossover study. Adolescent and adult patients (age ≥12 years) who had experienced at least 4 attacks within a 2-month period were randomized to either 40 IU/kg or 60 IU/kg of C1-INH (SC). Patients self-administered twice-weekly injections of C1-INH (SC) for 16 weeks, followed by 16 weeks of twice-weekly placebo injections (or vice versa). Use of rescue therapy for “on-demand” treatment of acute attacks was permitted. The primary endpoint was the time-normalized number of HAE attacks in the intent-to-treat population (N=90); a secondary endpoint was the percentage of responders. Subgroup analyses by age group were performed for these 2 endpoints.

**Results:** C1-INH (SC) significantly decreased the frequency of HAE attacks relative to placebo. Patients receiving 60 IU/kg experienced 0.52 attacks/month compared with 4.03 with placebo (P<0.001). With C1-INH (SC) 60 IU/kg, 90% (n=36/40) of patients were classified as responders, with a ≥50% reduction in HAE attacks. The pharmacokinetic profile of C1-INH (SC) in adolescents was consistent with that observed in adults. Efficacy results from a predefined subgroup of adolescent patients aged 12 to <17 years (n=6) as well as exploratory quality-of-life measures in the adolescent population were consistent with the overall study results. Median treatment compliance was 100%. The majority of adverse events
(AEs) associated with C1-INH (SC) exposure were injection-site reactions (76%). These typically were mild and resolved within 1 day. A higher number of AEs related to C1-INH (SC) was reported in the lower-dose group (342 vs 157 events), suggesting that AEs associated with C1-INH (SC) are not dose dependent. There were no serious treatment-related AEs, and no cases of thromboembolic events or anaphylaxis were reported. Inhibitory anti-C1-INH antibodies were not detected.

Conclusions: C1-INH (SC) is a well-tolerated prophylactic treatment for HAE that reduces the frequency of attacks when administered twice weekly, with no serious treatment-related AEs. The SC formulation may offer an advantage over prophylactic intravenous infusion options, which require chronic venous access, and is compatible with the active lifestyle of adolescent patients.

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10.

PAINTING PRETTY PICTURES OF RECOVERY: A CRITICAL DISCOURSE ANALYSIS OF EATING DISORDER TREATMENT CENTER PROMOTIONAL MATERIALS
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Purpose: Residential eating disorder (ED) treatment centers have experienced rapid growth in the U.S. in recent decades. Often these centers have extensive marketing strategies, which showcase the centers’ approaches to treatment and conceptualizations of recovery. In addition to providing valuable treatment, these centers necessarily shape the discourse around who gets EDs and who can recover from them. This study utilized critical discourse analysis techniques to analyze promotional materials from treatment centers to: 1) discover what archetypes of ED recovery are promoted within these materials and 2) examine how centers differentiate themselves and promote their specific approach to ED treatment.

Methods: In this exploratory qualitative study, we examined the promotional materials (brochures, websites) of 32 leading ED treatment centers in North America. Using a critical feminist and critical race theoretical framework, this study employed critical discourse analysis of words and images found in these promotional materials. Materials were analyzed for 26 variables, which were organized into a matrix. Within-case and between-case comparisons were performed to develop themes.

Results: Regarding recovery archetypes, several themes emerged. First, recovery images often mirrored ED ideals through such things as only picturing “safe foods” (vegetables, fruit, ice-water), emphasizing exercise, and portraying images which emphasized a thin, white, pretty, aesthetic. Second, images showed limited racial diversity, and images of people of color were disproportionately portrayed with representations of binge eating disorder. Third, efforts to address weight-inclusivity were largely absent. Regarding how centers differentiated themselves, centers largely marketed themselves as one of the following four treatment settings: 1) an expert medical facility equipped to save patients, 2) a home away from home, 3) a tranquil safe haven, 4) the most beautiful place on earth for recovery.
Conclusions: Our analysis suggests that there are several issues with the representation of EDs in promotional materials, including the ways in which EDs are framed as within the purview of young, female, cisgender, white, thin, and middle/upper-class people. Exceptions exist, particularly amongst treatment centers that differentiate themselves as more diversity-welcoming places. However, promotional materials remain tethered to dominant constructions of health that suggest that there is one “best” way to be a healthy North American citizen. An implication of this narrow representation is that those who do not fit this stereotype may not feel welcome in treatment settings and may struggle to find services that meet their needs. Further, these narrow representations may reinforce damaging stereotypes present in society at large. Our analysis suggests several important implications. First, we need to reconsider how recovery archetypes may mimic potentially disordered concepts. Second, we need to consider how the images we present in materials may cause those who do not fit these stereotypes to feel unwelcome or unacknowledged in treatment settings. Finally, we need to consider how diversity and inclusion can be integrated in more transformative ways in treatment settings, moving beyond the “tick-box” approach, to modalities that truly center diverse ways of living, recovering, and experiencing wellbeing.

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“WHAT THE F—K IS PREP?” YOUNG BLACK GAY AND BISEXUAL MEN’S EXPOSURE TO AND DISCUSSIONS ABOUT PREP WHILE NAVIGATING HOOK-UP APPS

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**Purpose:** Young Black gay, bisexual and other men who have sex with men (YBGBM) (13-24) continue to experience a disproportionate burden of HIV in Baltimore and the US. Increasingly evidence suggests that these disparities are perpetuated by exposure to sexual networks with higher untreated HIV prevalence and incidence. In Baltimore, surveillance data suggest many of these sexual networks are built around high utilization of “Hook-up” apps. Our prior work has found that these apps can be important access points for targeted interventions like PrEP, which can used to interrupt transmission in these networks. Yet PrEP awareness, knowledge and utilization remain low in YBGBM, which may impede online outreach designed to link these young men to PrEP. To inform future online outreach we conducted interviews among YBGBM “Hook-up” app users to explore their exposure to and discussions about PrEP while navigating these spaces.

**Methods:** We actively recruited YBMSM (n=17) age 18-24 (mean=21.5/SD=1.8) from the most frequently reported “Hook-up” apps for meeting sex partners by newly diagnosed HIV-infected MSM in Baltimore. Participants were recruited through direct messaging within the app while logged-on in social venues or census tracts previously identified as high HIV transmission areas using surveillance and community viral load data. Participants completed 60-90 minute semi-structured interviews in a private office at a scheduled time. Interviews were audio-recorded, transcribed and uploaded in NVivo10. Interview data were analyzed using categorical analysis including a 3-stage analytic coding strategy and were double-coded until consistency was achieved through group consensus.

**Results:** While some participants had not heard of PrEP previously or misunderstood its meaning, the majority described discussing it with a potential partner on an app or seeing it mentioned in another users’ profile. Three, largely derisive themes emerged from their discussions about PrEP. First many were mistrustful of either its effectiveness or the motivations of those who promote it – “I think it’s like one of those things that--that’s just trying to set the gay people up.” Second, many associated those who reported or endorsed PrEP in their profiles or messages with sexual promiscuity. Third, many also felt it was not useful because it would fail to protect them against other sexually transmitted infections – “PrEP ain't going to protect you from no chlamydia, gonorrhea, herpes, all that. So like you're PrEPing for what?”

**Conclusions:** Our findings suggest, at-risk YBGBM in Baltimore are aware of and discussing PrEP, but generally have concerns about using it grounded in medical mistrust, stigma and concerns about other STIs. While PrEP is a powerful tool that can interrupt ongoing transmissions in the incident and prevalent networks many YBGBM are embedded in, proper messaging is needed to account for the negative perceptions that surround it. Without this messaging, continued underuse in this important population will expand rather reduce HIV disparities.

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MEASURING ANTIRETROVIRAL ADHERENCE AMONG YOUNG PEOPLE LIVING WITH HIV: OBSERVATIONS FROM A REAL-TIME MONITORING DEVICE VERSUS SELF REPORT

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**Purpose:** Consistent adherence to antiretroviral therapy (ART) among young people living with HIV (YPLH) is a public health priority. Electronic monitoring devices such as Wisepill are important tools for capturing real-time adherence via mobile internet access. Understanding the limitations of these devices, however, is also critical. The current study is drawn from an adherence intervention trial for YPLH from the United States. We compare self-report (SR) adherence data to data collected via Wisepill, and examine associations between ART adherence levels and young people’s virologic functioning.

**Methods:** Sixty-six YPLH were recruited from an HIV clinic to participate in a trial of Battle Viro, a smartphone gaming app designed to improve ART adherence. Participants were assessed for outcomes over 14 weeks at four time points: T1 and four (T2), eight (T3), and 14 (T4) weeks after T1. Adherence was measured by Wisepill and SR by calculating the percent of antiretroviral doses taken in the past seven days. Descriptive analyses were used to compare SR to Wisepill data. In addition, correlations and a linear regression were conducted to explore factors hypothesized to explain SR-Wisepill discrepancies.

**Results:** Participants were aged 16 to 26 (mean age = 22) and identified primarily as African American (97%) and male (77%). Rates of SR adherence for T1 to T4 were 90%, 92%, 90%, 87% while rates of Wisepill adherence were 64%, 59%, 45%, and 34%. The correlation between SR-Wisepill measurements ranged from .19 to .41. A decreasing rate of Wisepill adherence occurred even as rates of viral suppression increased from 6% (T1) to 41% (T4). SR and Wisepill adherence at each time point had similar correlations with viral load at T4 (rs = -.24 to -.56). Two YPLH characteristics emerged as independent predictors of a mean SR-Wisepill discrepancy score: newly diagnosed YPLH had lower discrepancy scores than other YPLH (B = -.22, 95% CI = .42, .02, p = .032) and frequency of recent marijuana use was positively associated with discrepancy score (B = .06, 95% CI = .00, .13, p = .048).

**Conclusions:** Given SR adherence levels and the increasing rate of viral suppression, ART intake based on Wisepill observations was likely an underestimation. Nevertheless, Wisepill adherence paralleled SR adherence in its association with young people’s viral load at the end of 14 weeks. This suggests that the device should still be considered when assessing for predictors of HIV-related health functioning. Further research is needed to uncover which YPLH are at risk for over-reporting adherence behaviors as well as not consistently using electronic monitoring devices including perhaps ART-experienced patients and youth endorsing heavy substance use.

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