

**MODELING THE SOCIO-ECOLOGICAL FACTORS OF HIV PREVENTION SERVICES
AMONG FILIPINX TRANS WOMEN AND CIS MEN**

by

Arjee Javellana Restar

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF BEHAVIORAL AND SOCIAL SCIENCES
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BROWN UNIVERSITY

In Partial Fulfillment of the Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Providence, Rhode Island

May 2020

Committee in Charge:

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This dissertation by Arjee Javellana Restar is accepted in its present form
by the Department of Behavioral and Social Sciences
at the Brown School of Public Health
as satisfying the dissertation requirement for the degree of Doctor of Philosophy

Date 4/29/2020



Dr. Don Operario
Advisor

Recommended to the Graduate Council

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Dr. Susan Cu-Uvin
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Dr. Andrew Campbell
Dean of the Graduate School

CURRICULUM VITAE

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EDUCATION

2016 – 2020	Brown University, School of Public Health Department of Behavioral & Social Health Sciences <u>Dissertation</u> : “Modeling the socio-ecological factors of HIV Prevention Services among Filipinx Transgender Women and Cisgender Men” <u>Advisors</u> : Don Operario, PhD and Matthew Mimiaga, ScD	PhD Providence, RI
2014 – 2016	Columbia University, Mailman School of Public Health Department of Epidemiology <u>Thesis</u> : “Pre-Exposure Prophylaxes (PrEP)-related Knowledge and Practices among New York City Providers: Results from Public Health Detailing Campaign, 2014-2015” <u>Advisor</u> : Zoe Edelstein, PhD	MPH New York, NY
2010 – 2013	Pace University, Dyson College of Arts & Sciences Department of Biology and Philosophy <u>Thesis</u> : “Links between parental acceptance, family religiosity, and sexual compulsivity among gay and bisexual men in NYC” <u>Awards</u> : Excellent Thesis in Behavioral Science Magna Cum Laude with Honors	BS New York, NY

RESEARCH INTERESTS and SKILLS SETS

Race & Gender Equity, Health Policy, Social & Structural Determinants	Substance Use Prevention & Care, Sexual and Reproductive Health, HIV/STI Prevention & Care	Mixed-Method Approach: Quantitative & Qualitative Design, Implementation, & Dissemination
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RESEARCH TRAININGS and FELLOWSHIPS

2018 – 2019	Public Policy Fellow amfAR, The Foundation for AIDS Research	Washington, DC
2017 – present	Health Policy Research Scholars Leadership Program Robert Wood Johnson Foundation	Washington, DC
2017 – 2019	Minority Health & Disparities International Research Training (MHIRT) Program Brown University, Global Health Initiative	Providence, RI
2017 – 2019	Spatial Structures in Social Sciences (S4) Graduate Fellowship Program Brown University, Geographic Information Systems (GIS) Institute	Providence, RI
2016 – 2018	Initiative for Maximizing Student Development (IMSD) Fellowship Program Brown University, Division of Biology and Medicine	Providence, RI

2015 – 2015	Epidemiological (Epi) Scholars Program New York City Department of Health, Bureau of HIV/AIDS Prevention	New York, NY
2010 – 2015	Health Research Training Program (H RTP) New York City Department of Health, Bureau of HIV/AIDS Prevention, & Bureau of Environmental Disease Protection	New York, NY
2013 – 2013	Research Associate Training Program New York University Bellevue Hospital, Dept. of Emergency Medicine	New York, NY
2011 – 2013	Biostatistics Enrichment Summer Training Program Columbia University, Department of Biostatistics	New York, NY

RESEARCH POSITIONS AND EXPERIENCES

2019 – present	<i>Principal Investigator</i> Brown School of Public Health, Global Health Initiative <u>Project:</u> Public Health and Medical Schools Transgender Inclusive Educational Programming <u>Co-Investigators:</u> Wesley King, MPH, Don Operario, PhD	Providence, RI
2018 – present	<i>Program Evaluator</i> National LGBT Cancer Network <u>Project:</u> (1) Networking2Save: a CDC-funded project that aims to reduce late-stage tobacco-related cancer among LGBTQ populations. <u>Supervisors:</u> NFN Scout, PhD; Michelle Veras, MPH	Providence, RI
2018 – 2019	<i>Principal Investigator</i> Brown School of Public Health, Global Health Initiative University of the Philippines, College of Public Health <u>Project:</u> Integrating Social Networks Theory & Socio-ecological Model to Increase Uptake of HIV services among Gay and Transgender People in Metro Manila, Cebu, And Central Luzon Cities, Philippines. <u>Co-Investigator:</u> Don Operario, PhD	Providence, RI Manila, Philippines
2017 – 2018	<i>Principal Investigator</i> Brown School of Public Health, Global Health Initiative University of the Philippines, College of Public Health <u>Project:</u> (1) Understanding the Socio-ecological Factors of HIV Prevention and Treatment Services among Sexually Active, Gay and Transgender Youths who have Sex with Men (GTYSM) in Manila, Philippines: A Community-Informed Qualitative Approach <u>Co-Investigator:</u> Don Operario, PhD	Providence, RI Manila, Philippines
2016 – 2018	<i>Graduate Research Assistant</i> Brown School of Public Health, Center for Health Equity Research <u>Projects:</u> (1) LifeSkills, a Randomized HIV Prevention Intervention for Young Transgender Women (2) Optimizing PrEP Uptake and Adherence among Stimulant Using Men who Have Sex with Men (MSM) (3) Optimizing PrEP Uptake & Adherence Among Male Sex Workers (4) Critical Systematic Review of the HIV Epidemic in the Philippines <u>Mentors:</u> Matthew Mimiaga, ScD and Don Operario, PhD	Providence, RI

2016 – 2018	<i>Consultant - Qualitative Assistant Research Scientist</i> New York City Department of Health, Bureau of HIV/AIDS Prevention Columbia University, HIV Center for Clinical and Behavioral Sciences <u>Projects:</u> (1) Exploring Strategies to Promote Frequent HIV Testing among MSM (2) Structural HIV Prevention Intervention for Female and Male Sex Workers and their Clients in Mombasa, Kenya <u>Mentors:</u> Paul Kobrak, PhD, Theo Sandfort, PhD, Joanne Mantell, PhD	New York, NY
2015 – 2016	<i>Graduate Research Aide</i> New York City Department of Health, Bureau of HIV/AIDS Prevention <u>Projects:</u> (1) HIV Home Test Kits for Men Who Have Sex with Men in NYC (2) Long-term Follow-up Study of Pre- and Post- Exposure (PrEP/PEP) Prophylaxis Public Health Detailing Campaign (3) Trans Inclusion: Legislative Recommendations for Policies and Practices to Promote the Inclusion of Transgender and Gender Non-Conforming Employees and Visitors at the New York City Department of Health	New York, NY

RESEARCH EXPERIENCES

2015 – 2016	<i>Graduate Researcher – Epi Scholar</i> New York City Department of Health, Bureau of HIV/AIDS Prevention <u>Project:</u> (1) Pre- & Post- Exposure Prophylaxes Public Health Detailing <u>Mentors:</u> Zoe Edelstein, PhD, Paul Kobrak, PhD	New York, NY
2015 – 2015	<i>LGBT Task Force Policy Graduate Researcher</i> Merger Watch / Health Care for All New York / Raising Women's Voices <u>Project:</u> (1) New York State Transgender Medicaid Recommendations <u>Mentor:</u> Lois Uttley, PhD	New York, NY
2014 – 2015	<i>Program Evaluation Graduate Researcher</i> Roots of Health Philippine-based Reproductive Health Program <u>Project:</u> (1) Reproductive Health Services Annual Report <u>Mentor:</u> Sabrina Hermosilla, PhD	New York, NY
2012 – 2014	<i>Program Coordinator</i> Center for HIV Educational Studies and Training Hunter College, City University of New York <u>Projects:</u> (1) T-talk: Intervention on Transgender Women's Sexual and Mental health (2) One Thousand Strong: Online, National Study on Gay and Bisexual Men's Sexual Health and Decision Making <i>Research Assistant & Quality Assurance Specialist</i> <u>Projects:</u> (1) Pillow-talk: Sexually Active Gay & Bisexual Men's Mental Health & HIV in NYC (2) PrEPARE NYC: Awareness and Utilization of Pre-Exposure Prophylaxis (PrEP) among Gay and Bisexual Men in NYC	New York, NY

- (3) Drinking & Sexual Health: Alcohol & Risk Behavior among Young Adults
- (4) Wellness in Spirituality and Education: Adherence Intervention on Older Men and Women who are Living with HIV
- (5) Keep It Up: An Online HIV Prevention Program for young MSM.
- (6) PrEP & Me: Experiences of PrEP Utilization among Gay and Bisexual Men on PrEP.

Mentors: Jeffrey Parsons, PhD, Christian Grov, PhD, John Pachankis, PhD
Demetria Cain, PhD, Aaron Breslow, PhD, and William Mellman PhD

TEACHING EXPERIENCES

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|-------------|---|--------------|
| 2017 – 2018 | <p><i>Teaching Assistant / Experience</i>
Brown University School of Public Health
Department of Behavioral and Social Sciences
<u>Courses:</u>
(1) Research Methods in Behavioral Sciences
<u>Instructors:</u> Don Operario, PhD</p> | New York, NY |
| 2016 – 2016 | <p><i>Teaching Assistant</i>
Columbia University, Mailman School of Public Health
Department of Sociomedical Sciences, &
Department of Epidemiology
<u>Courses:</u>
(2) Social, Behavioral, and Structural Determinants of Health
(3) Integration of Science and Practice
<u>Instructors:</u> Ana Abraido-Lanza, PhD, Patrick Wilson, PhD,
Lisa Bates, PhD, Maria-Helen Lekas, PhD and Thelma Mielenz, PhD</p> | New York, NY |
| 2013 – 2014 | <p><i>Health Educator</i>
Center for HIV Educational Studies and Training
Hunter College, City University of New York
Project:
(1) Wellness in Spirituality and Education: Adherence Intervention on Older Men and Women who are Living with HIV
<u>Mentors:</u> Jeffrey Parsons, PhD, Ethan Fusaris, MPH</p> | New York, NY |

PUBLICATIONS

Published Peer-Reviewed Articles:

- (1) **Restar, A.**, Adia, A., Cu-Uvin S., Operario D. (2020, *in press*) Characterizing PrEP awareness and interest among Filipina transgender women. *AIDS Education and Prevention*.
- (2) **Restar, A.**, King, W., Operario, D. (2020, *in press*) Authorship in trans literature. *The SAGE Encyclopedia of Trans Studies*.
- (3) Adia, A., Lee, C., **Restar, A.**, Obiakor, B., Quilantang, MI., Underhill, K., Nazareno, J., Operario, D. (2020) Evaluating translation of HIV-related legal protections into practice: a qualitative assessment among HIV-positive gay, bisexual, and other men who have sex with men in Manila, Philippines. *Critical Public Health*. doi:10.1080/09581596.2020.1739226
- (4) Ogunbajo, A., **Restar, A.**, Edeza, A., Goedel, W., Jin, H., Iwuagwu, S., Williams, R., Abubakari, M., Biello, K., & Mimiaga, M. (2020) Poor sleep health is associated with increased mental health problems, substance use, and HIV sexual risk behavior in a large, multi-state sample of gay, bisexual and other men who have sex with men (GBMSM) in Nigeria, Africa. *Sleep Health*. doi: <https://doi.org/10.1016/j.sleh.2020.02.010>

- (5) **Restar, A.**, Jin H., Ogunbajo, A., Goedel, W., Millett, G., Sherwood, J., Kuhns, L., Reisner, S., Garofalo, R., Mimiaga, M. (2019, *in press*) Elevated non-medical prescription opioid use in a diverse, multicity cohort of young transgender women. *Journal of the American Medical Association*. doi: 10.1001/jamanetworkopen.2020.1015
- (6) Goedel, W., Jin, H., Suttan, C., Ogunbajo, A., **Restar, A.** (2019) Predictors of user engagement with Facebook posts generated by a national sample of LGBTQ community centers in the United States. *Journal of Medical Internet Research*. doi: 10.2196/16382
- (7) **Restar, A.**, Santamaria, E., Adia, A., Nazareno, A., Chan, R., Lurie, M., Sandfort, T., Hernandez, L., Cu-Uvin, S., Operario, D. (2019) Gender Affirmative HIV Care Framework: Decisions on Feminizing Hormone Therapy (FHT) and Antiretroviral Therapy (ART) among Transgender Women. *PLOS One*. 14:10, e0224133. doi: 10.1371/journal.pone.0224133
- (8) **Restar, A.**, Adia, A., Nazareno, J., Hernandez, L., Sandfort, T., Lurie, M., Cu-Uvin, S., Operario D. (2019) Barriers and Facilitators to Uptake of Condoms among Filipinx Transgender Women and Cisgender Men who have sex with Men: A Situated Socio-Ecological Perspective. *Global Public Health*. 1-12. doi: 10.1080/17441692.2019.1679218
- (9) **Restar, A.**, Chan, R., Adia, A., Quilantang, M., Nazareno, J., Hernandez, L., Cu-Uvin, S., Operario D. (2019) Prioritizing HIV services for transgender women and men who have sex with men in Manila, Philippines: An opportunity for HIV provider interventions. *Journal of the Association of Nurses in AIDS Care*, 1. doi:10.1097/jnc.0000000000000131
- (10) **Restar, A.**, Surace, A., Ogunbajo, A., Edeza A., Kahler, C. (2019) A systematic review of the socio-demographic characteristics and HIV-related risk factors of men who are sexually attracted to transgender women (MSTW) in the United States. *AIDS Education and Prevention*. 31:5, 463-478. doi: 10.1521/aeap.2019.31.5.463
- (11) Adia A., Ng, M., Quilantang I., **Restar, A.**, Hernandez, L., Imperial, R., Nazareno, J., Operario, D. (2019). Collective Coping Strategies for HIV-Related Challenges Among Men-Who-Have-Sex-With-Men in Manila, Philippines. *AIDS Education and Prevention*. 31:5, pp. 479-490. <https://doi.org/10.1521/aeap.2019.31.5.479>
- (12) King, W. M., **Restar, A.**, & Operario, D. (2019). Exploring Multiple Forms of Intimate Partner Violence in a Gender and Racially/Ethnically Diverse Sample of Transgender Adults. *Journal of Interpersonal Violence*. doi:10.1177/0886260519876024
- (13) **Restar, A.**, Jin H., Breslow A.S., Surace A., Antebi-Gruszka N., Kuhns L., Reisner S.L., Garofalo R., Mimiaga M.J., (2019) Developmental milestones in young transgender women in two American cities: Results from a racially and ethnically diverse sample, *Transgender Health* 4:1, 162–167, doi: 10.1089/trgh.2019.0008.
- (14) Valente, P. K., Mantell, J. E., Masvawure, T. B., Tocco, J. U., **Restar, A.**, Gichangi, P., Chabeda, S.V., Lafort, Y. and Sandfort, T.G. (2019). "I Couldn't Afford to Resist": Condom Negotiations Between Male Sex Workers and Male Clients in Mombasa, Kenya. *AIDS and Behavior*, 1-13.
- (15) Adia, A. C., **Restar, A.**, Lee, C. J., Payawal, M. P., Quilantang, M. I., Nazareno, J., & Operario, D. (2019). Sword and Shield: Perceptions of law in empowering and protecting HIV-positive men who have sex with men in Manila, Philippines. *Global Public Health*, 1-12. <https://doi.org/10.1080/17441692.2019.1622762>
- (16) **Restar, A.** (2019). Methodological Critique of Littman's (2018) Parental-Respondents Accounts of "Rapid-Onset Gender Dysphoria." *Archives of Sexual Behavior*. doi: 10.1007/s10508-019-1453-2
- (17) **Restar, A.**, & Operario, D. (2019). The missing trans women of science, medicine, and global health. *The Lancet*, 393(10171), 506-508.1
- (18) Paschen-Wolff, M. M., **Restar, A.**, Gandhi, A. D., Serafino, S., & Sandfort, T. (2019). A Systematic Review of Interventions that Promote Frequent HIV Testing. *AIDS and Behavior*, 1-15.

- (19) **Restar, A.**, Nguyen, M., Nguyen, K., Nazareno, J., Hernandez L., Operario, D. (2018). Trends and Emerging Directions in HIV Risk and Prevention Research in the Philippines: A Systematic Review of the Literature. *PLOS One*. <https://doi.org/10.1371/journal.pone.0207663>
- (20) Ogunbajo, A., Anyamele, C., Restar, A., Dolezal, C., & Sandfort, T. G. (2018). Substance Use and Depression Among Recently Migrated African Gay and Bisexual Men Living in the United States. *Journal of immigrant and minority health*, 1-9. <https://doi.org/10.1007/s10903-018-0849-8>
- (21) Ogunbajo, A., Anyamele, C., **Restar, A.**, Dolezal, C., & Sandfort, T.G.M. (2018). Substance Use and Mental Distress among recently migrated African men who have sex with men (MSM) living in the United States. *Journal of Immigrant and Minority Health*. <https://doi.org/10.1007/s10903-018-0849-8>
- (22) Frank, J., **Restar, A.**, Kuhns, L., Reisner, S., Biello K., Garofalo, R., Mimiaga, M. (2018) Unmet Health Care Needs among Young Transgender Women At-Risk for HIV Transmission and Acquisition in Two Urban U.S. Cities: The LifeSkills Study. *Transgender Health*. <https://doi.org/10.1089/trgh.2018.0026>
- (23) Mimiaga, M.J., Pantalone, D.W., Biello, K.B., Hughto, J.M.W., Frank, J., O'Cleirigh, C., Reisner, S.L., **Restar, A.**, Mayer, K.H., Safren, S.A. An Initial Randomized Controlled Trial of Behavioral Activation for Treatment of Concurrent Crystal Methamphetamine Dependence and Sexual Risk for HIV Acquisition among Men Who Have Sex with Men. *AIDS Care*, 1-13. <https://doi.org/10.1080/09540121.2019.1595518>.
- (24) Jin, H., **Restar, A.**, Biello, K., Kuhns, L., Reisner, S., Garofalo, R., & Mimiaga, M. J. (2018). Burden of HIV among young transgender women: factors associated with HIV infection and HIV treatment engagement. *AIDS Care*, 1-6. <https://doi.org/10.1080/09540121.2018.1539213>
- (25) **Restar, A.**, Ogunbajo, A., Kuhns, L., Reisner, S., Garofalo, R., Mimiaga, M. (2018). Acceptability of Antiretroviral Pre-Exposure Prophylaxis Among a Large Cohort of Sexually Experienced Young Transgender Women in Two Major U.S. Cities. *AIDS and Behavior*. <https://doi.org/10.1007/s10461-018-2127-0>
- (26) Nicholson, HL, Carter, JS, & **Restar, A.** (2018). Strength in Numbers: Foreign Born Asians' perceptions of Political Commonality with Blacks. *Sociology of Race and Ethnicity*. <http://dx.doi.org/10.1177/2332649218785648>
- (27) Mimiaga M.J., Suarez N., Garofalo R., Frank J., Ogunbajo A., Brown E., Bratcher A., Pardee D., Hidalgo M.A., Hoehnle S., **Restar, A.**, Wimbly T., Thai J., Sullivan P.S., and Stephenson R. (2018). Relationship dynamics in the context of binge drinking and polydrug use among same-sex male couples in Atlanta, Boston, and Chicago. *Archives of Sexual Behavior*. 1-14. <https://doi.org/10.1007/s10508-018-1324-2>
- (28) Mimiaga, M., Pantalone, D., Biello, K., Hughto, J.W., Frank, J., O'Cleirigh, C., Reisner, S., **Restar, A.**, Santostefano, C., Mayer, K. and Safren, S., (2018). Behavioral activation integrated with sexual risk reduction counseling for high-risk MSM with crystal methamphetamine dependence: an initial randomized controlled trial. *Journal of the International AIDS Society*, 21, 129. Sussex, England: John Wiley & Sons LTD.
- (29) **Restar, A.** & Reisner, SL (2017). Protect trans people: gender equality and equity in action. *The Lancet*, 390(10106), 1933-1935.
- (30) Masvawure, T., Tocco, J., Mantell J., Gichangi, P., **Restar, A.**, Chabeda, S., Lafort, Y., Sandfort, T., (2017). (2017). "Intentional and Unintentional Condom Breakage and Slippage in the Sexual Interactions of Female and Male Sex Workers and Clients in Mombasa, Kenya." *AIDS and Behavior*. <https://doi.org/10.1007/s10461-017-1922-3>.
- (31) **Restar, A.**, Tocco, J., Mantell J., Lafort, Y., Gichangi, P., Masvawure, T., Chabeda, S., Sandfort, T., (2017). Perspectives on HIV Pre-and Post-Exposure Prophylaxes (PrEP and PEP) Among Female and Male Sex Workers in Mombasa, Kenya: Implications for Integrating Biomedical Prevention into Sexual Health Services. *AIDS Education and Prevention*, 29(2), 141-153.

- (32) **Restar, A.** Sandfort, T., Pass, K., & Reddy, V. (2017). Gendered Sexual and Dating Experiences of South African Men Who Have Sex With Men (MSM). *The Journal of Sexual Medicine*, 14(5), e312.
- (33) Pachankis, J. E., Rendina, H. J., **Restar, A.**, Ventuneac, A., Grov, C., & Parsons, J. T. (2015). A Minority Stress—Emotion Regulation Model of Sexual Compulsivity Among Highly Sexually Active Gay and Bisexual Men. *Health Psychology*. Advance online publication. <http://dx.doi.org/10.1037/hea0000180>.
- (34) Grov, C., Rodríguez-Díaz, C. E., Ditmore, M. H., **Restar, A.**, & Parsons, J. T. (2014). What Kinds of Workshops do Internet Male Escorts Want? Implications for Prevention & Health Promotion. *Sexuality Research & Social Policy*, 11(2), 176-185.

Articles Under Review:

- (1) Grov, C., **Restar, A.**, Gussmann, P., Schlemmer, K., & Rodríguez-Díaz, C. E. (2014). Providers' Perspectives on the Best Practices for HIV Prevention for Men Who Have Sex with Men in Berlin, Germany: Lessons for Policy and Prevention. *AIDS Education and Prevention*, 26(6), 485-499.
- (2) **Restar, A.**, Jin H., Ogunbajo, A., Goedel, W., Millett, G., Sherwood, J., Kuhns, L., Reisner, S., Garofalo, R., Mimiaga, M. (2019) Transgender Women are Willing to Participate in Clinical Trials of HIV Vaccine and Pre-Exposure Prophylaxis (PrEP). *AIDS Care*.
- (3) **Restar, A.**, Surace A., Adia A., Goedel, W., Ogunbajo, A., Jin, H., Edeza, A., Hernandez, L., Cu-Uvin, S., Operario, D. (2019). Characterizing Awareness of Pre-exposure Prophylaxis for HIV Prevention in Manila and Cebu, Philippines: A web-based survey of Filipino Cisgender Men who have sex with Men. *BMC Public Health*
- (4) **Restar, A.**, Surace, A., Jin, H., Edeza, A., Ogunbajo, A., Goedel, W., Adia, A., Quilantang, M., Cu-Uvin, S., Operario, D. (2019) Integrating pre- and post-exposure prophylaxis programs for HIV prevention in Manila, Philippines: A qualitative investigation among health care workers. *Sexuality Research and Social Policy*

Published Opinion-Editorials (Op-Ed):

- (1) **Restar, A.** (2019). What the Trans Community Needs to Know About New Expert Recommendations. Available at: <https://www.thebody.com/article/what-trans-community-should-know-about-new-provider-recommendations>
- (2) **Restar, A. (2019).** Airlines Are Becoming Inclusive, But Airports Remain A Mess. *The Advocate*. Available at: <https://www.advocate.com/commentary/2019/3/26/airlines-are-becoming-inclusive-airports-remain-mess>
- (3) **Restar, A.** (2018). For Transgender Women, PrEP Is Safe to Use With Estradiol as Feminizing Hormone Therapy, Study Says. *The Body Pro: The HIV Resource for Health Professionals*. Available at: <http://www.thebodypro.com/content/81214/for-transgender-women-prep-is-safe-to-use-with-est.html?ic=2005>
- (4) **Restar, A.** (2018). Amida Care's Health Plan for Transgender New Yorkers Offers a National Model. *The Body: The complete HIV/AIDS Resource*. Available at: <http://www.thebody.com/content/80893/amida-cares-health-plan-for-transgender-new-yorker.html>.
- (5) **Restar, A.** (2017). Framing Spectrum Models with Intersectionality: A Framework Application to Research. *Equity 360: Brown University Multidisciplinary Journal for Health Equity*. Available at: www.brown.edu/Research/Equity360.

PRESENTATIONS

Accepted Peer-Reviewed Conference Presentations:

- (1) **Restar, A.**, Santamaria EK., Adia A., Chan R., Rodarte, P., Gomes S., Yoshioka E., Hernandez, L., Operario, D. (2018). "Antiretroviral therapy (ART) and feminizing hormone therapy (FHT) decisions among Filipina transgender women: A framework for gender affirming HIV care" Presented at the World Association for Sexual Health (WAS 2019), Mexico City, Mexico. (*Brief Communication Oral Presentation*)
- (2) King, W., **Restar, A.**, Operario, D. (2019). Intimate Partner Violence in a Gender and Racially/Ethnically Diverse Sample of Transgender Adults in the United States. Presented at the National Transgender Health Summit 2019 Conference, Oakland, CA. (*Oral Presentation*)
- (3) **Restar, A.**, King, W., Ogunbajo, A., Veras, M., Scout, N., Operario, D. (2019) Prevalence and Correlates of Alcohol, Tobacco, and Electronic-cigarette Use Among a Gender-diverse, National US Sample of Transgender Adults. Presented at the National Transgender Health Summit 2019 Conference, Oakland, CA. (*Oral Presentation*)
- (4) **Restar, A.**, Jin H., Kuhns L., Reisner S., Mimiaga M. (2018). Transgender Developmental Markers Across 3 Age Groups of Racially Diverse Young Trans women in Two Cities. Presented at (WPATH 2018) Conference, Buenos Aires, Argentina. (*Oral Presentation*)
- (5) **Restar, A.**, Chan, R., Rodarte, P., Gomes S., Adia A., Yoshioka E., Hernandez, L., Operario, D. (2018). Implementing pre- and post-exposure prophylaxes (PrEP and PEP) for HIV prevention in Manila, Philippines: A qualitative investigation of HIV healthcare providers' perspectives. Presented at: American Public Health Association (APHA 2018) Conference, San Diego, USA. (*Oral Presentation*)
- (6) **Restar, A.**, Chan, R., Rodarte, P., Gomes S., Adia A., Yoshioka E., Hernandez, L., Operario, D. (2018). Healthcare providers' attitudes and willingness to prioritize HIV prevention and treatment for gay and transgender communities in Manila, Philippines: an opportunity for provider-focused interventions. Presented at: American Public Health Association (APHA 2018) Conference, San Diego, USA. (*Oral Presentation*)
- (7) **Restar, A.**, Chan R., Rodarte, P., Gomes S., Adia A., Yoshioka E., Hernandez, L., Operario, D. (2018). Feminizing Hormone Therapy (HT) and Antiretroviral Therapy (ART) among Transgender Women who are Living with HIV in Manila, Philippines: Implications for co-prescribing gender affirmative services with HIV treatment and care. Presented at: American Public Health Association (APHA 2018) Conference, San Diego, USA.
- (8) Adia, A., **Restar, A.**, Chan R., Rodarte, P., Gomes S., Yoshioka E., Hernandez, L., Operario, D. (2018) Stigmatization of HIV and Barriers to Health Service Use for Men Who Have Sex With Men with HIV in Manila, Philippines: A Qualitative Study. Presented at: The 22nd International AIDS Conference (AIDS 2018) Conference, Netherlands.
- (9) Adia, A., Callahan, M., **Restar, A.**, Hernandez, L., Reynaldo I., Operario, D. (2018) A qualitative assessment of attitudes and decisions regarding HIV testing among men who have sex with men in the Philippines. Presented at: American Public Health Association (APHA 2018) Conference, San Diego, USA (*Oral Presentation*)
- (10) Chan, R., **Restar, A.**, Operario, D., Mak, W. (2018) Applying syndemic theory to understand HIV-related discrimination and sexual risk behavior among people living with HIV (PLHIV) in Hong Kong. Presented at: The 22nd International AIDS Conference (AIDS 2018) Conference, Netherlands.
- (11) Chan, R., **Restar, A.**, Cheng R., Mak W. (2018) Filial piety as a risk factor for self-stigma and poor well-being among HIV-positive men who have sex with men (MSM) in China. Presented at: The 22nd International AIDS Conference (AIDS 2018) Conference, Netherlands.

- (12) **Restar, A.**, Ogunbajo, A., Kuhns, L., Reisner, S., Garofalo, R., Mimiaga, M. (2017). Acceptability of Antiretroviral Pre-Exposure Prophylaxis Among a Large Cohort of Sexually Experienced Young Transgender Women in Two Major U.S. Cities. Presented at: American Public Health Association (APHA 2017), Atlanta, Georgia, USA. (**Oral Presentation**)
- (13) **Restar, A.**, Pass, K., Harper, G., Operario D. (2017). A systematic review of HIV research targeting men who are intimate with transgender women (MITW) in the United States: An emerging field of study. Presented at: American Public Health Association (APHA 2017), Georgia, USA.
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2019 – present	PLOS One	Manuscript Reviewer
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Available upon request

PREFACE

This document was formatted to fit the Brown University Graduate School's requirements for dissertation. It is also compliant with the Brown School of Public Health Department of Behavioral and Social Sciences dissertation format of having least three publishable studies and at least one primary data collection. This dissertation in total has four Chapters that describe four empirical studies— all of which utilized primary data. This dissertation is outlined as follows:

- A summary of the specific aims.
- An introduction that contextualizes this public health issue.
- Chapter 1 is titled “Barriers and Facilitators to Uptake of Condoms among Filipinx Transgender Women and Cisgender Men who have sex with Men: A Situated Socio-Ecological Perspective,” which was published in *Global Public Health*.
- Chapter 2 is titled “Condom use and social capital among Filipinx transgender women and cisgender men who have sex with men: A structural equation modeling.”
- Chapter 3 is titled “Using structural equation modeling to characterize multilevel socio-ecological predictors and mediators of condom use among transgender women and cisgender men who have sex with men.”
- Chapter 4 is titled “Gender Affirmative HIV Care Framework: Decisions on Feminizing Hormone Therapy (FHT) and Antiretroviral Therapy (ART) among Transgender Women” which was published in *PLOS ONE*.
- A discussion of the entire dissertation that includes research implications and future directions.

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SUMMARY OF DISSERTATION

The current dissertation is an empirical investigation of the personal, social, organizational, and structural factors (i.e., socio-ecological factors) that impact access to and uptake of condoms and other HIV-related health services among communities of Filipinx (i.e., gender and race neutral term to describe people living in the Philippines) transgender women (TW) and cisgender men who have sex with men (cis-MSM) who continue to be substantially impacted by the HIV epidemic in the Philippines.

In the last decade, global reports show HIV as an expanding national public health problem in the Philippines, particularly among younger Filipinx TW and cis-MSM. According to the 2019 UNAIDS global HIV epidemic report, it was estimated that there were 77,000 people living with HIV in the Philippines, which is more than five times the prevalence in 2010.¹ Surveillance evidence from the Philippines' Department of Health HIV/AIDS data registry reveals more than 80% of the newly reported HIV cases annually since 2016 are concentrated among communities of Filipinx TW and cis-MSM, and that youths and young adults below age 24 make up for two-thirds of new HIV cases ². This rapid upsurge of HIV infections has led the Philippines to be recognized as the country with the fastest growing HIV epidemic in the Asia-Pacific region and challenges the country's current HIV research capacity to inform and improve existing programmatic prevention and treatment services.³⁻⁵

Recommendations are highly needed to increase research knowledge and capacity to address access to and uptake of HIV prevention and treatment services such as HIV testing, condoms, Pre- and Post-Exposure Prophylaxes (PrEP and PEP),

and antiretroviral therapy (ART) among TW and cis-MSM.³⁻⁷ However, current HIV research and service capacity in the Philippines are limited in all areas of research, including epidemiologic, social, and behavioral research, which impedes effectiveness to optimize HIV prevention and treatment strategies for Filipinx TW and cis-MSM.^{8,9} Specifically, research knowledge in understanding the socio-ecological contextual factors that impact ongoing HIV epidemic disparities and in the access to and uptake of condom use among these two groups are underexplored.

The socio-ecological model was first theorized by Urie Bronfenbrenner in 1970s,^{10,11} and is a widely used theory-based framework in the field of HIV for understanding and organizing barriers and facilitators across multiple socio-ecological levels (e.g, personal, social, organizational, and structural) that influence behaviors like condom use. This model has been applied to various populations to understand access and uptake of HIV-related health services.^{10,12-14} However, this model had not been explored and used in the specific community, setting, and context that this research was conducted.⁶ In order to effectively understand how to optimize delivery of condoms and HIV-related health services for Filipinx TW and cis-MSM, it is critical to examine the socio-ecological factors that impact access to and uptake of these health services among these important communities that are substantially affected by the HIV epidemic in the Philippines.^{4,7}

The **long-term goal** of the current dissertation is to develop formative research that will contribute to the scant research knowledge needed to improve social and structural capacity to address Philippine's national public health HIV crisis and provide necessary groundwork for future HIV prevention and

intervention studies among Filipinx TW and cis-MSM in the Philippines. **The objective** of this research dissertation is to apply a socio-ecological model approach to identify and characterize the multilevel personal, social, organizational, and structural barriers and facilitators of condom use and other HIV-related health services among these two impacted communities. **The rationale** for this research proposal is that, once these context-specific barriers and facilitators are explored and examined, researchers can begin to design multilevel and multicomponent interventions that are specific in targeting and promoting behaviors, environments, and structures that optimize access to and uptake of condoms and other HIV-related health services to Filipinx TW and cis-MSM communities. To achieve this objective, the **specific aims of this dissertation are as follows** and are described in succeeding chapters:

Aim 1: Qualitative investigation of barriers and facilitators to condom use.

Using in-depth interview data from Project Lakambini, this chapter focused on qualitatively identifying perceived barriers and facilitators across multiple levels of the socio-ecological model in different situations or contexts (i.e., friends, school, health care facilities, convenience stores, and church) that impact access and uptake of condoms among Filipinx TW and cis-MSM who are living with and at-risk for HIV infection in Metro Manila, Philippines.

Aim 2: Quantitative mediational analysis to explore associations between social capital, efficacy, and condom use. This chapter quantitatively assessed the direct relationship between social capital and condom use and used mediational analyses to examine the role of self-efficacy in this relationship. Given that the socio-ecological model framework depends mainly on the social dynamics and interactive effects of factors across and within the multiple levels, this chapter pays close attention to the role of social capital. Social capital has two constructs: (a) social cohesion (e.g., mutual aid, trust, and solidarity present between and within TW and cis-MSM groups), and (b) social participation (e.g., involvement in community groups both inside and outside of Filipinx TW and MSM groups, reflecting participants' inclusion in the larger society). Primary data collection for this chapter came from Project #ParaSaAtin, an online survey among Filipinx TW and cis-MSM living in the metropolitan cities of Manila and Cebu, Philippines, where HIV rates are highest in the nation.

Aim 3: Structural and theory-based modeling of multilevel predictors of condom use. Using Project #ParaSaAtin data, this chapter examined the multilevel predictors and mediators of condom use using Structural Equational Modeling (SEM) analysis. The SEM model was guided by integrating frameworks of Socio-Ecological Model and Social Capital (i.e., social cohesion and social participation), and explored the interactive effects

of factors across and within the multiple levels in predicting condom use among Filipinx TW and cis-MSM.

Aim 4: Theorizing gender-affirmative HIV care. Using Project Lakambini's qualitative data, this chapter qualitatively theorized the integration of feminizing hormone therapy (FHT) and antiretroviral therapy (ART) in providing gender-affirming HIV care for TW living with HIV in the Philippines. Specifically, this chapter focused on the social-level interactions between TW living with HIV and their HIV providers.

By having completed all four specific aims, this dissertation emphasized the importance of understanding Filipinx TW and cis-MSM's lived experiences including their experiences and perspectives of utilizing condoms and other HIV-related health services. By doing so, tailored multilevel and multicomponent HIV prevention and treatment interventions can be created in the future for these two communities in the Philippines, ultimately leading to optimizing HIV prevention and treatment services delivery to improve population health. Additionally, findings of this dissertation aim to contribute to the advancement of the field in HIV prevention and treatment for TW and cis-MSM populations in the Philippines, as well as in other global settings, populations, and contexts alike.

BACKGROUND AND SIGNIFICANCE

HIV epidemic is a rapidly expanding national public health problem in the Philippines. Since the first report of HIV/AIDS in the Philippines in 1984, the increase in HIV incidence remained relatively “low and slow” until the recent decade (2010s) when there was an exponential rise in the number of people diagnosed with HIV.^{2,15} Based on the 2019 UNAIDS report on global HIV epidemic, the number of people living with HIV has increased by approximately 5-fold, from 15,000 (confidence interval [CI]=13,000 – 18,000) in 2010 to 77,000 (CI: 65,000 – 90,000) in 2018.^{1,15} Moreover, in 2018 alone, there were a total of 13,000 new HIV infections — about than 3 times the incidence in 2010.¹⁵ The rapid upsurge of HIV infections has led the World Health Organization (WHO) to refer to the Philippines as the country with ‘the ‘fastest growing HIV epidemic’ in the Asia-Pacific region.³ The Philippines stands in striking contrast to declining or plateaued HIV incidence rates in other Asia-Pacific countries. This rapid increase in HIV rates poses a tremendous challenge in providing access to and promoting uptake of condoms and other HIV prevention and treatment health services among communities that are largely vulnerable to the epidemic.

Communities of Filipinx (i.e., gender and race neutral term for people living in the Philippines) transgender women (TW) and cisgender men who have sex with men (cis-MSM) are highly impacted by the HIV epidemic. In our systematic review and meta-analysis of the HIV prevalence in the Philippines,¹⁶ we found an epidemiological shift in the country’s HIV trend regarding populations at risk for and are living with HIV beginning in 2008, from female sex workers and bar

entertainers via heterosexual transmission, to Filipinx TW and cis-MSM communities via same-sex transmission. The national epidemiological surveillance data provided by the Philippines' Department of Health (DOH) supports this finding, reporting that 83% of the newly reported HIV cases in 2017 is concentrated among communities of TW and cis-MSM.² In particular, young Filipinx TW and cis-MSM are at high risk, with two-thirds of new HIV cases found among youths and young adults below the age of 35 (i.e., 28% between 15 and 24 years old, 58% between 25 and 34 years old).² While not all surveillance systems disaggregate and categorized TW separate from cis-MSM, the 2015 Philippines DOHs' Integrated HIV Behavioral and Serologic Surveillance (IHBSS) noted that 38% (n=3535) of MSM identify as female.⁴ Based on these reports, the data points to TW and cis-MSM youths and young adults as priority populations in high need of HIV prevention and treatment services. The national public health response to control, prevent, and treat HIV infections must, therefore, focus on researching the best and optimal strategies to reach and link Filipinx TW and cis-MSM both at risk for and are living with HIV into HIV prevention and treatment services.

Current research and service capacity to curb the epidemic remain limited, undermining access to and uptake of condoms and other HIV services targeted towards Filipinx TW and cis-MSM. Despite their significant risks of HIV infection, only a limited proportion of TW and cis-MSM in the Philippines have access to HIV prevention and treatment services, such as HIV testing, condoms, antiretroviral therapy (ART), Pre- and Post- Exposure Prophylaxes (PrEP and PEP).^{8,9} For example, as of the writing of this dissertation, in the greater Manila area

there are 14 HIV Counselling and Testing (HCT) facilities, with only two non-governmental organization (NGO)-operated clinics and one private clinic specifically targeting cis-MSM.¹⁷ Among these HCT facilities, there are also two social hygiene clinics run by local government units, which are touted as cis-MSM-friendly.¹⁸ However, there is an absence of preventive and treatment interventions targeting transgender people, and no known HIV prevention and treatment facilities are trans-friendly and competent in providing services that are sensitive to transgender populations and their health needs. Healthcare facilities providing HIV prevention and treatment efforts Filipinx TW and cis-MSM are deemed insufficient in their outreach strategies and provision of care towards Filipinx TW and cis-MSM.

Findings from the UNAIDS Global Report (2017) show sub-par coverage, with only 27.9% of MSM and 27.1% of transgender people in the Philippines being reached by HIV prevention and treatment programs.¹⁵ The Philippines' DOH Health Sector Plan recently adopted the 90-90-90 guidelines set forth by the WHO and UNAIDS, showing that among people living with HIV in 2017 (n=77,000), 67% of people living with HIV know their HIV status, 32% are on treatment, and 29% are virally suppressed.^{7,19} Among Filipinx TW and cis-MSM, these indicators show slight deviations from the national rates (both groups reported together, n=46,052); 63% are of Filipinx TW and cis-MSM living with HIV know their HIV status, 31% are on treatment, and 24% are virally suppressed.⁷ Additionally, 12% of Filipinx TW and cis-MSM living with HIV have been tested for viral load, suggesting that infrastructures and provisions of key services like viral load testing – a key component of HIV care and a gateway for understanding whether treatment

regimens are effective – are inadequate.⁷ A review report by the World Health Organization (WHO) on the Philippine health sector response to the HIV epidemic also underscored that “most programme activities remain focused on FSWs [female sex workers], mostly through the vast and busy network of SHCs [social hygiene clinics], while HIV continues to spread, unabated, among other key populations [like TW and cis-MSM] that have little or no access to services suited to their needs.”²⁰ As such, these data suggest that access to and uptake of services such as condoms, HIV testing, ART, and adherence to HIV care and medications remain poor, leaving a large amount of the populations at risk for and living with HIV untested, unlinked to care, and unknowledgeable of their viral load and suppression. Knowledge on how to address barriers to achieving the 90-90-90 targets among TW and cis-MSM in the Philippines are underexplored.¹⁹

The multilevel socio-ecological contextual factors impacting access to and uptake of condoms and other HIV-related health services among Filipino TW and cis-MSM are unknown. Based on national surveillance reports, Filipino TW and cis-MSM are disproportionately at risk for HIV infection due to inconsistent condom use and high sexual risk-taking behaviors.^{2,21,22} Given the ongoing risks for these two communities, it is imperative for HIV programs to identify and address barriers and facilitators to increase access to and uptake of condoms and other HIV-related health services. As indicative of the low uptake of HIV-related health services, Filipino TW and cis-MSM have unique health needs that are not being adequately addressed by the current HIV programs in the Philippines.^{5,18,23} For example, the UNAIDS report indicates that only 37.7% of TW and 49.8% of cis-MSM

are using condoms, respectively.¹⁵ Among young Filipinx TW and cis-MSM (ages 15 to 24), 37% reported having some access to condoms, 35% displayed comprehensive knowledge of HIV prevention, 35% are aware of public facilities offering HIV services, and only 6% are aware that HIV treatment is available for free.⁴ Moreover, the Philippines' DOH has called for further investigation of the socio-ecological barriers to condom use and other HIV-related health services that can be promptly addressed.^{4,7}

Reasons for low uptake of HIV-related health services are limited and often drawn from programmatic barriers such as poor HIV education, condom distribution, and outreach programs.^{4,7} However, other reasons across the personal, social, organizational, and structural levels from the perspectives of TW and cis-MSM in the Philippines are underexplored. ***Chapter 1 of this dissertation fills this gap in literature by qualitatively identifying perceived multilevel barriers and facilitators across the socio-ecological model that impact access and uptake of condoms using qualitative interview data of Filipinx TW and cis-MSM.*** Based on a modified Socio-Ecological Model, this chapter aimed to identify factors related to condom use based on different contexts and situations. Specifically, this Chapter explored social and structural barriers and facilities of condoms per context or situations relating to friends, schools, health care facilities, convenience stores, and church. This is a departure from the conventional Socio-Ecological Model given that it recognizes that different barriers and facilities to condom use may or may not be present in different situations or context. To achieve this aim, this chapter utilized an integrated analysis using (a) situational analysis approach based on principles

articulated by Clarke and Friese (2007),²⁴ to situate our data within each context or setting explored, and (b) principles of inductive thematic approach, articulated by Braun and Clarke (2006),²⁵ to facilitate identification of emergent themes about Filipinx TW's and cis-MSM's knowledge and uptake of condoms.

Due to specific social, cultural, political, and geographical contexts, research strategies specific to the contextual factors and lived experiences of TW and cis-MSM in the Philippines are needed. The body of literature within HIV research among populations with marginalized gender and sexual identities have shown that TW and cis-MSM populations experience pervasive exposure to adverse social and structural conditions, including violence, systemic barriers to legal recognition, lack of healthcare clinics and providers that are competent to provide care, widespread discrimination, enacted stigma, homophobia, and transphobia.²⁶⁻²⁸ As a result, TW and cis-MSM individuals face substantial obstacles that are interrelated with being able to access health care services including, lack of healthcare facilities providing services they need, housing and economic adversity and instabilities, as well as experience higher rates of psychosocial problems, including depression, substance-related disorders, and suicidality—all of which impacts their ability and capacity to engage in HIV prevention and treatment services such as HIV testing, condoms, PrEP/PEP, and ART.²⁶⁻³¹

Little is known about how the Philippine's cultural, political, and geographical contexts impact Filipinx TW and cis-MSM's social and behavioral HIV risk and their access to and uptake of HIV-related health services. For example, the current limited public health response partially stems from the culturally and

politically conservative values regarding sex and promotion of condom use in the Philippines, where strong religious beliefs permeate many aspects of society (approximately 93% of the population identifies as Catholic, 5.5% as Muslim, and 1.5% other religion).³² Due to these pervasive conservative values for HIV-related health services like condoms, Filipinx TW and cis-MSM individuals may experience shame, humiliation, and stigmatization and may have a distinctive social norms, attitudes, and behaviors for strategically accessing and using condoms.^{5,33} Current laws limit government distribution of contraceptives, preventing local NGOs and health clinics to do extensive condom distribution drives to reach young Filipinx TW and cis-MSM, instead rely on people to get condoms from already limited health facilities.^{5,33} As traveling to and from healthcare facilities is a problem for primary care delivery, transportation and cost of travel may pose as problems for getting HIV healthcare services given that the Philippines is an archipelago, with most cities being separated by large bodies of water.^{34,35} Little is known about how TW and cis-MSM respond to the limited availability of HIV-related healthcare services in areas with highest rates of HIV (e.g., Metro Manila, Metro Cebu, and Central Luzon).² As such, it is important to identify factors that may mitigate these experiences. **Chapter 2 of this dissertation filled this gap in the research literature by examining the relationship between social capital and condom use, and specifically analyzing the role of self-efficacy as a mediating factor in this relationship.** In particular, analysis will pay a close attention to the roles of two constructs of social capital³⁶⁻³⁹ — social cohesion (e.g., mutual aid, trust, and solidarity present between and within TW and cis-MSM groups) and social participation (e.g., involvement in community groups

both inside and outside of Filipinx TW and cis-MSM groups, reflecting participants' inclusion in the larger society) —as primary exposures that could mitigate condom use.

Developments, applications, and adaptations of theoretical models and frameworks specific to the lived experiences of TW and cis-MSM in the

Philippines are pertinent to improve access and uptake of HIV-related health services, including condoms.

Within the public health literature, social and behavioral models and frameworks help explain relationships between exposures and behavioral health outcomes.^{40,41} Interventions that are theory-based can lead to better and specific promotion of motivations and attitudes that can change behavioral health outcomes such as increase in uptake of HIV-related services, safer sex practices, and treatment adherence.^{42,43} However, developments, applications, and adaptations of theoretical models and frameworks specific to the lived experiences of TW and cis-MSM in the Philippines are lacking. In our systematic review, we noted the lack of HIV research that targeted and sampled Filipinx TW and cis-MSM populations.¹⁶ Only two out of 29 unique included studies were specific to cis-MSM, and no studies assessed transgender populations or reported data on gender expression or gender identity indicators. Due to specific country-specific social, cultural, political, and geographical contexts, our findings suggest the need to develop and adapt conceptual or theoretical models and frameworks to prioritize HIV prevention strategies and contextualize HIV risk and prevention according to the lived experiences of Filipinx TW and cis-MSM.⁶

The Socio-Ecological Model is a widely used theory-based framework that aids in understanding barriers and facilitators across multiple levels (e.g., personal, social, organizational, and structural) that influence behaviors like condom use and other HIV-related healthcare services, and has been applied to other populations to understand access and uptake of HIV-related health services.^{10,12} However, this model has not been explored and applied in the contexts of TW and cis-MSM in the Philippines.⁶ As such, to adequately understand how to optimize delivery of condom use for Filipinx TW and cis-MSM, it is critical to understand the socio-ecological contextual factors that impact access to and uptake of these HIV-related health services, including condoms, among these important communities substantially affected by the HIV epidemic in the Philippines. *Chapter 3 of this dissertation aimed to fill this gap in the literature by applying the socio-ecological model to examine multilevel predictors of condom use among Filipinx TW and cis-MSM using Structural Equation Modeling analysis.* Details of the socio-ecological model and structural equation modeling analysis are provided in Chapter 3. Results from this analysis inform multilevel interventions aimed at increasing condom use among TW and cis-MSM in the Philippines, as well as other global settings, populations, and contexts alike.

Moreover, theories that aim to understand how to improve HIV services such as ART adherence among TW living with HIV in the Philippines remain scant. Previous studies with trans women have shown that adherence to gender affirming services such as feminizing hormone therapy (FHT) can lead to higher ART adherence,⁴⁴⁻⁴⁶ and viral suppression.^{31,44,47} Other studies have noted that a key

interpersonal and social aspect of gender-affirmative care (i.e., care that is responsive to the health needs of TW)⁴⁸ includes having trained HIV providers who are competent in delivering ART and FHT services to TW. In particular, providers who are affirming of TW's gender and womanhood during patient-provider interactions increase positive healthcare experiences and ART outcomes among TW.^{29,49} However, studies that are grounded in understanding how to integrate HIV services with gender-affirmative care in the Philippines are limited, presenting a gap for research. **Chapter 4 of this dissertation theorized and offer a new Gender-Affirmative HIV Care framework to understand how FHT and ART decisions by TW are shaped by their interactions and communications with their HIV providers.** Specifically, this chapter described the importance of aligning HIV providers' rhetoric and concerns along with TW's gender goals to increase adherence to both ART and FHT. Conversely, it also described situations that result in either poor FHT and/or ART adherences due to misalignment of providers' rhetoric and concerns and TW's gender goals. Results of this analysis provide ways to guide HIV providers who provide services to TW living with HIV and whose rhetoric and concerns are non-gender-affirmative.

DESIGN OVERVIEW AND TIMELINE

Altogether, the three aims of the current dissertation were:

- Aim 1: A qualitative investigation of the barriers and facilitators of condom use. The primary data analyzed was from Project Lakambini, which was collected Summer of 2017.
- Aim 2: A quantitative mediational analysis exploration of social capital, condom efficacy, and condom use via data collected from Project #ParaSaAtin, with special attention to social cohesion and social participation as main exposures. This primary dataset was collected in Summer of 2018.
- Aim 3: A structural equation and theory-based modeling guided by the frameworks of social capital and Socio-Ecological Model using Project #ParaSaAtin quantitative dataset. This primary dataset was collected in Summer of 2018
- Aim 4: A qualitative investigation aimed to theorize a Gender Affirmative HIV Care Framework using primary dataset of TW living with HIV and their HIV providers (as key informants) from Project Lakambini. This primary dataset was collected Summer of 2017.

This dissertation was conducted within a 2.5-year period (see Table 1). Year 1 focused primarily on achieving Aim 1 and 4 activities like data coding, data analysis, and literature review. This also included preparing study materials for primary data collection for Aims 2 and 3 and submitting IRB approvals. Year 2 focused on achieving Aims 2 and 3 with activities that included data management and cleaning, data analysis, manuscript preparation, and dissemination of findings through conferences and journal publications, as well as preparation for the defense of this dissertation.

Table 1. Timeline of study activities

Year		2018			2019				2020	
Quarters		2	3	4	1	2	3	4	1	2
Activities										
<i>Aim 1: Qualitative investigation of barriers and facilitators of condom use</i>										
	Review literature									
	IRB- approved: June 2017									
	Data- collected: July-August 2017									
	Data coding and analysis									
	Manuscript preparation									
	Dissemination									
<i>Aim 2: Quantitative mediational analysis of social capital, efficacy, and condom use</i>										
	Review of literature									
	IRB approval									
	Data collection (primary data collection, Summer 2018)									
	Data management & cleaning									
	Data analysis									
	Manuscript preparation									
	Dissemination									
<i>Aim 3: Structural and theory-based modeling of multilevel predictors of condom use</i>										
	Literature review									
	IRB Approval									
	Data collection (primary data collection, Summer 2018)									
	Data management and cleaning									
	Supplemental SEM Seminars									
	Data analysis									
	Manuscript									
	Dissemination									
	Dissertation Preparation									
<i>Aim 4: Theorizing gender-affirmative HIV care</i>										
	Review literature									
	IRB- approved: June 2017									
	Data- collected: July-August 2017									
	Data coding and analysis									
	Manuscript preparation									
	Dissemination									

**CHAPTER 1: Barriers and Facilitators to Uptake of Condoms among Filipinx
Transgender Women and Cisgender Men who have sex with Men: A Situated
Socio-Ecological Perspective**

1.1 Abstract

Transgender women (TW) and cisgender men who have sex with men (cis-MSM) are disproportionately impacted by the national HIV crisis in the Philippines, where the HIV incidence has, in large part, been attributed to condomless sex. This study sought to qualitatively examine the socio-ecological factors that contribute to low condom uptake among Filipinx TW and cis-MSM communities in Manila.

Between July and August 2017, we conducted semi-structured qualitative interviews with 30 TW and cis-MSM participants (n=23 and 7, respectively). We identified structural factors described by TW and cis-MSM, and noted that they varied per situation and context of: (a) friends (e.g., as condom promoters and educators), (b) schools (e.g., lack of sex education and HIV curriculum), (c) health care facilities (e.g., availability, educational programs, and HIV testing requirement), (d) stores (e.g., placement of condoms, distance to store, and cost), and (e) church (e.g., prohibition of condom distribution programs, and unsupportiveness).

Condom-related stigma as a social factor was pervasively present across all situation or context. Our findings support the need for multilevel condom promotion interventions that are tailored per situation or context. Future research is needed to identify factors that can be leveraged for condom promotion strategies within diverse situations.

1.2 Introduction

Globally, HIV infection rates remain extremely high among key affected populations like transgender women (TW) and cisgender men who have sex with men (cis-MSM).^{50,51} A worldwide meta-analysis study showed TW are 49 times more likely to be living with HIV compared to all cis-adults of reproductive age, with estimated prevalence rates of 17% among TW in low-income and middle-income countries.⁵⁰ Pooled estimates of HIV prevalence were consistent across global regions, particularly in South and Southeast Asia with 15% prevalence among cis-MSM.⁵¹ The Philippines is a middle-income Southeast Asian country that is experiencing one of the fastest growing HIV epidemic crises globally, and stands in stark contrast to other countries in the Asia-Pacific region where HIV rates are declining.¹⁹ The number of people diagnosed with HIV in the Philippines has increased nearly 15-fold, from 3,800 cases in 2005 to 56,000 in 2016; this emerging epidemic is concentrated among key populations including Filipinx (i.e., a gender and race neutral term to describe people living in the Philippines) TW and cis-MSM in Metro Manila.¹⁵

The increasing diagnoses of HIV among Filipinx TW and cis-MSM has been attributed, in large part, to condomless sex.^{4,52} According to the Philippines' 2015 Integrated HIV Behavioural and Serologic Surveillance (IHBSS), which surveyed TW and cis-MSM (n=3,535 and 5,963 participants, respectively), 58% of those who had anal sex in the past 12 months did not use condoms (i.e., had condomless anal sex).⁴ Previous research has identified socio-ecological factors for condomless anal sex are

multi-level: personal, social, and structural-level.^{13,26,53} No known empirical studies have applied this framework to the context of the Philippines' emerging HIV epidemic.¹⁶ According to the Philippines' IHBSS report, reasons for condomless anal sex among Filipinx TW and cis-MSM include unavailability of condoms at the structural-level (53%), and having others disapprove use of condoms at the social-level (9%). Personal-level factors such as disliking condoms (21%) and believing that condoms are unnecessary (10%) also contribute to condomless sex; other person-level reasons (7%) included forgetting to use a condom, not knowing how to use condoms, and that condoms are expensive. Additionally, among those who had access to HIV services from clinics and/or peer educators, only 29% received free condoms in the past 12 months. While some of the barriers to condoms use are identified, important questions remain about how and why condoms are or are not utilized, why these barriers exist, how they can be addressed, and what situational factors facilitate condom use.¹⁶

Yet, despite these surveillance indicators, there is limited empirical research on the situational barriers and facilitators of condom use among Filipinx TW and cis-MSM.^{7,54} A recent systematic review of the Philippines' HIV epidemic reveals that there are currently no empirical studies that characterize the multi-level socio-ecological factors that impact uptake of condom use among Filipinx TW and cis-MSM.¹⁶ In other studies that examined condoms use among TW and cis-MSM, contextual or situational risk factors have been found to be associated with increased condom use beyond the dominant individual-focused paradigms that emphasize information and motivational factors.^{31,55} In order to develop

contextually and situationally relevant interventions, research must characterize the multiple co-occurring factors that challenge how condom uptake can be improved for these populations, for example stigma, lack of sex educational programs, discrimination, poverty, and religion.^{55,56} These factors are not well-described among Filipinx TW and cis-MSM in Manila. Moreover, the Philippines is a predominantly Catholic country,³² where stigma and discrimination against trans and cis-MSM people is widespread, and condom distribution and sexual health education programs are stifled by conservative norms.^{7,18,20,54} As such, there is a need to understand how these country-specific socio-ecological factors impact condom uptake of Filipinx TW and cis-MSM's in Manila.

Given the unique situational context of Filipinx TW and cis-MSM and the need to inform current strategies for condom uptake for this community in an emerging epidemic, the purpose of this study is to qualitatively identify socio-ecological barriers or facilitators to improving uptake of condoms. In this article, we present findings from Filipinx TW and cis-MSM who are at risk for or are living with HIV in Metro Manila.

1.3 Methods

1.3.1 Study Design and Participants

Between July and August 2017, we conducted semi-structured, one-on-one qualitative interviews with TW and cis-MSM in Metro Manila, Philippines. The purpose of the interview was to identify and briefly describe socio-ecological factors

that impact uptake of HIV-related services including condom distribution programs, HIV and other sexually transmitted infection (STI) testing and counselling, and biomedical modalities like pre- and post- exposure prophylaxes and antiretroviral therapy. This study specifically focused on the uptake of condoms among Filipinx TW and cis-MSM. The study was designed using principles of community-engaged research.⁵⁷ Two local HIV non-governmental organizations (NGOs) collaborated as study partners, and an early draft of the interview guide was piloted and iteratively revised through its administration to two Filipinx TW and two cis-MSM community members to ensure that study implementation approaches (e.g., participant recruitment, language of interview, comprehension of interview questions/probes) were appropriate, respectful, and sensitive to participants.⁵⁷ Informed by our study partners, we used convenience sampling and active recruitment via posting of study flyers at venues where we know TW and cis-MSM congregate (e.g., community centres, bars/night clubs) and social media (e.g., Facebook). Participants were eligible if they were: (1) 18 to 29 years old, (2) identify as a TW or cis-MSM, (3) self-reported condomless anal sex in the past year with a male sexual partner; (4) living in Manila metropolitan area; (5) willing to be audio-recorded; and (6) willing to provide written informed consent.

1.3.2 Procedures

Interested participants contacted our office phone and were screened for eligibility. Eligible participants were then scheduled for an in-person interview. Each interview lasted between 70 to 90 minutes and was conducted in private

rooms at the offices of our local study partners. Interviews were conducted by two trained qualitative researcher assistants (RAs) and by the lead investigator. All interviews were conducted in English as it is a common language throughout the Philippines,⁵⁸ and was not an impediment to recruiting, creating rapport, and interviewing participants. The interview guide addressed condom use barriers and facilitators across the following multi-level socio-ecological factors: (a) knowledge and personal experiences of using condoms; (b) social communications or discussions about condoms; and (c) structural settings or places where they access condoms (e.g., school, convenience stores, clinics). All participants received \$10 USD (~500 Philippine Pesos) for their time and participation.

All procedures for this study were approved by the Brown University Human Research Protection Program Institutional Review Committee in Providence, Rhode Island. Written informed consent was obtained from all participants. Participants were informed about the purpose of the study and their rights to confidentiality, withdrawal, and refusal to answer any questions. Participants were advised to use pseudonyms for their name in the interviews and any mention of personally identifiable information were removed from transcripts.

1.3.3 Analysis

We utilized principles of inductive thematic approach, articulated by Braun and Clarke,²⁵ to guide our qualitative analysis, which included developing codes and facilitating identification of emergent themes about TW's and cis-MSM's knowledge and uptake of condoms. Thematic analysis identifies themes based on patterns that

emerge from the data. Its first phases includes immersion in the data for familiarity, generating and defining initial codes, and identifying themes based on codes; the latter phases involve looking for themes that mapped onto an overarching conceptual framework (i.e., socio-ecological framework),¹³ and noting which themes are more useful than others in understanding the phenomenon. Additionally, we also used a situational analysis approach based on principles articulated by Clarke and Friese to situate our data within each context or setting explored.²⁴ This allowed us to identify themes per context, situation, or setting. These approaches are appropriate to our research aims given the dearth of literature and the very little understanding about what is known about condom uptake in this specific context and sample. An inductive approach (rather than deductive) was appropriate as there was no *a priori* or predetermined theory, structure, or framework utilized during the conception of this paper and when analysis where conducted. The identification of the overarching conceptual framework (i.e., socio-ecological framework) was determined after the research team thematically analyzed the data, which was then used to derive the overall structure of analysis and situate the themes within each context or setting to make meaningful contributions to understanding what is going on within the data. Four members of the research team were instructed in the application of the codes and any discrepancies in coding were raised in team meetings via in-person discussions until consensus was reached. Emergent and final themes were agreed upon by all research team members. All coding occurred between September to November 2017 and were performed using Dedoose, a qualitative data management software.⁵⁹

1.4 Results

1.4.1 Participant Description

Table 2 displays the summary of the participant demographics. A total of 23 TW and seven cis-MSM were included. Over half (n=16) reported to be living with HIV, of whom 11 were TW and five were cis-MSM. The average age of all participants in this sample was 25.1 years (range, 18 to 29 years), 24.3 years for TW and 27.7 years for cis-MSM.

1.4.2 Overview of the situated socio-ecological condom uptake model

Figure 1 illustrates barriers and facilitators to condom use per situation, derived from findings from this analysis. We looked for thematic differences between TW and cis-MSM with respect to this specific research focus and found no unique themes for either groups; thus, analysis was combined across groups. Based on participants' interviews, we distinguished five different situations and contexts that were relevant to condom uptake: friends, schools, healthcare facilities, convenience stores, and churches. We further noted that structural factors differ per situation, and that condom-related stigma as a social factor was present across all situations. Structural factors included those situated in the context of friends (e.g., as condom promoters and educators), school (e.g., lack of sex education and HIV curriculum), health care facilities (e.g., cost, availability, educational programs, and HIV testing requirement), stores (e.g., arrangement or placement of condoms,

distance, and cost), and church (e.g., prohibition of condom distribution programs, unsupportiveness). These structural and social factors functioned as either barriers and facilitators to TW and cis-MSM's knowledge and uptake of condoms. These factors are briefly described below by each situation and are further noted as to whether they operate as barriers and facilitators:

1.4.3 Friends

(a) *As promoters and educators (structural facilitators).* Through our analysis, we uncovered participants referring to friends as a collective organization (i.e., as clans or situated networks) that comprise structural agents (e.g., promoters, educators) and social norms (e.g., rules about what is or is not taboo to discuss). In the context of friendships, participants described their friends as influential agents who function as promoters who provide them access to condoms, and as educators who shape their knowledge and motivation to use condoms. A 29-year-old TW explained how she often accessed condoms through her friends who “hoard” condoms from the “NGOs [that are] giving away condoms.” A 24-year-old TW described how she always “have a bunch of stock of condoms because [she’s being] depended... [by her friends who] are getting condoms” from her. As such, participants themselves and their friends reciprocally act as promoters of condoms within their communities. Additionally, a 27-year-old cis-MSM described that condom discussions with friends also involve “[talking] with regards to condom use...how can this disease [AIDS] transmit or how it can protect from getting an HIV.” In addition to discussing the

purpose of condoms in preventing infection, they also educate each other on how to properly use condoms.

(b) Condom-related stigma among friends (social barrier). While most participants reported being open to discussing condoms with friends, a few expressed hesitancy in discussing condoms due to the Philippines' socially stigmatizing views around condoms and sex. For example, a 24-year-old cis-MSM explained that he does not engage his friends in condom discussions as generally, "Filipinos...are uncomfortable to talk about contraceptives, condoms, [and] sex."

1.4.4 Schools

(a) Lack of comprehensive sex education and HIV curriculum (structural barriers). In reflecting on the context of schools (including primary and secondary school settings), TW and cis-MSM expressed that a primary reason for their inability to learn about condoms, particularly for the purpose HIV prevention, was because these topics were lacking in the curriculum. Reflecting on her education, a 22-year-old TW described how the Philippines educational system "do[es] not have the comprehensive sexual education" nor does it integrate HIV topics in the curriculum. A 27-year-old TW expressed the need for condoms to be "practiced and discussed to everyone, even to the youth...in school." While condoms may not explicitly be part of the educational curriculum, some school clinics held condom-related seminars for the purpose of birth control, but not for HIV prevention. For example, a 27-year-old MSM recalled having learned about condoms when participating in a seminar

sponsored by his school clinic to “promote condoms for family planning to minimize [family size] ... [but] they don't talk about HIV.” This was echoed by a 29-year-old TW who explained, “[the discussion] was not expounded, it was just enumerated. These [condoms] are available...used for prevention of pregnancy, but not directly for [preventing] HIV and AIDS.”

(b) Condom-related stigma in school (social barrier). The lack of condom- and HIV-related curricula in schools stemmed in part from the church's influence on the school system. A 27-year old TW explained the intricacies of the Philippines' education system and the role of the church in curriculum design. She stated, "The Department of Education is not yet open to [condom promotion]. And the educators don't know how to do it... [T]he curriculum is not in place. [The] church [fears] that when you introduce condoms...you are giving [the students] the signal that they can do sex everywhere." As such, in schools, TW and cis-MSM as students are not learning about using condom for HIV prevention as churches and schools in the Philippines continue to stigmatize condoms and sex.

1.4.5 Health care facilities

(a) Condom programs: education, free cost (structural facilitators). TW and cis-MSM described learning about accessing free condoms via health care facilities and NGO-run condom programs. One 29-year-old cis-MSM learned how to use a condom because an NGO “demoed it” to them. A 22-year-old TW said these demos included “protocol [instructions] about when to use condom...[the] need to see the expiry

date, and step by step... [and] it includes correct use of condoms.” One 29-year old TW remembered learning about “correct and consistent use of condoms... when [they were] outreached by an HIV organization.” As such, health care facilities and NGOs not only provided condom education programs to those who come to their facility, but also actively performed outreach in the community. Additionally, some participants described how they prefer accessing condoms at health care facilities and NGOs because condoms are provided at no cost. As explained by a 24-year-old TW, “It’s easy because in the clinic it’s for free. You don’t need to pay for condom... so it’s not hard to access.”

(b) Condom programs: lack of outreach capacity to disseminate information about free cost, out of stock, HIV testing requirements (structural barriers). Among the key barriers identified by participants included not knowing that condoms are available free of charge. When asked about her thoughts about free condoms, a 21-year-old TW noted how it is beneficial “if [community members] know that they are available” but that “not everyone knows that [they] can get it for free.” When asked about his thoughts about the community’s knowledge of free condoms, a 27-year-old cis-MSM echoed that “knowledge and education [of free condoms]” is important to the “prevention [of] spread of disease risk.” Other barriers included programmatic issues such as temporary stockouts and requiring HIV testing before giving condoms. A 27-year-old TW who promotes condoms among her friends described the “need to communicate to [their health care facility they have] no condoms at all.” She continued by indicating this issue occurs “just minimal[ly].”

Additionally, some health care facilities and NGOs required HIV testing prior to giving out condoms to TW and cis-MSM community members, particularly those who are not living with HIV. As articulated by a 28-year-old TW: “Nowadays it’s really hard to get free condoms, especially when you are...a negative person. Cause when you’re negative...you can’t have a free condom until you’re being tested.” As such, while participants are interested in using condoms, having to go through HIV testing as a requirement to receive condoms is in itself a structural barrier.

(c) Condom-related stigma in healthcare facilities (social barrier). When asked about any difficulties accessing condoms in health care facilities, a few participants noted the lack of discussion they have had with their providers due to stigmatization of condoms. A 27-year-old TW described that she has “never encountered talking about condoms with my doctor [and nurses] ... because it's like a taboo thing to talk about.” Another 22-year-old TW explained how her friends were afraid to get condoms from health care facilities: “For some young transgender [women], they are afraid to get condoms there. Because, they are thinking that the health service provider thinks they will [have] sex with anyone.” As such, while most health care facilities and NGOs promote condoms, some TW and cis-MSM community members may experience or perceive condom-related stigma from some health care providers or staff.

1.4.6 Convenience Stores

(a) *Inconspicuous arrangement and placement of condoms, distance to stores, and relative cost (structural barriers).* TW and cis MSM noted that condoms in convenience stores are often placed away from plain sight. This placement is often behind the counters, which makes it difficult to easily find condoms. As noted by a 26-year-old TW, one “cannot see [condoms] around the store.” A 22-year-old TW echoed, “here in the Philippines... the seller of condoms is hiding the condom, or the condom is inside the counter.” Another barrier described is the inaccessibility of condoms due to distance to convenience stores. As a 27-year old cis-MSM explained, “In some other places like provinces or secluded areas...condom use is not being used because... [convenience stores are] far from the center or it's far from place where you can buy it.” As such, traveling to and from distant convenience stores represents a barrier to buying condoms. Lastly, some participants noted that buying condoms can be a prohibitive expense for them and other people with low-incomes. As a 21-year-old TW explained, “In the Philippines, it's easy [to buy condoms] if you have money.” Another participant, a 27-year-old cis MSM echoed, “For me, it's not very easy, but if you have money, you can buy anywhere to use condom.” A 27-year old TW explained how condoms are expensive for their friends, “my friends, they tell me, no, they don't want to use condoms They reject it, because ... it's very expensive, the condom, so they couldn't afford to buy.”

(b) *Condom-related stigma in convenience stores (social barrier).* Participants also noted that they are often stigmatized when purchasing condoms. As condoms are

often placed behind the store counter, it places the individual at risk of being interrogated by the seller. A 22-year-old TW explained why she finds it difficult to buy condoms in stores, “sometimes [the seller asks you,] ‘what do you do, why do you buy a condom’ so sometimes it’s so hard to buy condom in convenience store.” Encountering shame-based stigma while buying condoms was also explained by a 25-year old TW: “[The] culture in the Philippines, they’re not quite friendly with using condoms so the problem is, it’s not easy to buy when in a public place, because people...think ‘oh, she’ll will have sex later’, that’s why.” A 29-year-old cis-MSM also mentioned how it was “awkward buying a condom over the counter” for him. As such, while some TW and cis-MSM participants may make it to the store, their socially stigmatizing experiences in the store discourage them from buying condoms.

1.4.7 Churches

(a) Unsupportive stance and prohibiting condom distribution activities (barriers).

In addition to the disapproving stance of churches in the Philippines with regard to promoting condom education programs in schools, described previously, participants also mentioned how churches prohibit condom distribution activities. As noted by a 29-year-old TW, “there are certain sectors of our government, mainly the church, that prevent these [condom distribution] activities from happening, not merely prevent but they are not pro for these activities.”

(b) Condom-related stigma in church (barrier). Participants in this sample mentioned that churches in the Philippines are generally unsupportive of condoms and often stigmatize people who use condoms for HIV prevention. As a 27-year-old cis-MSM explained, “With regards to condoms...especially in the church...the church doesn't want this kind of contraception or using this kind of protection... to prevent the diseases to spread.”

1.5 Discussion

This study demonstrates the importance of structural and social factors faced by Filipino TW and cis-MSM in different situations when considering use of condoms to prevent HIV transmission. Specifically, we found that these socio-ecological factors vary by situation or context, and impact Filipino TW's and cis-MSM's knowledge to navigate access and uptake of condoms. Our findings support the notion that considering multilevel and multi-component HIV prevention interventions to address structural and social factors experienced by TW and cis-MSM could likely enhance behavioural change recommendations such as condom use.^{31,55,56} This is particularly important in the context of the Philippines where minimal condom distribution programs exist.^{7,20} Efforts to optimize facilitators and reduce barriers are therefore needed where such programs are found. Findings from this analysis revealed the role of structural and social factors that can serve as either barriers or facilitators to accessing and using condoms for TW and cis-MSM in the Philippines.

Our participants cited multiple structural and social barriers to condom use, including knowledge and uptake, which have not been described via situational analysis in previous studies among Filipinx TW and cis-MSM.¹⁶ Specifically, we found that structural factors vary per situational context. For instance, participants reported not receiving enough sexual health education and HIV curriculum in schools, and when some of them did, condoms are taught as a pregnancy prevention tool rather than for HIV/STI prevention; this type of messaging could likely influence participants' understanding that condoms may not be applicable to their lives. Due to the influence of the church, the education and distribution of condoms for HIV prevention within school settings are not supported by most school-specific policies in the Philippines. Some participants rely on health care facilities to be their sole source for getting both comprehensive condom education and free condoms, which likely facilitate increase knowledge and uptake of condom use. However, these programs, as described by those who have accessed them, are often undermined by structural barriers.^{7,16,20} For example, participants reported that health facilities require HIV testing prior to giving free condoms. This type of protocol, if true, warrants further empirical investigation. Moreover, some participants cited cost as a barrier to purchasing condoms in convenience stores. Given that participants already have access to these stores, future research should examine how free condoms could be placed in stores to remove this barrier, providing a way to leverage this type of setting as access points to free condoms. Overall, these results suggest both a need for structural interventions designed to enable the seeking and usage of condoms as well as a need to tailor other

interventions to specific situations or settings rather than a universal intervention across all settings.⁶⁰

We also found that participants experienced stigma relating to condom use pervasively across all situations examined, but also noted that stigma manifested differently within each situation. Our participants expressed that while condoms are generally not discussed openly across most settings in the Philippines, often citing it as a taboo subject, participants also noted that there are differences in which that discussion is being communicated in each situation. For example, in the context of churches and schools, stigma against using condoms is communicated by promoting abstinence and not exposing students to comprehensive sexual education where information about condom can be learned, for fear that condoms might promulgate sexual behaviours and diseases with youths. While abstinence programs have been debunked by HIV and sex researchers as insignificant in delaying both initiation of sex and safer sexual behaviours,⁶¹⁻⁶³ this research remains underexplored among Filipinx TW and cis-MSM individuals. Future research examining how to best adapt and implement comprehensive sexual education programs would need to pay closer attention to context-specific structural and social barriers in schools and faith-based entities in the Philippines, including stakeholders (e.g., professors, church leaders) in these settings.

Another example illustrated by our participants on how stigma is communicated differently at the social-level compared to other situations is in the context of convenience stores. Our participants described being shamed and interrogated by convenience store sellers when asking for help or for location of

condoms in stores and being perceived to be sexually sinful or promiscuous—all of which discourage Filipinx TW and cis-MSM individuals from purchasing condoms. Limited access to condoms in stores has been documented previously, but has not been described as a source of stigma.^{64,65} Researchers have noted that condoms are a “socially sensitive product” that creates embarrassment in public and can influence buying behaviour of consumers;^{66,67} however, contrary to these studies, our participants cited being shamed by sellers for buying condoms instead of feeling embarrassed. This illustrates the importance of addressing stigma as a social barrier and its unique operationalization in the context of convenience stores in the Philippines. It also highlights how sellers uphold this stigma by communicating about condoms as a taboo commodity. As sellers in convenience stores play an important role in the consumer experience,^{64,67} future research on HIV prevention that aims to promote condoms in convenience stores should explore how sellers can be leveraged for this work, including their potential role in de-escalating stigma experienced by Filipinx TW and cis-MSM.

Lastly, we found key structural facilitators that positively influence knowledge and uptake of condoms in contexts with friends. Most of our participants and their friends described educating each other about condoms (i.e. as peer educators) as well as promoting the use of condoms by actively stocking and distributing condoms towards their friends (i.e., as peer distributors or promoters). Future research should identify sources of sexual health information among peer educators to ensure that information about HIV and condoms are being accurately and positively promoted and disseminated to or sought by community members.

These findings point to the potential role of peer-delivery among Filipinx TW and cis-MSM community members. One program in Cebu City, Philippines called Femina Trans has provided condoms and lubricants via peer-to-peer approach,⁵² but little is known about the extent in which such program can be scaled up and maintained elsewhere in the Philippines. Studies exploring social linkages such as social cohesion (i.e., working collectively to promote a well-being of community members), have been found to positively impact HIV prevention behaviours including condom behaviours.⁶⁸⁻⁷⁰ Additionally, Filipinx TW and cis-MSM community members have been documented to organize themselves as members of clans.⁷¹ As such, future research should understand the role of clan memberships and their impact among Filipinx TW and cis-MSM's condom uptake. As HIV interventions based on peer-delivery have been shown to have some positive effect on HIV risk behavior,⁷² interventions that aim to change these behaviours among these Filipinx groups should also explore this peer approach in promoting HIV-related services including condoms.

1.5.1 Limitations

This study is not without limitations. First, not all barriers and facilitators may have been identified in the present study. Given the limited interview time, attention to participants' fatigue, and the broad scope of the socio-ecological framework used, not all factors related to access and uptake of condom knowledge and uptake may have been captured in the interviews. Other factors (e.g., demographics) would have also improved the context around the findings of this

study. Additionally, various types of each settings such as public vs. private schools, secondary vs. higher education, hospital vs. community-based health care facilities were not fully examined in this study, which may yield various, nuanced differences in the structural- and social-level factors we identified. Other limitations are related to the qualitative study design. Since we utilized a convenience sampling recruitment approach, it is possible that not all of the views of Filipinx TW and cis-MSM community members in Manila are represented in this analysis. It is possible that some TW and cis-MSM who did not go to the health care facilities or other venues where we recruited, and who may have different condom-related experiences, were not captured in this study. Although this research was unable to identify specific factors that differentiate TW and cis-MSM with respect to our primary research aim, it is possible that key differences might arise over time with different samples, especially as these communities continue to evolve in the Philippines. Additionally, the findings of this study may reflect a specific period of time when HIV is on the rise and the political and social responses to the epidemic are at an early phase in the Philippines.^{15,16} Lastly, as these interviews were conducted in English and performed by Filipina-American interviewers, it is possible that legacies of colonialism may have influenced the power dynamics between the interviewer and interviewee that could lead to social desirable responses, especially when the behaviours in question are stigmatized and socially taboo.⁷³ Moreover, interviewing in English could also lead to 'stilted' responses from participants given English is not usually the language of conversation for most Filipinx.

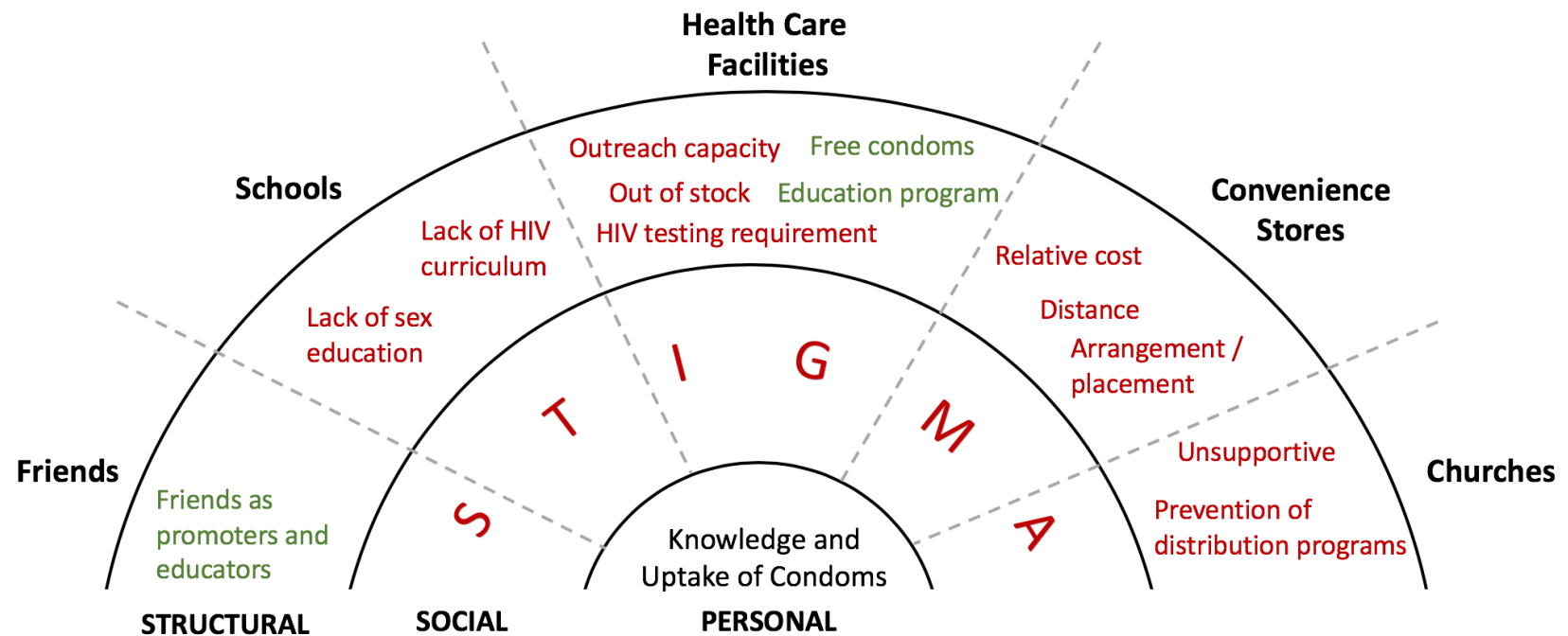
1.6 Conclusion

To our knowledge, this study represents the first empirical qualitative assessment regarding structural factors affecting condom uptake among TW and cis-MSM in the Philippines. We found that multiple structural and social facilitators and barriers exists across all situations or contexts we examined. Our findings support the other previous studies that called for a multilevel component intervention to promote condoms use beyond behavioural public health recommendations.^{31,55,56} We further expanded this call to tailor such multilevel intervention approaches by identifying, evaluating, and addressing barriers and facilitators that uniquely exist in each situation, and leveraging those factors for condom promotion strategies within each context.

Table 2. Age and self-reported HIV status among Filipinx transgender women and cisgender men who have sex with men (N=30).

	N=30	Transgender Women (n=23)	Cisgender Men (n=7)
Age (mean, range) in years	25.1 (18-29)	24.3 (18-29)	27.7 (24-29)
Self-reported HIV Status			
Positive	16	11	5
Negative	14	12	2

Figure 1: Situated socio-ecological condom uptake model among Filipinx transgender women and cisgender men who have sex with men.



CHAPTER 2: Condom use and social capital among Filipinx transgender women and cisgender men who have sex with men: A structural equation modeling

2.1 Abstract

The HIV crisis in the Philippines is driven largely due to condomless sex among communities of transgender women (TW) and cisgender men who have sex with men (cis-MSM). Condom use could be promoted by increasing social capital (i.e., access and utilization of resources through one's perceived social trust, mutual aid, social norms, and solidarity with other community members) in these communities, because social capital might increase one's condom use self-efficacy. We analyzed data from 318 Filipino TW and cis-MSM in the Philippines who completed a web-based survey. We used structural equation modeling (SEM) to examine the direct association between social capital and condom use behavior and whether condom use self-efficacy (initiation and negotiation) mediates this relationship. In our final standardized SEM adjusted for gender, age, location, and income, higher social capital significantly predicted self-efficacy in condom initiation and negotiation ($\beta=0.47$, $p<0.001$), and self-efficacy in condom initiation and negotiation was strongly associated with condom use ($\beta=0.61$, $p<0.001$). Moreover, we found that self-efficacy in condom initiation and negotiation fully mediated the relationship between social capital and condom use (β_{direct} (before mediation) =0.16, $p<0.05$ vs. β_{direct} (after mediation) =0.01, $p>0.05$). Future HIV prevention interventions should consider promoting social capital among communities of TW and cis-MSM in the Philippines.

2.2 Introduction

Transgender women (TW) and cisgender or non-transgender men who have sex with men (cis-MSM) are disproportionately impacted by HIV infection worldwide,^{74,75} particularly in countries where HIV epidemics are growing.¹ The Philippines is a Southeast Asian country where in the past decade, HIV has become a national public health crisis.¹ The number of people diagnosed with HIV has increased by four-fold, from 16,000 cases in 2010 to 68,000 in 2017.¹ HIV risk among priority populations is of particular concern: nearly four out of five new HIV diagnoses annually are among Filipinx (i.e., gender and racial neutral term to describe people residing in the Philippines) TW and cis-MSM communities.^{1,76-78} Moreover, of the 11,427 reported cases in 2018, about half (n=5,756) are among young adults age 25 to 34 years.

Condomless sex has been identified as the main driver of the HIV epidemic in the Philippines,^{4,79} with only half of the 531,500 cis-MSM and about a-third of the 122,800 TW surveyed in the Philippines reporting condom use during their last sexual encounter.¹ A recent report from the Philippines' 2015 Integrated HIV Behavioral and Serologic Surveillance (IHBSS) showed that over half (58%) of TW and cis-MSM respondents (n=3,535 and 5,963 participants, respectively) had condomless anal sex in the past year.⁴ Understanding the Filipinx social context may help provide opportunities for HIV prevention in the Philippines.

Previous studies have suggested that communities of Filipinx TW and cis-MSM socially organize themselves in cohesive networks, and often refer to their

social groups as “clans.”^{80,81} Clan membership could either be a social driver or buffer for HIV risk.⁸² For example, studies have described Filipinx clans as a social networking group that provides peer/social support, facilitates access to resources (e.g., condoms), and alleviates experiences of prejudices.^{54,80} In another study, clan members revealed having high knowledge of HIV/AIDS but also having inconsistent condom use with multiple clan members.²² As such, examining Filipinx social context may help provide opportunities for HIV prevention in the Philippines.

Social capital has been shown to influence condom behaviors among vulnerable communities like TW and cis-MSM.^{69,83-86} Definitions of social capital often involve two primary components: social cohesion and social participation.^{36,39,87-91} In general, condom use behaviors tend to improve when individuals report high levels of social cohesion and participation in their social communities.^{36,39,92,93} While there are no social capital studies in the Philippines,¹⁶ other studies from different settings provide insights. For example, a study among cis-MSM in Swaziland showed that higher social cohesion and participation were positively associated with an increase in condom negotiation efficacy with partners as well as actual consistent condom use.⁶⁹ To the best of our knowledge, quantitative research on social capital as a factor related to HIV among TW is scant, although a handful of studies have qualitatively highlighted the role of leveraging social capital as a means to impact network-level knowledge, motivation and norms about HIV prevention.^{86,94}

To fill these gaps in the literature, the purpose of this study is to examine the relationship of social capital with condom use in Filipinx TW and cis-MSM, and to

test the hypothesis that self-efficacy in condom initiation and negotiation mediate this relationship. In this mediation analysis, having high social capital is hypothesized to be associated with higher self-efficacy in condom initiation and negotiation, which then should lead to greater condom use. The study's hypothesized model is displayed in Figure 2.

2.3 Methods

2.3.1 Sample, settings, and procedures

This study utilized data from Project #ParaSaAtin, an online survey that aimed to examine social and structural factors that impact utilization of HIV services among TW and cis-MSM. The project was conducted between June 2018 and May 2019 in Manila and Cebu cities, where HIV prevalence are highest in the Philippines. Participants were recruited via convenience sampling methods by posting the study link on flyers, member only email-listserves, and private Facebook pages of local community-based organizations that provided HIV services to communities impacted by the HIV epidemic, including TW and cis-MSM communities. Participants were eligible if they: (a) were at least 18 years old; (b) identified as either TW or cis-MSM; (c) reported condomless anal sex in the past year; (c) resided in Manila and Cebu cities; (d) demonstrated English comprehension; and (e) gave online written consent. While English is commonly spoken in the Philippines,⁹⁵ we ensured language comprehension via a brief cognitive screening form which tested participants' capacity to understand English by asking a series of true/false

questions based on the consent form. In our questionnaire, we also utilized the Flesch-Kincaid Reading Level Test to maintain readability at the 6th grade level.⁹⁶

We utilized best-practices for conducting online survey questionnaire, namely a “captcha box” that eliminated robots from taking the survey,^{97,98} and enabling survey feature for unique IP address that eliminated repeat survey takers.^{98,99} The range of time for participants to complete the survey was between 20 to 25 minutes. All participants received a mobile load card worth P300 (approximately \$5.85 USD) for their time and completion of the survey. All study procedures received an institutional review board (IRB) approval by the Brown University Human Research Protection Program.

2.3.2 Measures

In this study, we explored patterns of condom use by asking participants a series of questions about their demographics, social capital and self-efficacy in condom initiation and negotiation. Descriptive statistics and reliabilities of model latent variables are displayed in Table 3.

Control variables: Demographics. We adapted demographic questions from the Philippines National Demographic and Health Survey (Philippine Statistics Authority, 2018). Participants’ gender, age, location, and income were collected.

Exposure latent variable: Social Capital. We operationalized the latent exposure variable of social capital using the following three continuous indicators:

(a) social cohesion, (b) general social participation, and (c) lesbian, gay, bisexual, transgender (LGBT) social participation. In this study, social cohesion is defined as TW and cis-MSM community members' perceived social trust, mutual aid, social norms, and solidarity with other TW and cis-MSM community members.^{90,91} Social participation reflects Bourdieu's description as resources available through social networks which TW and cis-MSM could access and utilize, via involvement or participation in community social activities and events.¹⁰⁰ For all three indicators, we performed similar scoring procedures based on previous research that used these scales.^{36,39,69}

Social cohesion was assessed using an adaptation of Lippman and colleagues' ³⁹ nine-item social cohesion scale. Example items included: "You can count on your TW and/or cis-MSM friends to help you access health services," and "You can count on your TW and/or cis-MSM friends to support the use of condoms." Responses were made on a 5-point Likert scale, from strongly agree=1 to strongly disagree=5 and were scored (mean [M] =32.51, standard deviation [SD]=7.04).

For both general and LGBT social participation indicators, we adapted Fonner and colleagues' social participation scale.³⁶ Using this scale, general social participation was assessed by asking participants about community activities related to church, community, or cultural events; LGBT social participation was specific to LGBT activities like joining pageants, HIV advocacy groups, and local LGBT organizations. Responses for involvement in each activity were either 1=no involvement, 2=member, 3=active member, 4=leader of the group, and scored

(M=6.55, SD=2.45 for general social participation, and M=8.42, SD=3.60 for LGBT social participation).

Mediator latent variable: Self-efficacy in condom initiation and negotiation.

The latent mediator variable of self-efficacy in condom initiation and negotiation was defined using two continuous indicators: (a) self-efficacy in condom initiation, and (b) self-efficacy in condom negotiation.

We adapted the assessment of self-efficacy in condom initiation from Misovich and Fisher.¹⁰¹ This eight-item scale measures condom self-efficacy by asking participants how hard or easy it would be to perform behaviors such as buying or getting condoms, using condoms while under the influence of alcohol or drugs, and using condoms in casual encounters. Items were rated in a 5-point Likert scale from 1=very hard to 5= very easy), and scored (M=26.04, SD=3.69).

Self-efficacy in condom negotiation with partners was assessed based on the self-efficacy in negotiating condoms use scale developed by Rotheram-Borus and Murphy.¹⁰² Example items from this five-item scale include: "I can refuse to have sex when I don't have a condom available," "I can ask a partner to use condoms", and "I can get ever partner to use condoms, even if they don't want to." Participants rated their responses on a 10-point Likert scale from 1=cannot do at all, 5=moderately certain can do, to 10=certainly can do. Scores were summed (M=32.12, SD=12.85).

Outcome latent variable: Condom Use. The latent outcome variable of condom use was measured using Fonner and colleagues' standardized condom use questionnaire that assessed condoms via dimensions of consistency and recency.¹⁰³ Specifically, we asked participants how often they used condoms in the past year (all the time vs. occasionally/never), and whether they used condom use during last sexual anal intercourse (yes vs. no). Consistent condom use was operationalized as having reported condom use all the time in the past year.

2.3.3 Analysis

This analysis focused specifically on condom use as a latent outcome variable of interest. Analysis was restricted to those with complete dataset on condom use (N=318). Descriptive and bivariate statistics were used to examine the distributions and patterns of our outcomes by demographic factors. For correlation analyses, we performed Pearson's r and Point-Biserial correlations according to the nature of the distributions of our examined variables for demographic, social capital, self-efficacy in condom initiation and negotiation, and condom use. Prior to running structural equation modeling (SEM) procedures, we performed a sensitivity analysis to determine internal reliability of our scale variables, which provided us with acceptable to excellent Cronbach alphas (all alphas > 0.70, range = 0.76-0.94), displayed in Table 3. To assess for multicollinearity between our independent variables, we conducted multicollinearity tests using the standard procedure for assessing variance inflation factor (VIF) and determined that this was not a concern (all VIFs < 4.00).¹⁰⁴ Then we utilized SEM to test our proposed mediation model

(Figure 2) by first testing the direct path between social capital and condom use, then including self-efficacy in condom initiation and negotiation as a mediator by including indirect paths from social capital to the mediator then to condom use. The final model was standardized and controlled for all examined demographic variables. Model fit was determined using multiple, established fit indices with standard cut-off points for acceptable model. Specifically, we used the Chi-square badness-of-fit index ($p > 0.05$), root mean square error approximation (RMSEA < 0.08), non-normed fit index (NNFI value > 0.90), and comparative fit index (CFI > 0.90), and standardized root mean square residual (SRMS < 0.08), to guide an estimation of overall model fit.^{105,106} All tests were conducted using StataSE version 15.1.¹⁰⁷

2.4 Results

2.4.1 Sample description

Sample characteristics from $n=318$ participants are displayed in Table 4. Overall, about one-fifth of the sample (19.69%) reported consistent condom use in the past year, and nearly half (42.50%) reported condom use at last sexual anal intercourse.

About half of the sample identified as TW (43.71%). Most of the participants were between 25 to 29 years old (35.53%), lived in Manila (80.19%), and earned P30,000 (approximately \$590) or more income a year (26.42%).

2.4.2 Bivariate correlations

Results of bivariate correlational analysis are summarized in Table 5. With exception of the relationships between general social participation and condom use, and LGBT social participation and last sexual anal intercourse, all measures that make up the latent variables of social capital, self-efficacy in condom initiation and negotiation, and condom use were significantly positively correlated. Being TW was significantly correlated with higher LGBT social capital, self-efficacy in condom initiation and negotiation, and condom use were significantly positively correlated. Being TW was significantly correlated with higher LGBT social participation and with lower self-efficacy in condom initiation.

2.4.3 Structural equation modeling (SEM)

The results of the final standardized SEM adjusted for gender, age, location, and income are displayed in Figure 3. Our model showed an acceptable fit [$\chi^2(37)=62.71$, $p<0.001$; RMSEA=0.05 (90% Confidence Interval=0.04-0.08); CFI=0.93; NNFI=0.87; SRMR=0.05]. Social capital was significantly associated with self-efficacy in condom initiation and negotiation ($\beta=0.47$, $p<0.001$), and self-efficacy in condom initiation and negotiation was significantly associated with condom use ($\beta=0.61$, $p<0.001$). Moreover, the results significantly supported our hypothesized mediation relationship. Specifically, our results show that self-efficacy in condom initiation and negotiation fully mediated the relationship between social capital and condom use, given that the direct path between social capital and

condom use was no longer significant after the mediator variable was added (β_{direct} (before mediation)=0.16, $p<0.05$ vs. β_{direct} (after mediation)=0.01, $p>0.05$).

2.5 Discussion

This study highlighted the relationships between social capital, self-efficacy in condom initiation and negotiation, and condom use among Filipinx TW and cis-MSM. Specifically, we found that higher social capital is linked to greater condom use, and this relationship is explained by increases in self-efficacy in condom initiation and negotiation. To the best of our knowledge, this study provides the first empirical evidence of these relationships in the context of the HIV epidemic in the Philippines.¹⁶ The results also provide the necessary background to begin examining ‘upstream’ social determinants of condom use as well as other HIV-related behavioral outcomes (e.g., HIV testing, linkage to HIV care, antiretroviral HIV medication adherence) that are consistently documented at poor rates among Filipinx TW and cis-MSM communities.^{1,4,18,77,79}

Our findings revealed that only a minority of Filipinx TW and cis-MSM in this sample reported consistent condom use (19.69%) and used condoms at last sexual anal intercourse (42.50%), signaling that overall this sample displayed low condom use. These findings are similar to surveillance reports from the 2015 Philippines IHBSS and the UNAIDS that generally described less than half of Filipinx TW and cis-MSM surveyed utilize condoms.^{1,4} As TW and cis-MSM communities in the Philippines are socially stigmatized and discriminated against based on their gender

and sexual identities,^{18,54,108,109} it is possible that some of the Filipinx TW and cis-MSM individuals in this sample experience more isolation (i.e., lack social cohesiveness and/or do not participate in LGBT events and activities) and therefore are not socially connected with other community members who could influence their condom use behavior. Given the low condom use in this sample, it is vital for future research to investigate social factors such as isolation that may have contributed to or reinforced condomless sex, including barriers to attaining social capital particularly in the Philippines' social context.

Moreover, it is also possible that there could be a subset of clan members or 'sub-clans' who may generally be more cohesive and participative in LGBT social events and activities, but that also have low knowledge and poor efficacy in utilizing condoms and other HIV preventative methods. In fact, we found that being TW was significantly correlated with higher LGBT social participation, but lower self-efficacy in condom initiation, whereas cis-MSM have higher self-efficacy in condom initiation. As such, the mechanism underlying social capital and condom use might vary between TW and cis-MSM. This finding echoes other research that suggests TW may be more active in social activities and events that may be viewed as feminine or revealing of sexual practices compared to cis-MSM.^{69,110} However, some research also suggests that decreased access to gender-specific services (e.g., hormone therapy) that affirm TW's gender identity places TW at higher risk contexts (e.g., condomless sex) to obtain gender affirmation,⁴⁸ particularly in the context of primary relationships.¹¹¹ These contentions necessitate future research to elucidate the role of gender identity and expression among clan memberships and HIV

prevention measures in the Philippines. It also warrants further examination about the impact of clan dynamics on use of condoms and other HIV prevention services, including how knowledge and information about condoms are discussed and/or disseminated among clan members. Such studies could provide a potential gateway for designing social-network based interventions that aim to boost or enhance social capital and self-efficacy among clans with low condom use.

Our hypothesis that higher self-efficacy in initiating and negotiating condom use mediates or explains the relationship between social capital and condom use was well supported by our findings. This finding expands upon previous research that have only examined the main effect of social capital on protective sexual behaviors and HIV prevention measures,^{36,39,69,112,113} as well as a number of studies have only linked perceived self-efficacy to increased intentions to use condoms and increased self-reported condom use.¹¹⁴⁻¹¹⁷ Our findings, therefore, connect these disparate bodies of literature and add further nuance to the importance of increasing self-efficacy for condom use in this population and setting. Moreover, previous evidence-based interventions targeting self-efficacy for condom use in other populations have primarily utilized skill-building activities, such as teaching and modeling of successful condom behavior by others, as well as role-playing exercises on condom use and partner negotiation.¹¹⁸⁻¹²² As such, our findings signal the importance of promoting social cohesion and participation as foundations for introducing skill-building activities around condom use and other HIV prevention measures among communities of TW and cis-MSM in the Philippines.

Lastly, the results of our mediational analysis also indicate the need to examining other social and structural barriers to network participation and community cohesiveness among Filipinx TW and cis-MSM. The lack of protective laws in the Philippines combined with the social stigmatization could negatively impact cohesiveness and affiliation with social networks or clans, and may drive clan members away from HIV prevention services.¹²³ Other qualitative research has reported that Filipinx TW and cis-MSM experience rejection from family members and religious groups, which can further lead to isolation and motivate a need for social networks or clans to provide support.¹²⁴ Therefore, future social-based network interventions that aim to increase social capital in this setting should address the social and structural factors that are specific to the lived experiences of Filipinx TW and cis-MSM.

2.5.1 Limitations

This study has several limitations. First, because of the cross-sectional design of the study it is not possible to draw conclusions about the causality of observed relationships. Future longitudinal studies are needed to further test the causality of these relationships. Second, given our non-probability convenience sampling method and recruitment sites being limited only to two cities, the results of this study cannot be generalized to all TW and cis-MSM in the Philippines. More rigorous sampling methodologies in future research are needed to address the limitation in

generalizability of the results. Finally, there might be response bias because our assessment was based on self-reports of sensitive behaviors.

2.6 Conclusions

This study demonstrates the importance of social capital for increasing self-efficacy in initiating and negotiating condom use and self-reported condom use among Filipinx TW and cis-MSM community members. It also adds to the limited existing literature on social capital and TW and cis-MSM in the Philippines and globally. Building trust, solidarity, and participation and addressing social and structural barriers to social capital within communities and clans of TW and cis-MSM in the Philippines could likely be utilized as part of future social network-based interventions that may improve coverage and use up condoms and other HIV prevention and treatment strategies.

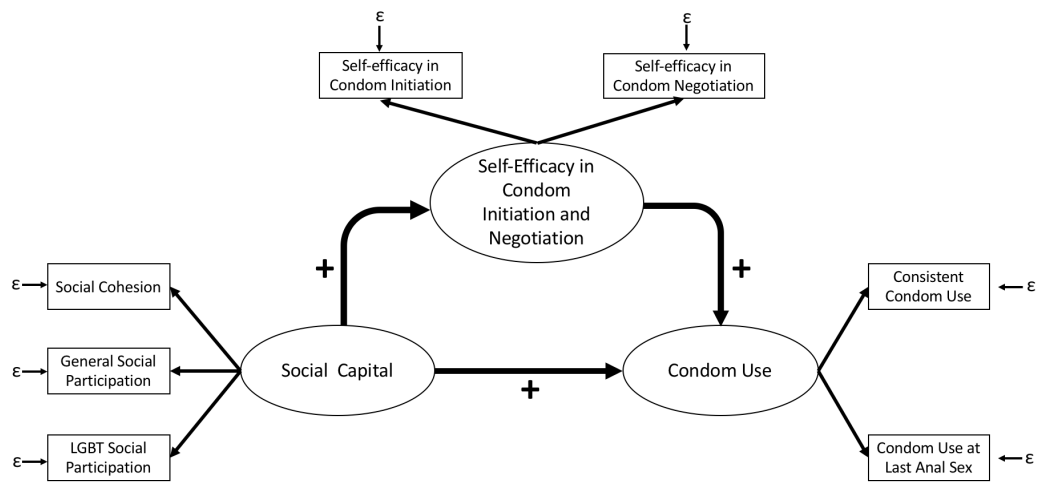


Figure 2: Hypothesized model.

Note: Error variance terms for measured variables are shown as ϵ .

Table 3: Descriptive statistics and reliabilities of model latent variables

(N = 318)

	M	SD	Range	Reliability ^a
Social Capital				
Social cohesion	32.51	7.04	9-45	0.91
General social participation	6.55	2.45	4-16	0.76
LGBT social participation	8.42	3.60	5-20	0.85
Condom Use Self- Efficacy				
Self-efficacy in condom initiation	26.04	3.69	16-33	0.92
Self-efficacy in condom negotiation	32.12	12.85	0-50	0.91

Notes: M = mean; SD = standard deviation

^a Cronbach's alpha

Table 4: Sample Characteristics by Condom Use Outcomes (n=318)

	Total sample	Consistent condom use in the past year		Condom use at last sexual anal intercourse	
	n (%)	Never/ Occasionally n (%)	All the time n (%)	No n (%)	Yes n (%)
Total	318 (100.00)	257 (80.31)	63 (19.69%)	184 (57.50)	136 (42.50)
Demographics					
Gender					
Transgender women	139 (43.71)	117 (45.88)	22 (34.92)	84 (46.15)	55 (40.44)
Cisgender men	179 (56.29)	138 (54.12)	41 (65.08)	98 (53.85)	81 (59.56)
Age					
18-24	85 (26.73)	70 (27.45)	15 (23.81)	52 (28.57)	33 (24.26)
25-29	113 (35.53)	90 (35.29)	23 (36.51)	63 (34.62)	50 (36.76)
30-34	56 (17.61)	54 (21.18)	18 (28.57)	34 (18.68)	38 (27.94)
35+	64 (20.12)	41 (16.08)	7 (11.11)	33 (18.13)	15 (11.03)
Location					
Manila	255 (80.19)	201 (78.82)	54 (85.71)	148 (81.32)	107 (78.68)
Cebu	63 (19.81)	54 (21.18)	9 (14.29)	34 (18.68)	29 (21.32)
Income					
Less than P10,000	74 (23.27)	65 (25.49)	9 (14.29)	45 (24.73)	29 (21.32)
P10,000 – P20,000	65 (20.44)	54 (21.18)	11 (17.46)	36 (19.78)	29 (21.32)
P20,000 – P30,000	41 (12.89)	34 (13.33)	7 (11.11)	22 (12.09)	19 (13.97)
P30,000 and above	84 (26.42)	59 (23.14)	25 (39.68)	43 (23.63)	41 (30.15)
No income	54 (16.98)	43 (16.86)	11 (17.46)	36 (19.78)	18 (13.24)

Notes: Column percentages are reported. No differences were found in outcomes by gender, age, location, and income.

*p<0.05, **p<0.01, ***p<0.001

Table 5: Bivariate correlation among examined variables.

	Gender^	Age^	Location^	Income^	SC	SP-gen	SP-LGBT	SEC-initiation	SEC-negotiation	Consistent^
Age	-0.17									
Location^	0.02	0.09								
Income	0.01	-0.01	0.03							
SC	0.04	-0.03	-0.05	0.12*						
SP-general	0.09	-0.04	-0.08	0.10	0.22***					
SP-LGBT	0.30***	0.00	-0.09	0.16**	0.24***	0.61***				
SEC-initiation	-0.11*	0.00	-0.12*	-0.02	0.29***	0.19***	0.18***			
SEC-negotiation	-0.04	-0.03	-0.01	0.07	0.20**	0.13*	0.20***	0.47***		
Consistent ^	-0.08	0.09	0.06	0.12	0.14**	0.07	0.12*	0.23***	0.26***	
LastSex^	-0.05	0.04	0.03	-0.01	0.16**	0.02	0.07	0.21***	0.21***	0.48***

Notes: SC = social cohesion; SP-gen= general social participation; SP-LGBT = LGBT social participation; SEC-initiation = self-efficacy in condom initiation; SEC-negotiation = self-efficacy in condom negotiation; Consistent = consistent condom use in the past year; LastSex = condom use at last sexual anal intercourse. ^ Pearson correlation was used for all correlation tests except between continuous and binary variables (i.e., Gender, Age, Location, Consistent condom use in the past year, and Condom use at last sexual anal intercourse); point-biserial correlation was used for these variables instead.

*p<0.05, **p<0.01, ***p<0.001

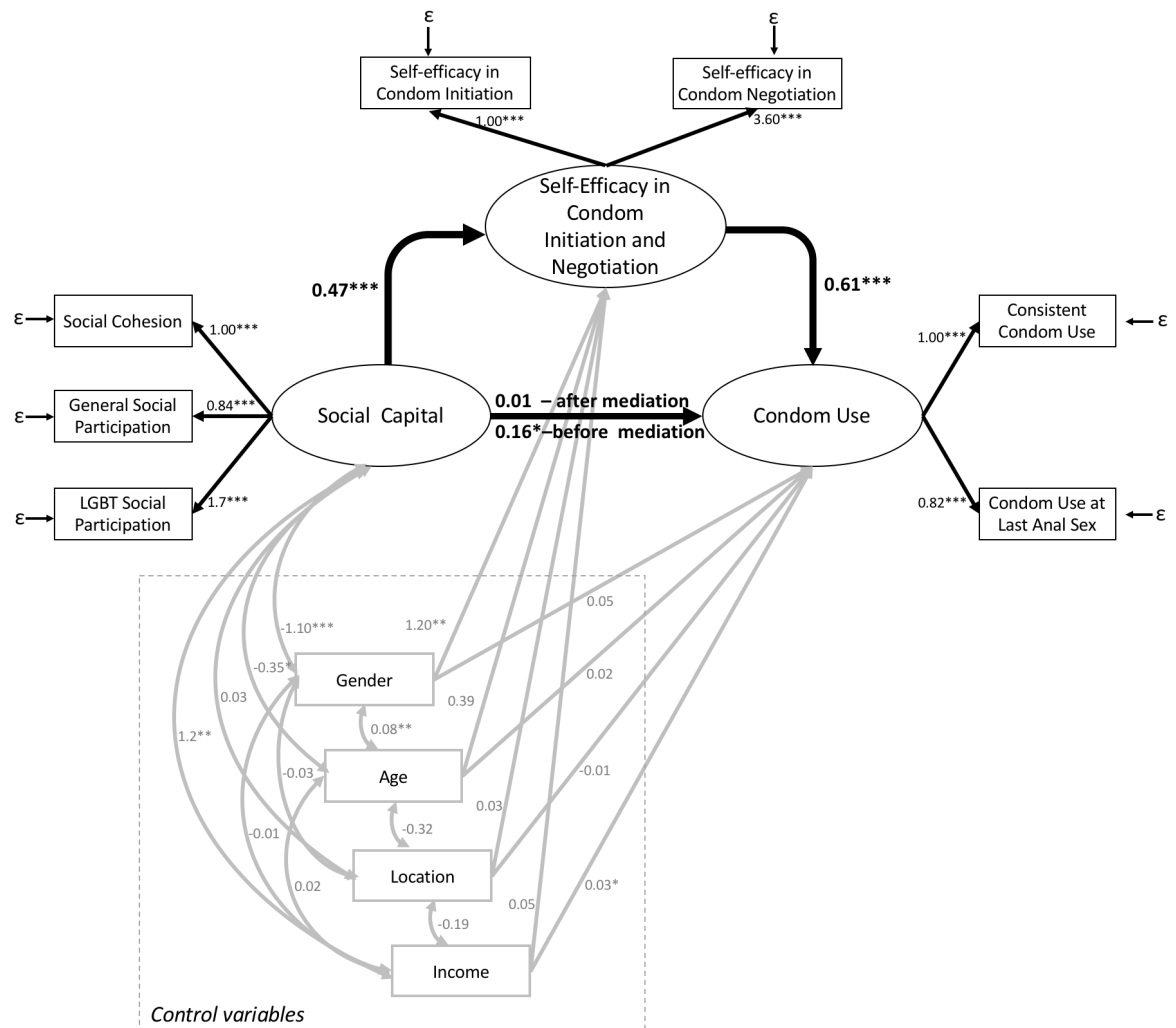


Figure 3: Final standardized and adjusted parameter estimates model.

Notes: Error variance terms for measured variables are shown as ϵ . With exception to Chi-square goodness of fit test, this model has acceptable fit [$\chi^2(37) = 62.71, p < 0.001$; RMSEA = 0.06, 90% Confidence Interval = 0.04-0.08; CFI=0.93; NNFI=0.87; SRMR=0.05].

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

**CHAPTER 3: Using structural equation modeling to characterize multilevel
socio-ecological predictors and mediators of condom use among transgender
women and cisgender men who have sex with men**

3.1 Abstract

Risks for condomless sex among transgender women (TW) and cisgender men who have sex with men (cis-MSM) in the Philippines, where HIV recently became a national public health crisis, are shaped and exacerbated by numerous risk factors and conditions across multiple levels. Between June 2018 and August 2019, we conducted a cross-sectional online study with 318 TW and cis-MSM respondents from Manila and Cebu metropolitan cities. Descriptive and structural equational modeling procedures were performed to determine direct, indirect, and overall effects between condom use and latent variables across multiple socio-ecological levels: personal- (i.e., condom self-efficacy), social- (i.e., social capital), environmental- (i.e., barriers to condom and HIV services), and structural-levels (i.e., structural violence, anti-discrimination policies). Adjusted for gender, age, location, and income, our model showed that: (1) all structural- and environmental-levels were significantly positively associated with each other (all p 's < 0.05); (2) experiencing barriers to condom and HIV services was significantly more likely to decrease social capital ($p < 0.001$) as well as condom self-efficacy ($p < 0.001$); and (3) there were significantly positive associations between relationships of social capital and condom self-efficacy ($p < 0.001$), and between condom self-efficacy and condom use ($p < 0.001$). Moreover, we found that social capital and condom self-efficacy fully mediated and buffered the negative effects between environmental and structural barriers and condom use. This is the first known study pointing to multiple relationships and pathways across multiple socio-ecological levels that can potentially be leveraged for future interventions aimed at improving condom use

among Filipinx TW and cis-MSM. Such interventions should be multicomponent and build and/or strengthen social capital and condom self-efficacy, as well as intentionally target prominent structural and environmental barriers to condom use.

3.2 Introduction

Globally, communities of transgender women (TW) and cisgender men who have sex with men (cis-MSM) are disproportionately impacted by the HIV epidemic.^{51,74,75} In the Philippines, where HIV is a national crisis, Filipinx (i.e., gender and racial neutral term to describe citizens of the Philippines) TW and cis-MSM account for about four in five new HIV diagnoses annually since 2016.⁷⁶ In the last decade, the country's HIV epidemic has rapidly increased by more than five-fold, from 15,000 cases of people diagnosed with HIV in 2010 to 77,000 in 2018.¹ Country surveillance reports have attributed TW and cis-MSM's elevated risk for HIV infection primarily to condomless sex.^{1,4,15,77} According to UNAIDS, about 1 in 3 TW (out of the estimated population size of 122,800 TW) and about 1 in 2 cis-MSM (out of the estimated population size of 531,500 cis-MSM) have ever utilized condoms in the Philippines.¹ Given the low uptake of condoms, it is important for the country's public health efforts to understand factors that impact condom use among these two important communities.

Although condom use is often considered an individual-level behavior, studies have shown that risks for condomless sex are shaped and exacerbated by numerous social, environmental, and structural factors and conditions.^{11,13,125} The Socio-Ecological Model is a conceptual model specifically developed to understand and organize multilevel predictors of a behavioral health outcome across individual-, social-, environmental-, and structural-levels.¹¹ In the literature of gender and sexual health, it has been hypothesized that TW and cis-MSM's health inequities and

behaviors arise from multiple, intersecting personal, social and structural stressors due their marginalized gender and sexual identities.¹²⁵ In the context of the Philippines, the HIV literature among TW and cis-MSM communities remains scant¹⁶ and the multilevel socio-ecological contextual factors impacting access to and uptake of among TW and cis-MSM in the Philippines are understudied. Specifically, no studies to date have applied the Socio-Ecological Model to understanding condom use behavior in these two groups in the Philippines.

Socio-ecological contextual factors that contribute to condomless sex among TW and MSM communities in other settings have been previously described.¹³ Some individual-level factors include having low self-efficacy in initiating and negotiating condom use with casual and primary partners, and poor knowledge of correct condom use.^{36,68} Social-level indicators for condomless sex include not having social capital to access and utilize community resources and information specific to condoms and other HIV prevention services.^{36,68,69} Environmental-level factors include inaccessibility and unavailability of condoms, and avoiding health services due to issues such as cost, distance, and lack of competent providers.^{88,126,127} At the structural-level, some factors that impact condom use among TW and cis-MSM include widespread violence (e.g., transphobia, homophobia) due to identifying as part of marginalized gender and sexual communities (e.g., lesbian, gay, bisexual, transgender (LGBT) community) and HIV communities.^{18,26,79,126} Moreover, lack of protective anti-discrimination policies for these communities have also been linked to lower condom use in other settings.^{128,129} Taken together, these findings

underscore the need for multilevel, high-impact condom distribution and education programs and other HIV prevention options tailored to TW and cis-MSM populations.^{39,113,130-132} However, the studies conducted to date have generally focused on predictors of condom use at a single level of analysis, rather than examining condom use predictors at multiple levels simultaneously. To our knowledge, there are no studies that have assessed these multilevel factors to predict condom use in a unified conceptual framework using structural equation modeling (SEM) approach to demonstrate associations within and across levels simultaneously.^{16,125}

There is a clear need to improve condom utilization among Filipinx TW and cis-MSM communities to reduce the spread of HIV in the Philippines.^{16,126} Currently, condom distribution programs in the country face barriers to implementation. For example, the country's Department of Health strategy to distribute condoms widely and to have public educational programs, which would provide skills and knowledge on how to properly use condoms, are currently facing strong oppositions from the Catholic Church.¹³³ The Philippines's population is 93% Catholic,³² and religious institutions are concerned that distributing condoms may encourage promiscuity and are, therefore, restricting availability of condoms only to health clinics and stores.¹³³ However, one qualitative study on barriers to condom use among Filipinx TW and cis-MSM found that despite condom availability in these venues, issues such as cost, distance to and from health care clinics and stores, lack

of privacy, and feeling stigmatized when purchasing condoms continue to be the most salient barriers for using condoms, leading many to avoid these venues.¹²⁶

To understand how these multilevel factors of condom use are linked among Filipinx TW and cis-MSM, it is essential to examine pathways to how these factors interplay across the multiple socio-ecological levels. Utilizing SEM, the purpose of this analysis is to: (1) to test our hypothesized model, displayed in Figure 4, that condom use behavior among these two communities are reinforced and/or enabled by personal, social, and environmental-, and structural factors; and (2) to assess the direct, indirect (i.e., mediating) and overall effects of associations between structural- and environmental-level condoms barriers, social-level social capital, and personal-level factors such as condom self-efficacy and condom use. Specifically, we hypothesized that:

Hypothesis 1: Social capital mediates the relationship between condoms and HIV services barriers and condom use.

Hypothesis 2: Condom self-efficacy mediates the relationship between condoms and HIV services barriers and condom use.

Hypothesis 3: Condom self-efficacy mediates the relationship between social capital and condom use.

3.3 Methods

3.3.1 Setting

Data for this study was collected through Project #ParaSaAtin, a cross-sectional online study that examined the multi-level factors that impact access to HIV services (e.g., condom use, HIV testing, pre- and post- exposure prophylaxes, and antiretroviral treatment) among TW and cis-MSM living in cities of Manila and Cebu, Philippines. The study was conducted between June 2018 and August 2019. Manila and Cebu are the top two metropolitan Philippine cities where HIV prevalence are observed to be highest.⁷⁷ This analysis specifically focused on condom use among TW and cis-MSM.

3.3.2 Sample

Participants were recruited via purposive sampling by posting the survey link at multiple online venues where TW and cis-MSM are known to commune online including: (1) private Facebook pages of local non-profit community-based organizations (CBOs) that provided HIV services and counseling to members of TW and cis-MSM communities; and (2) private member-only email listserv created by local CBOs.

To be eligible for this study, participants had to: (1) be at least 18 years old; (2) identify as either TW or cis-MSM; (3) self-report condomless anal sex in the past 12 months; (4) live in Manila or Cebu; (5) provide online written consent; and (6)

demonstrate English comprehension via a brief cognitive screening form. A brief cognitive screening form tested participants' English comprehension via a series of true-false questions based on information provided in the consent form. Example questions include: "There is no cost for you to participate in this study" (true/false), and "This study is voluntary" (true/false). Moreover, we used the Flesch-Kincaid Reading Level Test to help ensure that the survey questionnaire maintained a 6th grade level readability.⁹⁶

3.3.3 Procedures

Participants interested in the study were screened for eligibility. Following electronic informed consent, participants answered the survey using their own device. The survey was accessible to electronic devices such as laptop, smartphones, or tablet computers. The range of time for participants to complete the survey was between 20 to 25 minutes.

We implemented a series of best-practices for conducting online surveys.¹³⁴ First, to confirm that actual human participants were taking the survey, a "captcha box" was programmed into the survey to rule out robots.¹³⁵ Second, to make sure that each survey was unique and that there were no duplicates, we systematically developed and implemented a cross-validation program that flagged IP addresses that were not unique.^{98,99} Any IP address that were not unique were blocked from taking the survey.

All enrolled participants provided electronic informed consent, and received a mobile load card worth P300 (approximately \$5.85 USD) for their time and completion of the survey. All study procedures received an institutional review board (IRB) approval by the Brown University Human Research Protection Program.

3.3.4 Measures

3.3.4.1 Demographic variables

We asked about participants' demographic characteristics, specifically about their gender (transgender woman / cisgender man), age (continuous), location (Manila / Cebu) , and past year income (no income in the past year / Less than ₱10,000 / ₱10,000 – ₱20,000 / ₱20,000 – ₱30,000 / ₱30,000 or more).

3.3.4.2 Structural-level variables

We operationalized the latent variable *lack of HIV and LGBT clinic policies* via two indicators of LGBT- and HIV-related lack of anti-discrimination clinic policy for (a) LGBT patients and (b) for patients living with HIV. Specifically, we asked participants whether their primary health care clinics lacked anti-discrimination policies based on sexual and gender identities or HIV status. Responses were dichotomized into either yes or no.

We operationalized the latent variable of *HIV and LGBT structural violence* using three indicators: (a) LGBT violence, (b) anti-LGBT discrimination, (c) HIV stigma. In this study, structural violence is defined using Galtung's definition,¹³⁶

which suggests that rather than a physical image or space, structural violence is an "avoidable impairment of fundamental human needs;" This includes multiple forms of violence based on one's identities, including gender and sexual identities and HIV status.

To measure LGBT violence, we adapted Hill and colleagues' Transphobia, Homophobia and Genderism Scale,¹³⁷ which measures participant's perception of society's beliefs and attitudes about violence towards TW and cis-MSM. Specifically, we asked participants to rate how they believe other people around them feel about TW and cis-MSM people. Example items include: "People around me think that if they counter a transgender woman or a gay man, they would consider beating them up," "If people see a transgender woman or a gay man in public, they would ask them if they were a man or a woman," "I have seen people around me behave violently towards a transgender woman or a gay man," "People around me have behaved violently towards a man because he was too feminine," and "People around me have teased a transgender woman because of her masculine appearance or behavior." This is a 7-item scale with a 5-point Likert response options from 1=strongly disagree to 5=strongly agree. Responses were summed and scored continuously (Mean [M]=11.41, Standard Deviation [SD]=9.89, Cronbach α =0.93).

We assessed anti-LGBT discrimination by adapting a subsection of Davidson's Gender Inequality Scale that pertains to discrimination.¹³⁸ This subsection measures participants' experiences of facing discrimination based on

their gender and sexual identities, including whether they have lost their job or have been denied a promotion at work, removed from direct contacts with classmates, workmates or patients, and have been denied health care services, all due to their LGBT identity. This is a 4-item measure with response options that were either 1=true or false=0, and scores were responses were summed and scored continuously (M=0.71, SD=1.32. Cronbach α =0.89).

To assess HIV stigma, we utilized Reinius and colleagues' HIV stigma scale,¹³⁹ which measures public attitudes and stigma about people living with HIV. This scale asks participants to rate what people in their community think about individuals living with HIV. Example items include: "Most people believe a person who has HIV is dirty," "People who are suspected of having HIV/AIDS lose respect in the community," and "People do not want to be friends with someone who has HIV/AIDS." This is a 13-item scale with a 5-point Likert response options from 1=strongly disagree to 5=strongly agree. Responses were summed and scored continuously (M=37.15, SD=9.52, Cronbach α =0.94).

3.3.4.3 Environmental-level variables

Condom and HIV services barriers as a latent variable was operationalized via a series of items that asked participants whether they have avoided getting either condom or HIV services due to barriers they experienced in the past year. These items were based on our formative qualitative work that examined environmental-level barriers to condom use among Filipinx TW and cis-MSM.¹²⁶ Specifically, we

asked participants about whether they have avoided getting condoms due to: distance of travel from/to at convenience stores or clinic (yes/no), cost of buying condoms (yes/no), feeling stigmatized by store or clinic workers (yes/no), or having no privacy when either purchasing or getting condoms (yes/no). We also asked participants about whether they have avoided getting HIV services due to: distance of travel from/to clinics (yes/no), cost of services (yes/no), and lack of competent providers who are knowledgeable of health issues and needs specific to TW and cis-MSM (yes/no).

3.3.4.4 Social-level variables

We operationalized the latent variable of *social capital* using three indicators: (a) social cohesion, (b) general social participation, and (c) LGBT social participation. In this study, social capital is defined as the resources that are available and accessed by TW and cis-MSM via involvement and participation within their social relationships and networks.^{90,91,100}

To measure social cohesion, we adapted Lippman and colleagues' Social Cohesion Scale.³⁹ Example items from scale included: "You can count on your TW and/or cis-MSM friends to help you access health services," and "You can count on your TW and/or cis-MSM friends to support the use of condoms." This is a 9-item scale with a 5-point Likert response options from 1=strongly agree to 5=strongly disagree. Responses were summed and scored continuously (M=32.51, SD=7.04, Cronbach α =0.91).

To measure general and LGBT social participation, we adapted Fonner and colleagues' Social Participation Scale.³⁶ This scale asked participants' 4-items on their involvement in general community activities (e.g., going to church, participating in cultural events) as well as 4-items on their LGBT community activities (e.g., joining HIV advocacy groups, and advocating for local LGBT organizations). Response options were either 1=no involvement, 2=member, 3=active member, or 4=leader of the group. Responses were summed and scored continuously (M=6.55, SD=2.45, Cronbach α =0.78 for general social participation, and (M=8.42, SD=3.60, Cronbach α =0.85 for LGBT social participation, respectively).

3.3.4.5 Personal-level variables

Condom self-efficacy was operationalized using two indicators: (a) self-efficacy in condom initiation, and (b) self-efficacy in condom negotiation.

Self-efficacy in condom initiation was measured using Misovich and Fisher's Condom Self-Efficacy Scale,¹⁰¹ which asked participants to rate their self-efficacy in buying condoms from the store, getting condoms from clinics, using condoms while under influence of alcohol or illicit drugs, and initiating condoms use with sexual partners. This is an 8-item scale with a 5-point Likert response options from 1=very hard to 5= very easy. Responses were summed and scored continuously (M=26.04, SD=3.69, Cronbach α =0.92).

To measure self-efficacy of condom negotiation with partners, we utilized Rotheram-Borus and Murphy's Condom Negotiation Efficacy Scale.¹⁰² Example items include: "I can ask a partner to use condoms", and "I can get every partner to use condoms, even if they don't want to." This is a 5-item scale with a 10-point Likert response option from 1=cannot do at all to 10=certainly can do. Responses were summed and scored continuously (M=32.12, SD=12.85, Cronbach α =0.91).

3.3.4.6 Outcome variable

Condom use was operationalized using two indicators adapted from Fonner and colleagues' Condom Use Measurement:¹⁰³ (a) consistent condom use, and (b) condom use at last sex. For consistent condom use, we asked participants whether they have utilized condom use all time, occasionally, or never in the past year. We scored consistent condom use conservatively by dichotomizing responses to all the time vs. occasionally/never. For condom use at last sex, we asked participants whether they used condom during their last sexual anal intercourse (yes/no).

3.3.5 Analyses

The analysis was restricted to participants (N=318) with complete data on our latent outcome variable of interest (i.e., condom use). We performed descriptive (i.e., mean, percentages) and bivariate analyses (i.e., χ^2 or t-test) to determine patterns of association between our outcome and independent variables (Tables 6a and 6b). To determine internal reliability of our scale variables, we conducted

sensitivity analysis (Table 7). All Cronbach alphas ranged from acceptable to excellent reliability (all alphas > 0.70, range =0.78-0.94).

We tested our hypothesized model using SEM. Prior to running our SEM, we conducted a multicollinearity test using variance inflation factor (VIF), and determined that there were no multicollinearities between our measured variables (all VIFs < 4.00).¹⁰⁴ We then conducted SEM to test our hypothesized model (Figure 4), including our three proposed mediational tests. Given the modest sample size, we utilized a nonparametric bootstrapping procedure with 100 iterations to resample and increase our confidence in statistical interpretation and inference.¹⁴⁰ The final model was standardized and controlled for gender, age, location, and income. Mediation analyses were adjusted for all demographic, environmental-level, and structural variables. To determine overall model fit,^{105,106} we utilized the following standard cut-off points for SEM: (a) Chi-square badness-of-fit index ($p > 0.05$), (b) root mean square error approximation (RMSEA < 0.08), (c) non-normed fit index (NNFI value > 0.90), (d) comparative fit index (CFI > 0.90), and (e) standardized root mean square residual (SRMS < 0.08). All analyses were conducted using StataSE version 15.1, and two-tailed tests were utilized for determine significance ($p < 0.05$).¹⁰⁷

3.4 Results

3.4.1 Sample description

A total of 318 participants were included in this analysis. Sample characteristics by condom use outcomes are displayed in Tables 6a and 6b. A total of 43.71% self-identified as TW and 56.29% self-identified as cis-MSM. Most participants were between ages 25 to 29 (35.53%), living in Manila (80.19%), and had an income of ₱30,000 (approximately \$590) or more in the past year (26.42%). Nearly one third of the sample reported going clinics that lacked anti-discrimination policies for LGBT patients (32.09%) and for patients living with HIV (31.45%). Avoidance of HIV services due to environmental-level barriers was prevalent, with the majority experiencing barriers due to travel (56.60%), cost (55.35%), and lack of competent providers who are knowledgeable of health issues and needs specific to TW and cis-MSM (72.64%). Close to one quarter of the sample reported avoiding getting condoms due to cost (26.10%), stigma (26.10%), having no privacy (24.53%). Less than one fifth of the sample avoided getting condoms due to distance (16.67%). Almost half of the sample (42.50%) reported condom use at last sexual anal intercourse and nearly one-fifth of the sample (19.69%) had consistent condom use in the past year.

3.4.2 Bivariate analysis

Bivariate test results are displayed in Tables 6a and 6b. Participants with inconsistent condom use were significantly more likely to report (all p 's<0.05):

going to clinics that lacked LGBT and HIV anti-discrimination policies, (c) avoiding HIV services due to lack of competent provider, and (d) avoiding getting condoms due to cost. Inconsistent condom use was also significantly associated with lower (all p 's<0.05): (a) social cohesion, (b) LGBT social participation, and (c) self-efficacy in condom initiation and negotiation.

Participants who did not use condoms at last anal intercourse were significantly more likely to report (all p 's<0.05): (a) LGBT discrimination, (b) going to clinics that lacked LGBT and HIV anti-discrimination policies, and (c) avoiding HIV services due to lack of competent provider. Inconsistent condom use was also significantly associated with lower (all p 's<0.05): (a) social cohesion, and (b) self-efficacy in condom initiation and negotiation. Participants who did not report consistent condom use were significantly more likely to not use condoms during last sex (p <0.001).

3.4.3 Final adjusted structural equation model fit

The final standardized SEM model was adjusted for gender, age, location, and income (Figure 5). With exception to Chi-square goodness of fit test [$\chi^2(174) = 277.70$, p <0.001], the overall fit of the final standardized SEM model was acceptable with RMSEA = 0.04 (90% Confidence Interval = 0.03-0.05), CFI=0.93, NNFI=0.90, and SRMR=0.05.

3.4.4 Overall effects

Latent variables at the structural- and environmental-levels were all positively associated with each other. Specifically, HIV and LGBT structural violence was significantly associated with lack of HIV and LGBT clinic policies (A: $\beta=0.48$, $p<0.001$), lack of HIV and LGBT clinic policies was significantly associated with condom and HIV services barriers (B: $\beta=0.74$, $p<0.001$), and condom and HIV services barriers was significantly associated with HIV and LGBT structural violence (C: $\beta=0.39$, $p<0.001$).

Experiencing barriers to accessing condoms and HIV services was significantly associated with decreased social capital (D: $\beta=-0.18$, $p<0.001$), and condom self-efficacy (E: $\beta=-0.35$, $p<0.001$). Experiencing barriers to condom and HIV services was negatively associated with condom use (F: $\beta=-0.01$, $p=0.99$), however, this relationship was not significant.

Significantly positive associations were found between relationships of social capital and condom self-efficacy (G: $\beta=0.29$, $p<0.001$), and between condom self-efficacy and condom use (I: $\beta=0.47$, $p<0.001$). Social capital was positively associated with condom use (H: $\beta=0.71$, $p=0.45$), however, this relationship was not significant.

3.4.5 Direct and indirect (mediating) effects

Full mediations were observed across all three hypothesized mediational tests. Below we detailed the direct and indirect effects for each of the hypothesis test.

3.4.5.1 Hypothesis 1

Social capital fully mediated the relationship between barriers to condom and HIV services and condom use, given that the direct effect between barriers to condom and HIV services and condom use was no longer significant after social capital was added in the model [F.1.1: $\beta = -0.20$, $p < 0.05$ (before mediation) vs. F.1.2: $\beta = -0.12$, $p = 0.13$ (after mediation)]. The indirect effect between barriers to condom and HIV services and social capital (D.1: $\beta = -0.17$, $p < 0.01$), as well as between social capital and condom use (H.1: $\beta = 0.47$, $p < 0.001$) remained statistically significant and provided further support for full mediation.

3.4.5.2 Hypothesis 2

Condom self-efficacy fully mediated the relationship between barriers to condom and HIV services and condom use, given that the direct effect between barriers to condom and HIV services and condom use was no longer significant after condom self-efficacy was added in the model [F.2.1: $\beta = -0.20$, $p < 0.05$ (before mediation) vs. F.2.2: $\beta = -0.0003$, $p = 0.99$ (after mediation)]. The indirect effect between barriers to condom and HIV services and condom self-efficacy (E.2: $\beta = -0.39$, $p < 0.001$), and between condom self-efficacy and condom use (I.2: $\beta = 0.51$,

$p < 0.001$) remained statistically significant and provided further support for full mediation.

3.4.5.3 Hypothesis 3

Lastly, condom self-efficacy fully mediated the relationship between social capital and condom use, given that the direct effect between social capital and condom use was no longer significant after condom self-efficacy was added in the model [H.3.1: $\beta = 0.19$, $p < 0.05$ (before mediation) vs. H.3.2: $\beta = 0.06$, $p = 0.53$ (after mediation)]. The indirect effect between social capital and condom self-efficacy (G.3: $\beta = 0.36$, $p < 0.001$), and between condom self-efficacy and condom use (I.3: $\beta = 0.47$, $p < 0.001$) remained statistically significant and provided further support for full mediation.

3.5 Discussion

To our knowledge, this is one of the first empirical studies that linked together multilevel theoretical predictors and mediating variables in a single social-ecological model to explain condom use among TW and cis-MSM populations. The sample was recruited in the Philippines, which is currently experiencing a rapidly growing HIV epidemic. Only a minority of our sample utilized condoms consistently in the past year (19.69%) and at last sexual anal intercourse (42.50%). The results suggest that social capital and condom self-efficacy are important mediators between environmental- and structural-level barriers and condom use. These

findings corroborate with national Philippines surveillance reports that document low condom use among these two communities,^{1,77} and underscores the importance of developing multi-level approaches to improve this health behavior in the context of the current public health HIV epidemic crisis.¹ This study emphasized the significance of exploring and addressing multiple relationships and pathways across individual-, social-, environmental-, and structural-levels that can potentially be leveraged to improve condom use among Filipinx TW and cis-MSM.

This study highlighted a reinforcing feedback mechanism loop between latent structural-and environmental-level variables such that these variables' influence on each other results in their growth. Specifically, we found that HIV- and LGBT-related structural violence, lack of LGBT and HIV anti-discrimination clinic policies, and environmental barriers to condom and HIV services are all positively associated with each other, and that they altogether contribute to lower condom use. Given that these structural and environmental barriers are widespread in the Philippines and are likely to be salient in the lived experiences of Filipinx TW and cis-MSM,^{7,18,54,109} there is a need for future interventions in this setting to incorporate and address multilevel factors that are simultaneously impacting condom use behaviors. Other studies among these populations have noted that risk factors for condom use are often focused predominantly situated in the individual-level, particularly informational-, attitude- and knowledge-related factors.^{31,55,56} While addressing individual-level factors could impact condom use, such change may unlikely be maintained as they are not supported by the environmental- and

structural-factors. This study further adds this body of literature by characterizing and linking multiple co-occurring factors at the structural-and environmental-levels that determine how condom use can be improved for these populations. Given the reinforcing feedback mechanism of this loop, future examination using systems thinking analysis approach may likely be beneficial in understanding this cycle.¹⁴¹ A systems thinking analysis approach applied in behavioral research could further explicate and visualize the interconnected “system of systems” that are present in a particular environment that altogether work to sustain a particular behavior.¹⁴¹ Examining the complexity of systems and sub-systems within and across the socio-ecological levels in this setting could provide opportunities to explore other interconnected factors that could limit or balance this reinforcing loop, which may overall potentially impact condom use positively.

In agreement with previous studies ,^{39,69,88,112,114,115,117,118} this study highlights social capital and condom self-efficacy as vital protective factors that buffer against the negative effects of structural and environmental barriers on condom use. Our hypotheses that social capital and condom self-efficacy are mediators of structural and environmental barriers and condom use are, therefore, well supported by our findings. Specifically, it connects previous disparate literature that have independently examined single-level factors as the relate to condom use behaviors. For instance, previous research has noted that higher social capital is linked with increased efficacy in condom initiation and negotiation,^{39,69,88,112} and with increased self-reported condom use.^{114,115,117,118}

Other research has also suggested that social capital could help prevent structural violence and lower environmental barriers via social networks' collective participation and sharing of resources.^{36,69} A previous qualitative study characterizing Filipinox TW and cis-MSM's social networks have noted that condoms are often distributed through peer-to-peer social connections, such that TW and cis-MSM peers or "clan members" would often rely and ask each other for supplies of condoms.¹²⁶ As such, the current study characterizes a nuanced mediating role for both social capital and condom self-efficacy in promoting actual condom use behaviors in the presence of structural and environmental barriers.

Additionally, our findings highlighted contextual pathways that could potentially increase social capital and condom self-efficacy in this setting. In particular, this study found that environmental and structural barriers are inversely associated with social capital and condom self-efficacy. Increasing social capital and condom self-efficacy in this context, therefore, necessitates future interventions to examine and target upstream or distal factors that function as barriers to community participation and cohesiveness. This is in line with Bourdieu's approach to social capital,⁸⁹ which posits that inequities can be addressed by facilitating greater capacity to access of resources (e.g., condoms and other HIV services) for members of social networks to utilize and participate in. Similarly, Bandura's triadic reciprocal determinism theory have also described efficacy as a personal cognitive factor that is both influencing and influenced by behavior and assumed accessible environmental resources.¹⁴² As such, future behavioral interventions aiming to

promote condom utilization among Filipinx TW and cis-MSM should be multicomponent,¹⁴³ and should situationally examine and address the kinds of environmental and structural barriers present within social networks.

In the current context of the Philippines, the lack of protective laws specifically for TW and cis-MSM communities in combination with the widespread structural violence like stigma and discrimination present as structural barriers.^{7,18,54,109,144,145} Such barriers could likely drive community members further away from accessing resources like condoms and other HIV prevention services,^{146,147} as well as prevent community members from affiliating with their social networks. While there is currently a national anti-discrimination law (i.e., Republic Act 11166) in the country,¹⁴⁸ it only safeguards individuals based on HIV positive status; there are no existing national policies that provide specific protections to TW and cis-MSM communities that are explicitly based on gender and sexual identities.¹⁴⁵ Moreover, the current national HIV strategy⁷ makes no mention of programmatic changes at the structural level, such as anti-discrimination clinic policies as well as cultural competency trainings, that could improve care delivery to TW and cis-MSM community members. The findings of this study, therefore, point to structural gaps in HIV prevention policy strategies and programmatic trainings that could potentially increase social capital and condom self-efficacy in utilizing condoms and other HIV prevention services among TW and cis-MSM communities in the Philippines.

We also found that travel, cost, and distance to/from clinics or convenience stores are barriers to getting condoms and other HIV preventative services are linked to lower social capital, condom self-efficacy, and condom use. One possible explanation for these linkages could be due to the opportunity-cost in the context of poverty, given that about a-quarter (23.27%) of the sample earned less than ₱10,000 (approximately 200 USD) in the past year and about one fifth (16.98%) did not have income in the past year. These logistic and financial barriers pose as opportunity-cost – that is, the loss of a benefit when one person chooses one alternative option over another¹⁴⁹ – given that most individuals who experience poverty are likely to focus their time in other priorities and not on activities that may be strenuous, time-consuming and/or costly. Additionally, these barriers also act as constraints to condom self-efficacy given that the product (i.e., condoms) is cost prohibitive, therefore, the recommended behavior cannot be performed.¹⁴² While condoms are free in clinics, the findings point to the infrastructural and logistical issues in distributing condoms given the scarcity of HIV clinics in the greater Manila area, as well as the barriers to accessing clinical services noted here. As of 2018, there were 14 HIV prevention and treatment facilities, with only three community-based organization health clinics targeting cis-MSM and no clinics have been designed for TW.¹⁵⁰ These findings, therefore, align with Philippine's Health Department current condom distribution strategy to further expand availability of free condoms beyond clinics.¹³³ Additionally, while condoms can be purchased in convenience stores, it could likely continue to pose as a financial barrier to low-income TW and cis-MSM community members.

3.5.1 Limitations

There are some limitations to this study that are worth noting. First, the cross-sectional data does not allow inferences about causation between exposure and outcome variables.¹⁵¹ Future research exploring this phenomena should utilize data from longitudinal study design, which can provide temporality and can strengthen findings of the mediation analysis. Second, because the levels of socio-ecological model are defined in various ways in the literature,^{12,26,152} it is possible that some of the variables that are hypothesized in this study may belong or organized in part of or reside in a different level. Third, the variables assessed in this study are based on perceived individual-level experiences across the social-, environmental-, and structural-levels. As such, this analysis could be strengthened by having multiple sources of data that does not rely on self-reported measures (e.g., administrative data, biomarkers, surveillance, etc.). Fourth, this study utilized a convenience sampling approach through purposively targeting social media and email platforms. As such, findings of this study are not representative of and cannot be generalized to all Filipinx TW and cis-MSM, particularly those who may not have access to these platforms. Lastly, the data were collected in a self-reported manner. While self-reports are conventional methods in behavioral research, self-reports are often prone to biases particularly when questions probe participants' personal behaviors and experiences that may be stigmatizing.

3.6 Conclusion

This study examined and linked together various multilevel predictors and mediators of condom use in Filipinx TW and cis-MSM communities. Taken together, the findings of this study call for multi-level interventions to improve condom use behaviors among Filipinx TW and cis-MSM. In particular, findings reveal that social capital and condom self-efficacy are important mediators to be considered for future interventions aiming to increase condom use and other HIV services among these communities. Such multicomponent interventions should involve building and/or strengthening community cohesiveness and participation and should carefully examine and intentionally target prominent structural and environmental barriers to social capital, condom self-efficacy, and condom use.

Table 6a: Sample Characteristics by condom use outcomes (n=318)

	Total sample n (%) or M(SD)	Consistent condom use Never/Occasionally n (%) or M(SD)	in the past year All the time n (%) or M(SD)	χ^2 or t-test
Total	318 (100.00)	257 (80.31)	63 (19.69%)	
Control Variables				
Gender				
Transgender women	139 (43.71)	117 (45.88)	22 (34.92)	0.11
Cisgender men	179 (56.29)	138 (54.12)	41 (65.08)	
Age				
18-24	85 (26.73)	70 (27.45)	15 (23.81)	0.50
25-29	113 (35.53)	90 (35.29)	23 (36.51)	
30-34	56 (17.61)	54 (21.18)	18 (28.57)	
35+	64 (20.12)	41 (16.08)	7 (11.11)	
Location				
Manila	255 (80.19)	201 (78.82)	54 (85.71)	0.21
Cebu	63 (19.81)	54 (21.18)	9 (14.29)	
Past year income				
Less than P10,000	74 (23.27)	65 (25.49)	9 (14.29)	0.07
P10,000 – P20,000	65 (20.44)	54 (21.18)	11 (17.46)	
P20,000 – P30,000	41 (12.89)	34 (13.33)	7 (11.11)	
P30,000 or more	84 (26.42)	59 (23.14)	25 (39.68)	
No income	54 (16.98)	43 (16.86)	11 (17.46)	
Structural-level variables				
LGBT violence	11.41 (9.89)	11.77 (9.89)	9.96 (9.85)	0.19
LGBT discrimination	0.71 (1.32)	0.73 (1.35)	0.63 (1.23)	0.59
HIV stigma	37.15 (8.52)	36.73 (8.59)	38.84 (8.07)	0.07
Lack of anti-discrimination clinic policy for LGBT patients				
Yes	102 (32.09)	89 (34.90)	13 (20.63)	0.03*
No	216 (67.92)	166 (65.10)	50 (79.37)	
Lack of anti-discrimination clinic policy for patients living with HIV				
Yes	100 (31.45)	89 (34.90)	11 (17.46)	0.008**

No	218 (68.55)	166 (65.10)	52 (82.54)	
Environmental- level variables				
Avoided HIV services – travel				
Yes	180 (56.60)	147 (57.65)	33 (52.38)	0.45
No	138 (43.40)	108 (42.35)	30 (47.62)	
Avoided HIV services – cost				
Yes	176 (55.35)	138 (54.12)	38 (60.32)	0.37
No	142 (44.65)	117 (45.88)	25 (39.68)	
Avoided HIV services – lack of competent provider				
Yes	231 (72.64)	177 (69.41)	54 (85.71)	0.009**
No	87 (27.36)	78 (30.59)	9 (14.29)	
Avoided getting condom – cost				
Yes	83 (26.10)	75 (29.41)	8 (12.70)	0.007**
No	235 (73.90)	180 (70.59)	55 (87.30)	
Avoided getting condom – distance				
Yes	53 (16.67)	45 (17.65)	8 (12.70)	0.34
No	265 (83.33)	210 (82.35)	55 (87.30)	
Avoided getting condom – stigma				
Yes	83 (26.10)	68 (26.67)	15 (23.81)	0.64
No	235 (73.90)	187 (73.33)	48 (76.19)	
Avoided getting condom – no privacy				
Yes	78 (24.53)	64 (25.10)	14 (22.22)	0.63
No	240 (75.47)	191 (74.90)	49 (77.78)	
Social-level variables				
Social cohesion	32.51 (7.04)	32.01 (7.08)	34.55 (6.53)	0.01*
Social participation-general	6.55 (2.45)	6.45 (2.41)	6.93 (2.57)	0.16
Social participation-LGBT	8.42 (3.60)	8.20 (3.58)	9.33 (3.57)	0.02*
Personal-level variables				
Self-efficacy in condom initiation	26.04 (3.69)	25.60 (3.70)	27.80 (3.08)	<0.001***
Self-efficacy in condom negotiation	32.12 (12.85)	30.42 (12.88)	38.98 (10.24)	<0.001***
Consistent condom use				
All the time	63 (19.69)			
Never/Occasionally	257 (80.31)			
Condom use at last sex				

Yes	136 (42.50)	79 (30.74)	57 (90.48)	<0.001***
No	184 (57.50)	178 (69.26)	6 (9.52)	

Notes: Column percentages are reported. No differences were found in outcomes by gender age, location, and income.

*p<0.05, **p<0.01, ***p<0.001

Table 6b: Sample Characteristics by condom use outcomes (n=318)

	Total sample n (%) or M(SD)	Condom use at last sexual anal intercourse No n (%) or M(SD)	Yes n (%) or M(SD)	χ^2 or t-test
Total	318 (100.00)	184 (57.50)	136 (42.50)	
Control Variables				
Gender				
Transgender women	139 (43.71)	84 (46.15)	55 (40.44)	0.31
Cisgender men	179 (56.29)	98 (53.85)	81 (59.56)	
Age				
18-24	85 (26.73)	52 (28.57)	33 (24.26)	0.10
25-29	113 (35.53)	63 (34.62)	50 (36.76)	
30-34	56 (17.61)	34 (18.68)	38 (27.94)	
35+	64 (20.12)	33 (18.13)	15 (11.03)	
Location				
Manila	255 (80.19)	148 (81.32)	107 (78.68)	0.55
Cebu	63 (19.81)	34 (18.68)	29 (21.32)	
Past year income				
Less than P10,000	74 (23.27)	45 (24.73)	29 (21.32)	0.41
P10,000 – P20,000	65 (20.44)	36 (19.78)	29 (21.32)	
P20,000 – P30,000	41 (12.89)	22 (12.09)	19 (13.97)	
P30,000 or more	84 (26.42)	43 (23.63)	41 (30.15)	
No income	54 (16.98)	36 (19.78)	18 (13.24)	
Structural-level variables				
LGBT violence	11.41 (9.89)	11.53 (9.75)	11.25 (10.11)	0.79
LGBT discrimination	0.71 (1.32)	0.84 (1.42)	0.53 (1.16)	0.03*
HIV stigma	37.15 (8.52)	37.01 (8.47)	37.33 (8.61)	0.73
Lack of anti-discrimination clinic policy for LGBT patients				
Yes	102 (32.09)	67 (36.81)	35 (25.74)	0.04*
No	216 (67.92)	115 (63.19)	101 (74.26)	
Lack of anti-discrimination clinic policy for patients living with HIV				
Yes	100 (31.45)	67 (36.81)	33 (24.26)	0.01*

No	218 (68.55)	115 (63.19)	103 (75.74)	
Environmental- level variables				
Avoided HIV services – travel				
Yes	180 (56.60)	104 (57.14)	76 (55.88)	0.82
No	138 (43.40)	78 (24.86)	60 (44.12)	
Avoided HIV services – cost				
Yes	176 (55.35)	93 (51.10)	83 (61.03)	0.07
No	142 (44.65)	89 (48.90)	53 (38.97)	
Avoided HIV services – lack of competent provider				
Yes	231 (72.64)	122 (67.03)	109 (80.15)	0.009**
No	87 (27.36)	60 (32.97)	27 (19.85)	
Avoided getting condom – cost				
Yes	83 (26.10)	54 (29.67)	29 (21.32)	0.094
No	235 (73.90)	128 (70.33)	107 (78.68)	
Avoided getting condom – distance				
Yes	53 (16.67)	30 (16.48)	23 (16.91)	0.91
No	265 (83.33)	152 (83.52)	113 (83.09)	
Avoided getting condom – stigma				
Yes	83 (26.10)	45 (24.72)	38 (27.94)	0.51
No	235 (73.90)	137 (75.27)	98 (72.06)	
Avoided getting condom – no privacy				
Yes	78 (24.53)	46 (25.27)	32 (23.53)	0.72
No	240 (75.47)	136 (74.73)	104 (76.47)	
Social-level variables				
Social cohesion	32.51 (7.04)	31.54 (7.09)	33.82 (6.78)	0.004**
Social participation-general	6.55 (2.45)	6.49 (2.50)	6.63 (2.39)	0.62
Social participation-LGBT	8.42 (3.60)	8.19 (3.67)	8.73 (8.14)	0.18
Personal-level variables				
Self-efficacy in condom initiation	26.04 (3.69)	25.37 (3.70)	26.93 (3.48)	<0.001***
Self-efficacy in condom negotiation	32.12 (12.85)	29.55 (13.62)	35.54 (10.87)	<0.001***
Consistent condom use				
All the time	63 (19.69)	6 (3.26)	57 (41.91)	<0.001***
Never/Occasionally	257 (80.31)	178 (96.74)	79 (58.09)	
Condom use at last sex				

Yes	136 (42.50)
No	184 (57.50)

Notes: Column percentages are reported. No differences were found in outcomes by gender age, location, and income.

*p<0.05, **p<0.01, ***p<0.001

Table 7: Descriptive statistics and reliabilities of examined scales for model latent variables (N = 318)

	# of items	M	SD	Range	Reliability ^a
HIV and LGBT structural violence					
LGBT violence scale	7	11.41	9.89	0-35	0.93
Anti-LGBT discrimination scale	4	0.71	1.32	0-4	0.89
HIV stigma scale	13	37.15	8.52	13-52	0.94
Social Capital					
Social cohesion scale	9	32.51	7.04	9-45	0.91
General social participation scale	4	6.55	2.45	4-16	0.78
LGBT social participation scale	4	8.42	3.60	5-20	0.85
Condom Self- Efficacy					
Self-efficacy in condom initiation scale	8	26.04	3.69	16-33	0.92
Self-efficacy in condom negotiation scale	5	32.12	12.85	0-50	0.91

Notes: M = mean; SD = standard deviation

^a Cronbach's alpha

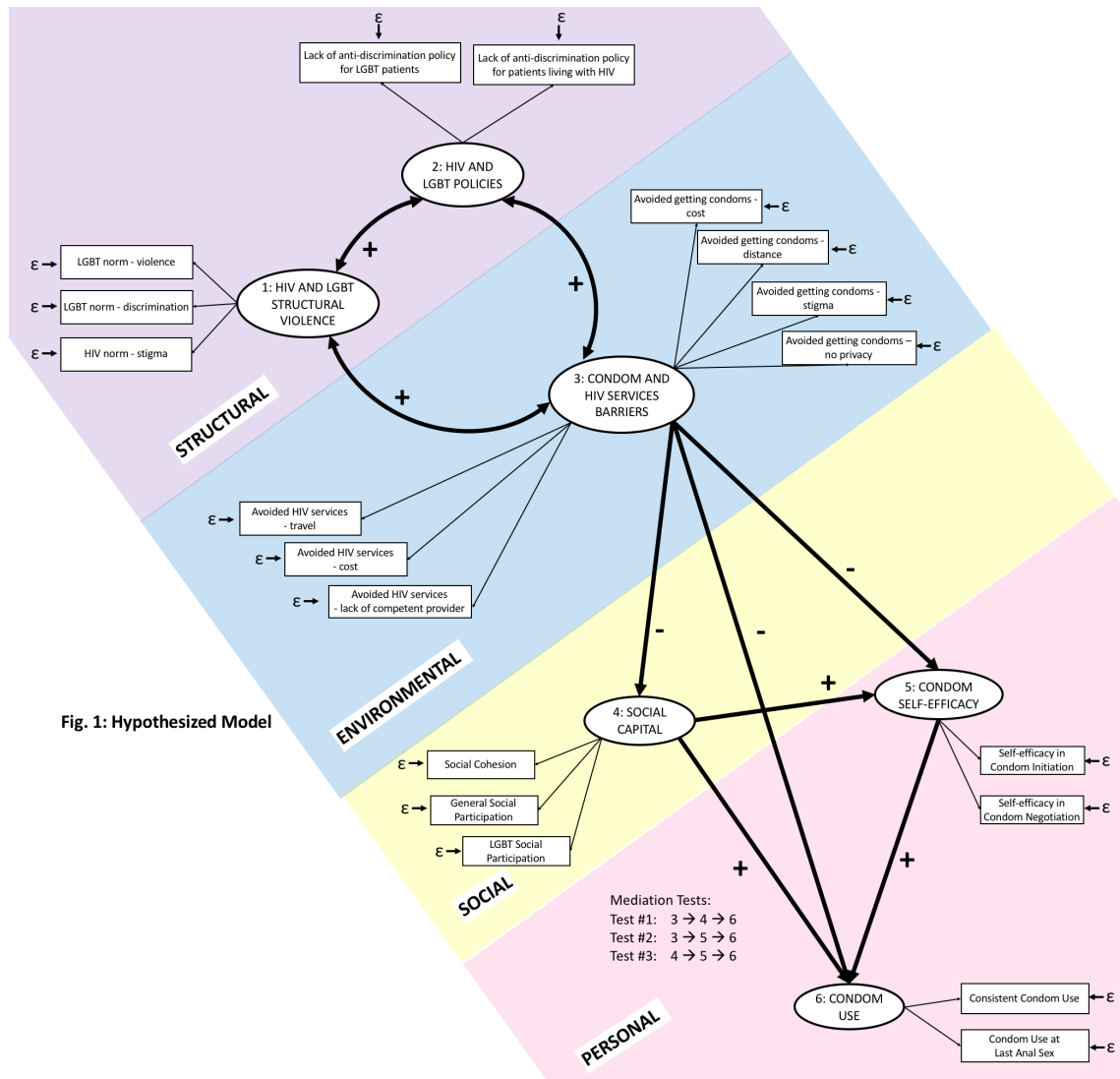


Figure 4: Hypothesized Model

Notes: Error variance terms for measured variables are shown as ϵ . Model is adjusted for gender, age, location, and income.

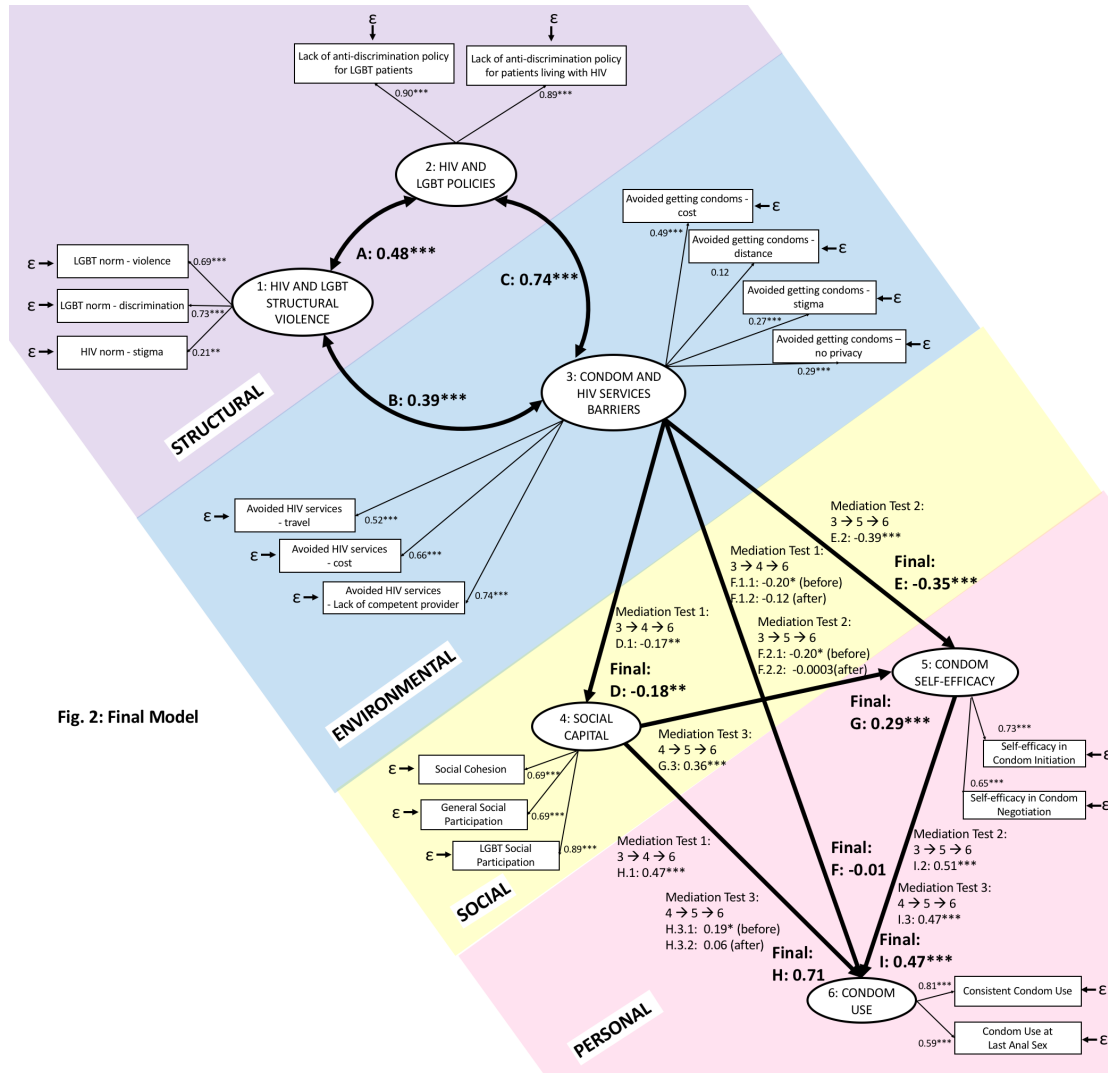


Fig. 2: Final Model

Figure 5: Final standardized and adjusted parameter estimates model with mediational analyses.

Notes: Error variance terms for measured variables are shown as ϵ . Model is adjusted for gender, age, location, and income. With exception to Chi-square goodness of fit test, this model has acceptable fit [$\chi^2(174) = 277.70, p < 0.001$; RMSEA = 0.04, 90% Confidence Interval = 0.03-0.05; CFI=0.93; NNFI=0.90; SRMR=0.05].

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

**CHAPTER 4: Gender Affirmative HIV Care Framework: Decisions on
Feminizing Hormone Therapy (FHT) and Antiretroviral Therapy (ART) among
Transgender Women**

4.1 Abstract

Integration of feminizing hormone therapy (FHT) and antiretroviral therapy (ART) is critical in providing gender-affirming HIV care for transgender (trans) women living with HIV. However, interpersonal communications with HIV providers who are not competent with FHT may complicate this integration. We conducted semi-structured interviews with trans women (n=9) who self-reported as HIV-positive and their HIV providers (n=15) from community-based venues (e.g., clinics) in Manila, Philippines. We identified five key themes from our qualitative data: (1) provider's concerns; (2) patient's goals; (3) affirmative vs. non-affirmative provider rhetoric; (4) alignment vs. misalignment of provider rhetoric to patient goals; and (5) FHT and ART-related decisions. Based on these themes, we describe a gender-affirmative HIV care framework to understand FHT-ART decisions among trans women living with HIV. Based on our data, this framework shows that provider-patient communications regarding ART and FHT consists primarily of provider concerns and patient goals regarding FHT. These communications can take on a gender-affirmative or non-affirmative style of rhetoric that either aligns or misaligns with patient goals and may lead to differences in FHT and ART-related decisions among trans women living with HIV. There exist mixed regimens and beliefs about taking FHT and ART among this sample of trans women. While trans participants' main source of health information is their HIV provider, providers are likely to communicate non-affirmative rhetoric that negatively impacts trans women's decision to take FHT and ART. Research is needed to elucidate co-

prescriptions of gender-affirmative services with HIV care among this group in the Philippines.

4.2 Introduction

Globally, transgender women (trans women) are communities of women disproportionately burdened by HIV.^{17,50,153-155} A global meta-analysis of research on HIV infection among trans women showed a prevalence of 19% (95% confidence interval = 17% to 21%);⁵⁰ when compared to all cisgender (non-transgender) adults of reproductive age, adult trans women have a 49-fold increased odds of being HIV infected.⁵⁰ The Philippines has the fastest-growing HIV epidemic in the Asia-Pacific region with a 141% increase from 2010 to 2016.^{7,156} UNAIDS has declared HIV a national public health crisis in the Philippines.^{3,153,155} In 2017, there were 11,103 reported new HIV cases in this country, which is a 20% increase from the 9264 new cases reported in 2016.¹⁵⁷ These significant increases in new HIV cases in the Philippines have been concentrated in a few key affected populations including trans women.¹⁵³

The Philippines' 2015 Integrated HIV Behavioral and Serologic Surveillance (IHBSS) Report shows that among Filipina trans women surveyed (n=3535), nearly 40% took hormones by pills and injection in the past year, and 40% had feminizing surgical body enhancements.¹⁵⁸ Additionally, 38% of trans women in two major Philippines cities demonstrated a desire for sexual reassignment surgery. Among trans women living with HIV, however, only 1% report being on antiretroviral therapy (ART), and significant drops have also been reported along the HIV care continuum leading to low levels of adherence and viral suppression.¹⁵⁸

In the context of providing HIV care and treatment among trans women living with HIV, 'gender affirmative care' refers to the process where trans women receive necessary HIV care and treatment services which also ensure medical, social, structural recognition and support for their gender identity and expression.^{48,49,159} Gender-affirmative care is multifaceted and includes the critical integration of both HIV care and treatment services with gender-affirming health services.^{44,45} Research suggests that the provision of and access to feminizing hormone therapy (FHT) and ART *combined with* trans affirmative care are vital for improving engagement and retention and for achieving viral suppression among this population.^{19,45,154,160}

Previous studies with trans women have shown that adherence to FHT and experience of gender affirmation lead to higher ART adherence,⁴⁴⁻⁴⁶ and viral suppression.^{31,44,47} Additionally, a key interpersonal and social aspect of gender-affirmative care includes having trained HIV providers who are competent in delivering ART and FHT services to trans women and who are affirming of trans women's gender and womanhood during patient-provider interactions.^{29,49} These factors have shown to increase positive healthcare experiences and engagement in HIV care and treatment.^{31,44,49,161,162} Moreover, structural factors like healthcare provider trainings that support ART and FHT prescribing practices and services for trans women also enhance healthcare facility-level norms and policies around gender-affirmative care.^{31,44,45,160} As such, gender-affirmative care for trans women highlight the importance of integrating and facilitating HIV care and treatment

services with gender-affirming services like FHT in order to be respectful of the health needs of trans women.¹⁶¹

However, availability of HIV facilities and providers who offer gender-affirmative care in the Philippines are limited, presenting an accessibility issue for trans women living with HIV. In the metropolitan city of Manila where HIV is highly concentrated,¹⁵³ there are 14 HIV Counselling and Testing facilities as of 2018, of which none are known to provide FHT or other health services tailored to Filipina trans women.¹⁷ The Philippines' health system, research priorities, and programmatic response to the HIV epidemic focuses largely on cisgender female sex workers, with few services focusing on men who have sex with men, and no documented services focusing on trans women.^{7,16,20} Problems with HIV treatment services for trans women in the Philippines are further compounded by the lack of research dedicated to trans women's HIV treatment and FHT medications at the structural-level, stigma and discrimination with providers at the interpersonal-level, and reported concerns about adverse side-effects between ART and FHT drug interactions at the personal-level.^{30,31,44,160,163} In a recent review, researchers noted that concern for negative side-effects may arise from the dearth of data that address interactions between ART and FHT among trans women.¹⁶³

Moreover, perspectives on and utilization of both FHT and ART among trans women living with HIV are not well-documented in the Philippines. Research on the relevant knowledge and skills of HIV providers in the Philippines is also limited.¹⁶

While it is known that trans women living with HIV face many socio-ecological barriers that negatively impact uptake, retention, and adherence to HIV treatment services,^{44,162,164} far less is known about their decision-making process for ART and FHT in the presence or absence of gender-affirmative care.

Given the potential for gender-affirmative care to facilitate trans women's linkage, retention, and adherence to HIV treatment and the unmet HIV health needs of this population in the Philippines, this exploratory study sought to examine the dynamics of ART and FHT decisions in the context of gender-affirmative care. We examined interviews with trans women living with HIV and with HIV providers to discuss (1) views and experiences with ART and FHT from both the patient and provider perspectives, and (2) the potential role HIV providers' incorporation of gender-affirmative care in shaping views and decisions related to ART and FHT among trans women.

4.3 Methods

4.3.1 Research Team

Table 8 displays the Consolidated criteria for Reporting Qualitative research (COREQ) Checklist.¹⁶⁵ The interview team on site in Manila, Philippines consisted of a total of three interviewers, who are all graduate-level Filipina-Americans and are trained in qualitative interviews, including the corresponding lead author (AR) who is fluent in Tagalog. The research study team is composed of US- and Philippines-

based researchers, as well as two HIV non-governmental organizations (NGOs) in Manila which served as our local research collaborators for this study. The study team had no prior relationships with participants prior to the study commencement.

4.3.2 Study Design

Using a phenomenological approach to qualitative investigation,¹⁶⁶ we sought to explore and deepen our understanding about the dynamics of ART and FHT decisions in the context of gender-affirmative care among trans women who are living with HIV as participants, and their healthcare providers as key informants, in Manila, Philippines. We utilized semi-structured, one-on-one in-person interviews to gather qualitative data until saturation was reached with regard to our primary aims.¹⁶⁷

We sampled participants using passive and active recruitment approaches. Passive recruitment strategy included posting study flyers at venues where trans women congregate such as HIV clinics, non-profit organizations, and community centers. Active recruitment included using snowball sampling technique,¹⁶⁸ in which we asked participants to refer other potential participants. Given that this community is highly stigmatized in the Philippines, these recruitment approaches were deemed appropriate by our local study partners. Key informants were recruited via referrals from HIV NGOs. Given that there is no publicly available dataset of HIV providers in the Philippines, we recruited them as key informants via

snowball sampling. Our local study partners who have deep knowledge of the local HIV NGOs in Metro Manila identified sites to recruit key informants. Invitations to participate in the study were extended to these sites.

4.3.3 Participants and Key Informants

A total sample of 24 participants were included in this study (9 trans women and 15 HIV care providers). Trans women were eligible if they: (1) were 18 years of age or older; (2) self-identified as trans women; (3) self-reported an HIV positive status; (4) reported any HIV-related behavioral risk in the past year with a male sexual partner; (5) resided in Metro Manila area; (6) were willing to be audio-recorded; and (7) were willing to provide written informed consent. We also included HIV healthcare providers from the Metro Manila area. Healthcare providers were eligible if they: (1) were 18 years or older, (2) currently working in a facility that offers HIV/AIDS services, (3) have served trans women as patients (e.g., interacted with and provided HIV-related care services for trans women), and (4) were willing to be audio-recorded and provide written informed consent. The definition of healthcare providers was broad such as to include medical doctors, nurses, and medical clinic coordinator / counselor, and staff volunteer. This broad definition was recommended by our local study partners to ensure that the inclusion of HIV NGOs and health centers, particularly those which do not have medical doctors but provide HIV care to trans women, were reflected in our sample.

4.3.4 Procedures

Participants were screened by telephone and were scheduled for an in-person interview. Interviews lasted between 60 to 90 minutes and were conducted in a private place at the local offices of our study partners. Interviews were conducted in English. Because English is one of two primary languages besides Tagalog and is integrated throughout the Philippines' education system,⁹⁵ language was not a barrier to recruitment or to building rapport with participants.

Between July and August 2017, participants and key informants were interviewed for the study by a trained interviewer using a semi-structured interview guide. The purpose of the interview guide for trans women participants was to understand the personal, social, and structural contextual factors that might influence their behaviors around uptake of HIV treatment services like ART. Specifically, participants were asked about their history of taking FHT and ART medicines, their knowledge and experiences about taking these medications, their concerns, if any, about negative side effects or drug-drug interactions, where and what kind of information they receive about FHT and ART, and how they resolve information that may be in conflict of their gender-affirming goals. Key informants were asked about similar issues in order to create a comprehensive understanding about how trans women may utilize HIV services with FHT. Specifically, key informants were asked about the provision of HIV care to trans women, their experiences providing care to trans women, and how they approach the use of FHT

and ART. Interview guides were piloted with two trans women community members and two key informants from our local HIV NGOs study partners.

Written informed consent was collected from all participants prior to interviews. During the informed consent process and prior to enrollment to the study, participants were provided information about the research study including the purpose of the study, and their rights to confidentiality, withdrawal, and refusal to answer any questions. Besides name of the interviewer, there were no other interviewer characteristics provided to participants that could bias the interviews. Trans women and health care providers who completed the interview were compensated 500 Philippines Pesos (~\$10). All study procedures were approved by Brown University Ethics Review Board.

4.3.5 Analysis Strategy

Guided by Braun and Clarke's thematic analysis approach,²⁵ four members of the study team participated in developing a codebook that facilitated identification of emergent themes. All research members were trained in the application of the codes. Any discrepancies in coding were discussed via research meetings until consensus was reached. For this study, we utilized the following codes from participants' perspective: (a) personal experiences with taking ART, (b) interactions and discussions of ART with healthcare providers, (c) motivations, experiences, and issues around taking FHT, and (d) interactions and discussions of FHT with healthcare providers. We utilized the following codes from key informants'

perspective: (a) FHT awareness, knowledge, and views, (b) ART awareness, knowledge, and views, and (c) Trans service delivery challenges and solutions. Emergent and final themes were agreed upon by all members of the study team. All coding and analysis were performed using an online qualitative data management software, Dedoose.⁵⁹ Following the coding of both sets of interviews, three members of the study team triangulated interviews of key informants and trans women to build themes regarding ART and FHT.¹⁶⁹ Based on identification and interpretation of themes, members of the study developed a working conceptual framework for understanding the processes related to gender-affirmative care around the use of FHT and ART (see Figure 6).

4.4 Results

4.4.1 Sample characteristics

Summary of provider and patient demographics are displayed in Table 9. On average, trans women in this sample were 25.6 years of age. The majority had attained at least a college education. Providers' characteristics varied by role/title, type of facility they work in. The sample consisted of two providers working at public hospitals, three at social hygiene clinics, eight at HIV NGOs, and two at state-sponsored HIV organizations.

4.4.2 Overview of key concepts

Five key themes emerged from our qualitative data analysis: (1) provider's concerns; (2) patient's goals; (3) affirmative vs. non-affirmative rhetoric; (4)

alignment vs. misalignment of rhetoric to patient goals; and (5) FHT and ART related decisions. These five themes are illustrated below via quotes from trans women and their HIV healthcare providers. They are also explained and further interpreted in the discussion section and in Figure 6. In Figure 6, we present a preliminary conceptual framework of gender-affirming HIV care based on these findings. Our model shows that provider-patient communications regarding FHT and ART consists primarily of provider's concerns and patient goals regarding FHT. These communications can take on a gender-affirmative or non-affirmative rhetoric style that either aligns or misaligns with patient goals and may lead to differences in FHT and ART related decisions among trans women.

4.4.3 Provider's Concerns

When asked about their thoughts regarding the utilization of FHT and ART medications among trans women living with HIV, most HIV providers expressed the following concerns:

(1) Lack of knowledge about transgender women's health needs. Most providers expressed awareness and "superficial" knowledge about trans women's gender affirmation health needs including FHT. As one provider illustrated:

"[Hormone] is a very popular thing to do - it's kinda expensive, the [hormone] medical management. That's my impression...How, what happened and what are the physical changes and what medications - it's more a mystery thing. But there are also resources on the

psychological impact of this kind of patient. More or less, we have superficial [knowledge], but the awareness is there.” (Provider 3, social hygiene clinic)

(2) Inadequacy of workforce capacity and training in gender-affirmative HIV care. Other providers expressed concerns towards FHT as a service that is outside the purview of their clinic/hospital’s general care. As FHT is not offered in their practice, providers are unsure about their staffs’ capacity and readiness given their inadequate training to “handle” trans women’s gender affirmation health needs. As these providers described:

“I’m not aware that we have a service in the charity or outpatient department for that...it’s a general hospital so maybe we have plastic surgery, but we don’t have any cases like that... I don’t know if an ordinary resident or nurse can handle that [providing FHT] ...and training for TGs [transgender people] no, we don’t have that. It’s general.” (Provider 3, social hygiene clinic)

“[The] facilities are not yet ready for [FHT] - I’m also not sure or aware if there are any services available in the country. Within our network, I don’t think that we have that in place.” (Provider 14, state-sponsored HIV organization)

(3) Dearth of research on FHT-ART interaction and beliefs about potential side effects. Providers noted that there are no FHT-ART studies in the context of Filipina trans women. Other providers who are familiar with the medical research literature noted the scant evidence around FHT-ART interactions. This dearth of research influences their beliefs and hesitations to provide both FHT and ART medications to Filipina trans women living with HIV. As one provider stated:

“We lack data in terms of [whether there is] contradiction in taking FHT and ART. It’s the same issue for taking FHT and ART if you’re a trans PLHIV [person living with HIV]. Those kinds of research are not available. We have international studies in the [United] States that say there is none, no contra indication, but of course it affects your liver, your lipid profile, and because you’re taking too much different kinds of meds in your body.” (Provider 11, HIV NGO)

(4) Prioritizing ART and viewing FHT as cosmetic and unimportant. Some HIV providers perceived ART as more life-saving than FHT, viewing FHT as a cosmetic need to make trans women’s skin “fair:”

“I think the challenge would lie on the use of ARV coupled with the use of other drugs, like hormones - which is used to make their skin fair.”
(Provider 14, state-sponsored organization)

It was also common for providers to suggest that trans women should stop taking FHT to allow ART to work in the body without any contradiction or side effects from FHT, like this provider explained:

“Hmm, the FHT. That's maybe not so possible here in [this hospital] for now. The FHT vs. ART, that's my main problem. Because we do client [who are] trans PLHIV [person living with HIV], they are so very sad [we] tell them to stop taking FHT...it's maybe the contradiction between FHT and ART. The side effects for, so that's why [we] want [them] to stop FHT.” (Provider 1, public hospital)

This prioritization of ART over FHT is evident from another provider’s excerpt who mentioned how they do not “focus on what [trans women] are talking about” when it comes to the “pills they are taking.” As this provider described:

“What would be their issues? I don't know, I don't have much idea about the needs of TGs [transgender people]. I know - I heard from people have this support group here, TGs are taking medications for hormones. I do not know that. I just don't focus on what they are talking about, the pills they are taking, you know?” (Provider 10, HIV NGO)

4.4.4 Patient's Goals

All trans women in this sample expressed their goals and reasons for using FHT in the context of living with HIV. These goals include continuing to take ART while having their gender affirmed, attaining self-confidence and self-esteem, and avoiding violence, as described below:

(1) Maintaining ART medication while affirming their transgender identity, femininity, and womanhood. Trans women expressed that taking FHT enables them to be themselves – as women. One trans woman mentioned that taking hormones was their “biggest dream” as it is part of their gender affirmation goals. Another trans woman expressed that they wanted to maintain taking ART while retaining their womanhood and continuing to live their life as a woman. As they explained:

“Well, taking hormones is my biggest dream. For me to have breasts, a more girly voice.” (Participant 2, age 29)

“We want to look woman, we want to look feminine. And we want to live life with ART.” (Participant 1, age 26)

(2) Psychological health. Other trans women living with HIV disclosed that in addition to facilitating their gender goals, taking FHT also improves their self-confidence and self-esteem. Specifically, one trans woman noted that FHT “boost [their] system” and how they feel about themselves as woman. This suggests that trans women see the importance of taking FHT as not only about attaining their desire look physically, but that FHT also provides mental health benefits, including a sense of confidence about who they are and of viewing themselves as beautiful. As they described:

“[If] you're taking feminizing hormones, you will look like feminine. So it will boost your system” (Participant 1, age 26)

“P: When I take it, it's too important because it's feels like you're fresh, you have that glowing...glow, it's feels like you're beautiful that's why it's important.” (Participant 8, age 25)

(3) Avoiding socially negative consequences (e.g., stigma, discrimination, and violence). In addition to the physical and mental health benefits, some trans women noted how FHT is important for avoiding socially negative consequences when interacting with other people; these interactions can include being stigmatized, discriminated, and being targeted for violence. One trans woman explained how access to FHT is particularly important in the Philippines where simply dressing as a woman is not enough to avoid socially negative consequences; without FHT to help with their gender transition, they are further singled out and prone to violence including being bullied:

“Because being transgender is not only to look feminine. Here in Philippines... if you want to be a woman, first, they want to see you as like a woman. [If you are] appearing [and only] wearing like a woman's dress, they [people] will bully you...if you're not [seen with] a feminine look but you're wearing like a woman, they will tell you you're a cross dresser, you're yuck. You have a hard face.” (Participant 1, age 26)

4.4.5 Affirmative vs. Non-affirmative Rhetoric Style from Provider-Patient Communications

Table 10 describes trans women's interactions with their healthcare providers and their actions in regard to taking FHT with ART. With the exception of two trans women who did not explicitly state their response, all trans women in this study reported discussing taking FHT and ART with their healthcare providers (i.e., provider-patient FHT-ART communications). Five out of nine trans women in the sample reported being advised by their providers to stop taking FHT with ART. When trans women were asked to describe these discussions, our analysis revealed two type or styles of rhetoric that emerged from our qualitative data, affirmative vs. non-affirmative rhetoric styles.

(1) Affirmative rhetoric. In the context of provider-patient communications, affirmative rhetoric are expressions and/or discourse that providers use to specifically convey support for trans women's goal of taking both ART medication for HIV treatment and FHT for their gender affirmation goals. Providers who utilized this rhetoric emphasized FHT as a crucial element in trans women's HIV treatment and care and recognized the need for retention in care to monitor pharmacological bodily responses of trans women. In this sample, only two trans women reported that their providers utilized affirmative rhetoric when discussing FHT-ART. One trans woman on hormone-related treatment described an example of affirmative rhetoric by an HIV provider during their conversation when she was first diagnosed with HIV:

"Yes. So, one of the, I mean, the head of the treatment hub or the AIDS research group, our doctor there, so I remember it was my first

transition phase, then I was surprised that I was diagnosed with HIV. So, forecasting things that if I may need to [have] ART, I took the liberty of asking that provider, 'Doc, would it be good, would there be any benefit or could there be any contraindication between taking ARTs and hormones?', and I was surprised...that [my doctor said], 'these are hormones, these are ARTs, you could take them at the same time' ... she told me it would still be best and advised for us to see an endocrinologist. And this way, when the levels our laboratories and stuff, the index are observed, and they are of the safe proportion."

(Participant 3, age 29)

(2) Non-affirmative rhetoric. On the other hand, non-affirmative rhetoric prioritized ART over FHT, and neither conveyed encouragement for using FHT nor supported trans women's gender affirmation goals. Providers who discussed FHT-ART with this style of rhetoric often proscribed or condemned trans women to stop taking their hormones and instead, focus on taking their ART so that they will not "die" from AIDS. One trans woman living with HIV described her discussion experiences with her provider who used non-affirmative rhetoric to discouraged her from taking hormones with ART or else face death as a consequence:

"And the last time I asked about my taking hormones, [the doctors] aren't serious [about] that, they answer me... "Do you want to look feminine? So you want to look feminine, okay. You look feminine, but you will be die...Is that okay to you?" But I have, I have, I have inside

of me that you don't understand. Why I want to take hormones. "

(Participant 1, age 26)

4.4.6 Alignment vs. Misalignment of Provider Rhetoric Style with Patient Goals and FHT-ART Outcomes

Half of trans women in this sample reported that they stopped taking FHT after discussions with their health care providers (Table 10). At the time of the interview, only half reported currently taking FHT with ART. Trans women described the type of rhetoric providers used and how such rhetoric aligns or misaligns with their gender affirmation goals, which impacts how they decide to take or not take FHT with ART (i.e., FHT-ART outcomes). Alignment occurs when patient's goals are supported with provider's affirmative rhetoric, and misalignment occurs when it is not supported. Three types of outcomes were illustrated by trans women: (1) medically-monitored FHT with ART, (2) FHT with ART without monitoring, (3) ART only.

(1) Medically monitored FHT with ART. Trans women with providers who communicated with affirmative rhetoric reported feeling supported to take FHT concurrently with ART as such rhetoric aligned with their gender affirmation goals. A perceived benefit of this was having providers monitor their body's response to medications and ensure that "they are of the safe proportion." As one trans woman described:

“[My doctor said], ‘these are hormones, these are ARTs, you could take them at the same time’ ... she told me it would still be best and advised for us to see an endocrinologist. And this way, when the levels our laboratories and stuff, the index are observed, and they are of the safe proportion.” (Participant 3, age 29)

(2) FHT with ART without medical monitoring. Trans women with providers who communicated with non-affirmative rhetoric frequently described not feeling supported about their gender affirmation goals. One outcome of this misalignment between provider rhetoric and patient goals was that trans women insisted and decided on continuing to take their FHT with ART against their provider’s advice. Because of this misalignment, some trans women decided not to tell their providers about their FHT, which led to an oversight in their care as providers were not able to monitor the effects of hormones in their bodies. As one trans woman and one provider described when asked about her reasons for FHT initiation:

“Because I believe I want to be a female because I was look really masculine before. If ever I'm thinking I want to dress like a girl and I have that muscle in my arms, my legs, I don't feel like a girl then, so I decided, I still decided to take hormones even the medical officers don't want me to take it.” (Participant 10, age 26)

“ [It] depends with whether or not the patient would disclose if they are using these [hormones]. So sometimes they would, some patients,

they would not...that can be a concern...it's not within our control.”

(Provider 14)

(3) ART only. Another outcome described by trans women from the misalignment between provider’s non-affirmative rhetoric and patient’s gender affirmation goals is stopping FHT; they conform to their provider’s advice to take ART only. Trans women described that while they had difficulty stopping their FHT, they found themselves in a life vs. death situation and felt pressured to prioritize ART exclusively, which reflects the non-affirmative rhetoric of their providers. Because of how FHT is framed non-affirmatively during their provider-patient discussion, many trans women believed and feared that FHT will impact their ART medication negatively:

“The main reason that I stopped [FHT] is that I’m more careful with my health because I have HIV, so I have to take care of my liver and if it’s the way that I’m going to die soon - I have to stop... I’m more aware of my health. If my health becomes compromise if taking the hormonal therapy, I have to stop it or not take it. (Participant 2, age 29)

“I decided to have that HIV Test, when I found out that I’m positive about HIV, I decided to stop [FHT] because...it can be affect my medication, that's why doctor told me as well that you have to stop it because it's not good for yourself that you are taking the HIV

medication and then you're taking that hormones, maybe it can affect your blood system. (Participant 8, age 25)

4.5 Discussion

This paper provides an empirical account of perspectives and experiences regarding decisions to take FHT and ART medications among Filipina trans women living with HIV, with perspectives from their HIV providers demonstrating the challenges these women experience in navigating their health needs. Based on the thematic findings of our qualitative analysis, we present a working conceptual framework regarding gender-affirmative HIV care in Figure 6. Such a framework has not been previously proposed within the HIV or hormone treatment literature addressing the health of trans women. This framework captures both positive and negative dynamics of provider-patient encounters that influence trans women's decisions for FHT with ART. It also depicts the affirmative versus non-affirmative rhetoric styles that can take place during these encounters, and how these styles may align or misalign with trans women's gender affirmation goals - thereby influencing FHT and ART decisions. We discuss social and national policy-level implications for addressing the health needs of this highly vulnerable group in the context of HIV treatment settings.

HIV providers in this study expressed multiple clinical concerns, ranging from knowledge- and attitude-based concerns (i.e., not knowing about trans

women's health needs, viewing FHT as cosmetic) to infrastructural concerns (i.e., lack of workforce capacity/training, and dearth in research on FHT-ART interactions) regarding continuation of FHT while prescribing ART to trans women. Most providers did not view trans women's FHT as important to health and would often prioritize ART over FHT. These views have been previously found in other studies where HIV providers perceived hormones as less important and were uncomfortable prescribing them.¹⁷⁰⁻¹⁷³ As providers in our study prioritized ART over FHT, less focus was placed on actually meeting the expressed FHT needs of all trans women in our study; many providers actively dissuaded them from this treatment. These providers' concerns and their prioritization of ART over FHT could be a reflection of their limited training and the lack of explicit policies around HIV and transgender health topics as curricular requirements. Currently, the Philippines's public health and medical curricula do not include transgender health, either in or out of the context of HIV prevention and treatment.^{7,174} Moreover, although trans women are identified as a key population in the Philippines' national HIV strategy plan,⁷ the plan does not explicitly set targets and policies to address trans women's health needs distinctively from other key populations living with HIV, and does not describe the role of healthcare providers in delivering services to this important population. As such, our study underscores the need to improve HIV treatment delivery among trans women at the levels of public health policy and medical infrastructure in the Philippines. Our findings also support a need to prioritize trans women's care explicitly in the national HIV strategic policy plan by setting specific goals for this community separately from other groups.^{7,16} Because

knowledge, attitudes, and infrastructural concerns appear to impact provider and trans women communications, future research should explore interventions targeting these aspects, both at the infrastructural- and provider-levels, as a means to inform future gender-affirmative approaches within the context of HIV care in the Philippines.

When communicating with trans women, providers have the opportunity to create an environment that is affirming to trans women's health needs,¹⁷² including in the context of HIV-related and FHT services.^{29,48} Based on our findings, we characterized a gender-affirmative HIV care when providers utilize a rhetoric style that aligns with and supports the goals of taking FHT for trans women living with HIV. This rhetoric style affirms trans women's goals such that it responds to and recognizes the importance of FHT's functionality in supporting mental health benefits and self-confidence avoiding stigma, discrimination, and violence, as well as in affirming trans women's gender identity and womanhood. It has been documented that allowing trans women to access gender-affirming services like FHT has multiple benefits including lower risk for unprotected sex with serodiscordant and unknown status partners, and lower street injection drug use and heavy substance use.⁴⁸ Provision of gender-affirmative care also improves mental health outcomes (e.g., lower depressive symptoms) among trans women,¹⁷⁵ an outcome that is also known to optimize ART adherence in HIV treatment settings.¹⁷⁶ As such, future research for this population should examine how to optimally integrate FHT and other gender-affirming services (e.g., sex reassignment

surgery), develop evidence-based health policies that support these services, as well as understand the multiple health benefits (i.e., mental health, violence prevention, HIV risk transmission reduction etc.) that this integration provides to trans women who are living with HIV in the Philippines.

Trans women in this study who experienced gender-affirmative HIV care reported taking medically monitored FHT and ART concurrently. This rhetoric style enabled providers to develop an affirming interaction with trans women, such that it allowed them to monitor both FHT and ART medications and their impact on trans women's bodies, including proper and consistent laboratory services to check and ensure safety. This finding support recommendations that continued monitoring of FHT's and ART's impacts on the body is a best-practice for trans women living with HIV who desire to continue taking both medicines.^{45,49,161,163} Because monitoring requires multiple visits, providers expressing affirmative rhetoric could likely help retain trans women in care with their HIV provider.^{45,177} This approach is also consistent with principles of patient-centered practices (i.e., respecting patients' preferences and responding appropriately to patient's needs) in clinical settings.^{161,178} Given the retention challenges in the HIV care and treatment continuum,^{160,179,180} future research should examine ways to optimize the marketing and utilization of gender-affirmative HIV care approach to increase adherence and retention of trans women in the HIV care and treatment continuum.

Our study also reveals that trans women who experience a non-affirmative HIV care communication approach (e.g., being told to stop taking FHT) by their HIV providers reported facing difficult decisions to either not tell their provider about continuing to take FHT or follow their provider's advice to stop taking FHT. Based on our findings, we characterized gender non-affirmative HIV care when providers use rhetoric that misaligns with trans women's FHT goals, such that HIV treatment is more critical to living health and staying alive than FHT. Providers who used this rhetoric also cited that FHT is for cosmetic use, which has been documented before among providers who are unfamiliar with FHT and trans women's health needs.^{170-173,181} This finding may have a historical precedent, such that FHT and other gender-affirming services like sex reassignment and facial feminization surgeries were once viewed as cosmetic commodities by insurance companies,¹⁸² and the scientific community.¹⁸³⁻¹⁸⁵ As such, HIV providers in this study may have echoed this sentiment in their views.

FHT-ART outcomes arising from gender non-affirmative HIV care have various clinical implications. For instance, not fully disclosing FHT medication history to providers is a primary concern insofar as providers are not able to monitor how trans women's bodies respond to both medications.¹⁶³ As such, withholding important information about FHT erases FHT from the purview of their providers, which could also inadvertently put trans women at risk of compromising their health.^{181,186} Similarly, the perception that HIV providers who use non-affirmative rhetoric style compels a choice between life versus death (i.e., taking

ART only to live, and dying as a result of taking both medications) places trans women in risky situations where they are no longer receiving FHT-related health benefits and could cause poor mental health and exposure to physical violence.^{175,187-189} Interventions to improve mental health of trans women who are living with HIV and who face rejection or feel unsupported by their HIV providers are therefore highly needed. As an interim measure before implementing a large overhaul to train HIV providers in this area in the Philippines, HIV counselors or mental health providers in these health facilities should at least be made aware of these implications. Providers should be prepared to discuss how to facilitate proper patient communication and provide help to trans women who may comply with medical advice to cease FHT. These clinical outcomes resulting from non-affirmative care present real consequences for trans women, which must be addressed by HIV providers and mental health counselors in the Philippines.

Lastly, given that all trans women in our study reported currently taking ART meds, one FHT-ART outcome not observed but possible is prioritization of FHT over ART. The literature on FHT prioritization has previously been described before in other settings, noting that trans women are engaging in behaviors that affirm their trans identity at the expense of other health concerns like HIV (e.g., prioritizing taking FHT over ART).^{30,31,48,49} This pattern of prioritization is likely because of the multiple benefits of FHT in improving quality of life,¹⁹⁰ and mental health.^{191,192} This prioritization could include decisions such as partially taking ART (i.e., low ART adherence), completely discontinuing ART (i.e., no ART adherence), or not visiting

an HIV provider (i.e., complete disengagement of HIV care). As such, trans women who decide to prioritize FHT over ART present critical clinical scenarios for the HIV treatment continuum that further add to the challenges in curbing the HIV epidemic and highlight the importance of integrating a gender-affirmative HIV care approach as part of the HIV response in the Philippines. Another possible scenario that is not depicted in this study's qualitative data, but warrants future investigation, is exploring FHT-ART outcomes when both affirming and non-affirming rhetoric styles occur with a provider. For example, trans women might receive inconsistent styles of health communication and affirmative/non-affirmative messaging from providers across multiple visits, which might lead to further confusion, disengagement, and compromises to health.

4.5.1 Limitations

This research has several limitations. First, these results do not describe the full range of outcomes concerning FHT and ART. Because none of our participants had chosen to drop out of HIV care as a result of their discussions about FHT and ART, we were unable to examine factors across narratives that may drive trans women living with HIV completely away from care. Second, we did not collect data on contextual factors about participants' ART history (e.g., how long they have been living with HIV, when ART was started) and transition history (e.g., when they first began identifying as trans), which could have provided useful information in designing future interventions and determining the extent the results of this sample is extendable to the overall group of trans women in the Philippines. Third, the

narratives collected via recruitment strategies may not represent all experiences of trans women living with HIV in the Philippines; other relevant venues where trans women can be found (e.g., online, support groups) were not recruitment sites in this study. Also, because these interviews were performed in English by US-based interviewers, legacies of colonialism may have created a dynamic producing social desirability bias in responding to questions.^{73,193,194} Lastly, these interviews were done with trans women and providers in Metro Manila, where HIV services, knowledge about trans women, and awareness about HIV may be higher than in other cities and provinces in the Philippines.¹⁵⁸ As a result, these findings may not generalize to the experiences of trans women with HIV and their providers living outside the Metro Manila area.

4.6 Conclusion

Taken together, this study provides a preliminary overview of a gender-affirmative HIV care framework based on the perspectives and experiences of Filipina trans women living with HIV and their HIV providers. To our knowledge, this is the first empirical study that describes such a framework for how various clinical outcomes regarding FHT and ART might arise from the affirmative vs. non-affirmative rhetoric use by HIV providers and its alignment or misalignment to trans women's gender affirmation goals. Further research is needed to provide quantitative validation and elaborate on this preliminary framework, including: (a) exploring HIV provider-focused interventions to improve knowledge, attitudes, and motivation to interact with and attend to the health needs of trans women who are

living with HIV, (b) examining ways for implementing gender-affirmative HIV care as a package that can be utilized to improve uptake, retention, and adherence to HIV care and treatment among trans women; and (c) understanding how to integrate FHT-ART co-prescribing practices to HIV care providers in the context of gender-affirmative services and the current infrastructure for HIV services in the Philippines. Along with research implications, these results suggest that there is a need for multi-level interventions that incorporate content relevant to addressing the inadequate gender-affirmative HIV care services for trans women in the Philippines. Such multifaceted interventions may include: 1) having policymakers and government agencies support policies around anti-discrimination specific to trans women in various settings, including healthcare facilities; 2) setting national targets for reducing gender-based violence and increasing gender-affirmative services like FHT specific to trans women as part of the Philippine's national HIV strategic plan; 3) including gender-affirmative HIV care in the medical and public health curricula and training programs for current and future health care providers; and 4) improving national HIV surveillance systems to accurately and reliably capture trans women's HIV continuum of care as well as their gender affirmative services uptake. Along with the findings of this study, these research implications and recommendations support the call to integrate trans health across social and infrastructural public health and health policy solutions to address the HIV crisis in the Philippines.

Table 8: Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No. Item	Guide questions/description	Reported on Section
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Inter viewer/facilitator	Which author/s conducted the interview or focus group?	4.3.1 Research Team
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	4.3.1 Research Team
3. Occupation	What was their occupation at the time of the study?	4.3.1 Research Team
4. Gender	Was the researcher male or female?	4.3.1 Research Team
5. Experience and training	What experience or training did the researcher have?	4.3.1 Research Team
<i>Relationship with participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	4.3.1 Research Team
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	4.3.1 Research Team
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	4.3.1 Research Team
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	4.3.5 Analysis Strategy
<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	4.3.2 Study Design
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	4.3.2 Study Design
12. Sample size	How many participants were in the study?	4.3.3 Participants and Key Informants
13. Non-participation	How many people refused to participate or dropped out? Reasons?	N/A

<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	4.3.4 Procedures
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	4.3.4 Procedures
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	4.4.1 <i>Sample characteristics</i>
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	4.3.4 Procedures
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	N/A
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	4.3.4 Procedures
20. Field notes	Were field notes made during and/or after the inter view or focus group?	N/A
21. Duration	What was the duration of the inter views or focus group?	4.3.4 Procedures
22. Data saturation	Was data saturation discussed?	4.3.4 Procedures
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	N/A
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	4.3.5 Analysis Strategy
25. Description of the coding tree	Did authors provide a description of the coding tree?	4.3.5 Analysis Strategy
26. Derivation of themes	Were themes identified in advance or derived from the data?	4.3.5 Analysis Strategy
27. Software	What software, if applicable, was used to manage the data?	4.3.5 Analysis Strategy
28. Participant checking	Did participants provide feedback on the findings?	N/A
<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	4.4 Results
30. Data and findings consistent	Was there consistency between the data presented and the findings?	4.4 Results
31. Clarity of major themes	Were major themes clearly presented in the findings?	4.4 Results

32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	4.4 Results
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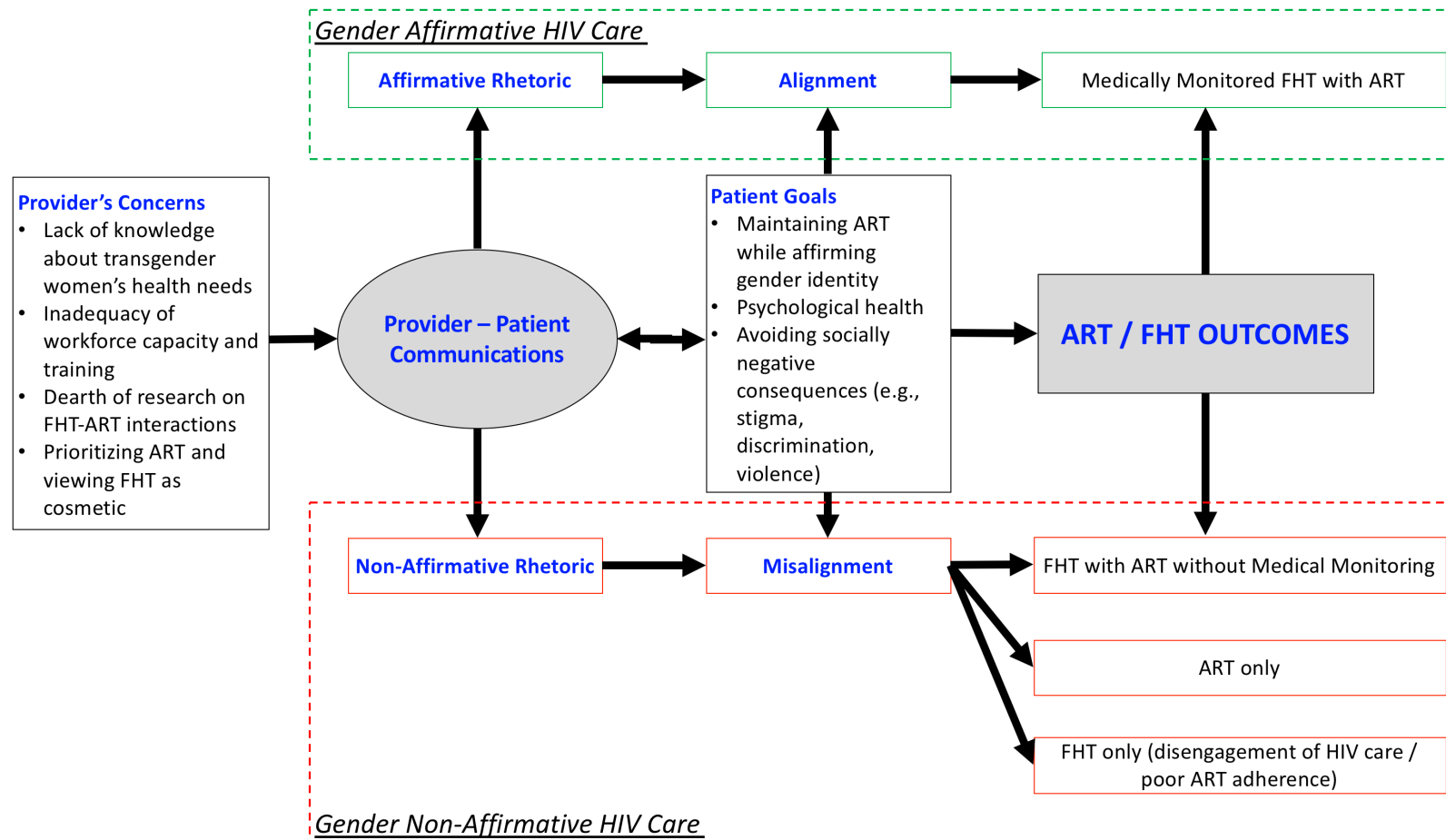
Table 9. Demographic characteristics of transgender women (n=9) by age, education, and HIV status, and healthcare providers (n=15) by role/title, and type of facility.

Trans women's characteristic (n=10)	Count
Age	
Mean (SD, range)	25.0 (3.1, 18-29)
Education	
High school or less	4
College or more	5
Self-reported HIV status	
Positive	9
Negative	0
Provider's characteristics (n=15)	
Type of facility providers work in	
Public Hospital	2
Social Hygiene Clinic	3
Non-profit HIV Organization	8
State-sponsored HIV Organization	2

Table 10: FHT-ART outcomes of provider-patient communications reported by transgender women participants.

Participant ID	Talked with provider about FHT with ART	Experienced non-affirmative rhetoric with provider	Outcome 1: Medically monitored FHT with ART	Outcome 2: FHT with ART without medical monitoring	Outcome 3: ART only (conformation)
1	Yes	Yes	-	Yes	-
2	Yes	Yes	-	-	Yes
3	Yes	No	Yes	-	-
4	Yes	No	Yes	-	-
5	Yes	No	-	Yes	-
6	Did not state	Did not state	Yes	-	-
7	Yes	Yes	-	-	Yes
8	Yes	Yes	-	-	Yes
9	Yes	Yes	Yes	-	-
Total (n=9)	Yes = 8	Yes = 5	Yes = 4	Yes = 2	Yes = 3

Figure 6: Conceptual Framework for Gender Affirmative vs. Non-Affirmative HIV Care



Conceptual Framework for Gender Affirmative vs. Non-Affirmative HIV Care

DISCUSSION, IMPLICATIONS, AND FUTURE DIRECTIONS

The objective of this dissertation was to characterize the socio-ecological (i.e., personal, social, community, and structural) factors impacting uptake of condoms and other HIV-related health services among two important and highly impacted communities. This objective was examined in the context of an emerging HIV epidemic situated in the Philippines. Throughout each chapter, several factors were identified as barriers and facilitators, including as mediators, that were linked to uptake of condoms and other HIV-related health services across multiple socio-ecological levels. This dissertation adds new knowledge to the scant HIV literature in this Philippines, and provides new applications, methodological approaches, and conceptual frameworks in the field of HIV.

Chapter 1 Discussion and Implication

In Chapter 1, the aim was to qualitatively identify perceived barriers and facilitators of condom use among Filipinx TW and cis-MSM communities. This investigation provided a conceptual basis for understanding the different levels and specific kinds of factors that are present within Filipinx TW and cis-MSM communities which contribute to condom use behaviors, based on their lived experiences. This goal was accomplished by conducting qualitative one-on-one interviews among community members, and thematically organizing the results via situational analysis. Chapter 1 findings support the need for multilevel condom

promotion interventions in the Philippines that are tailored per situation or context for TW and cis-MSM communities.

Chapter 1 extends knowledge in the field of HIV in both conceptual and pragmatic ways. Specifically, this study offers the Situated Socio-Ecological Condom Uptake Model (Figure 1), which is a new, integrated application of Bronfenbrenner's Socio-Ecological Model^{10,11} as well as Clarke and Friese's Situational Analysis²⁴ approach. Specifically, it provides a new way of conceptualizing socio-ecological factors by having them organized situationally or by context. Specifically, instead of broadly organizing factors per level as Bronfenbrenner suggested, this study asserts the importance of first identifying and examining factors that are present per situation and/or context and then proceeding to organize them per level.

Organizing factors situationally provides a way to recognize the unique factors that are present (and/or absent) across situations. For example, in Figure 1, the results show that structural barriers and facilitators of condom use varied across situations of: (a) friends (e.g., as condom promoters and educators), (b) schools (e.g., lack of sex education and HIV curriculum), (c) health care facilities (e.g., availability, educational programs, and HIV testing requirement), (d) stores (e.g., arrangement or placement of condoms, distance to store, and cost), and (e) church (e.g., prohibition of condom distribution programs, and unsupportiveness). Moreover, organizing factors situationally also showed factors that are shared across situations, and how they may operate differently within each. In this study, while condom-related stigma as a social factor was pervasively present across all

situations or contexts, stigma manifested differently through forms of shaming when buying condoms stores to prohibiting condom education in schools.

Future research directions and general implication in this area: The application of Chapter 1's situated socio-ecological model approach is innovative and will be beneficial to developing and tailoring future behavioral, social, and structural interventions. Specifically, its utilization will push researchers to critically recognize the different kinds of factors that are present in various situations that are relevant to performing or sustaining a recommended behavior, including how each factor manifests and changes within situations and across multiple levels. By adapting this integrated approach, researchers can tailor interventions according to the demands, resources, and norms of specific situations.

Chapter 2 Discussion and Implication

In Chapter 2, the aim was to analyze the relationship between social capital and condom use and, specifically, the mediational role of self-efficacy in this relationship (Figure 3). This goal was accomplished by conducting a web-based survey of 318 Filipinx TW and cis-MSM respondents and utilizing structural equational modeling to examine direct and indirect associations between these three factors, which provided empirical support for the conceptual linkages between condom use and self-efficacy as personal-level factors and social capital as a social-level factor. The main finding of this investigation revealed that condom efficacy fully mediated the relationship between social capital and condom use,

providing support for the promotion of social capital in increasing condom efficacy as HIV prevention intervention components among communities of TW and cis-MSM in the Philippines.

Chapter 2 provides new knowledge within the literature on social capital and condom use. Specifically, it combines disparate literatures that have only examined the direct effect of social capital on protective sexual behaviors^{36,39,69,112,113} and the direct effect of self-efficacy on increased self-reported condom use.¹¹⁴⁻¹¹⁷ Moreover, given that the link between social capital and condom efficacy has not been previously explored in the literature, nor it has been tested as a possible pathway to explain condom use, Chapter 2 offers a conceptual basis for linking social capital and condom efficacy. The mediational analysis in Chapter 2 fills in this gap in the literature and revealed that there is a significant association between social capital and condom efficacy. This finding, therefore, provides a newly uncovered pathway in increasing condom efficacy via social capital.

Chapter 2's analysis also showed that social capital is linked to gender and sexual identities, a finding that expands how social capital is understood. The literature in social capital explicating this link has mostly focused on sex-differences, showing that social capital is different for males and females, with male individuals accumulating more social capital across their lifetime.¹⁹⁵ Chapter 2 results showed a distinct pattern of effects, with TW displaying more social capital, specifically higher LGBT social participation, than cis-MSM. One possible explanation for this difference is related to how marginalized gender and sexual identities operate socially in the Philippines (and potentially in other settings). TW may be more

participatory in social activities viewed as feminine or revealing of sexual practices compared to cis-MSM, and some cis-MSM may be more inclined to conceal their sexuality or to remain embedded within heteronormative culture.^{69,110}

Future research directions and general implication in this area: Future research on this topic should further explore social capital by gender and sexual identities. In order for social capital to improve health outcomes, environmental resources as well as action (i.e., participation) from individuals are necessary. Thus, it is very likely that differences in social capital emerge for groups in which access to and opportunities for social participation are shaped by gendered norms. Examining social capital by gender and sexual identities allows researchers to examine this pattern more closely to inform and tailor current and future interventions. Doing so may yield knowledge regarding *which* groups to prioritize equitable resources to increase community cohesiveness and participation accordingly.

Chapter 3 Discussion and Implication

In Chapter 3, the aim was to examine and model the linkages of multiple personal, social, environmental, and structural factors that were hypothesized to impact condom use among Filipinx TW and cis-MSM. This investigation was informed by formative findings from Chapters 1 and 2. This aim was accomplished by analyzing and building a structural equation model that organizes factors situationally across multiple socio-ecological levels using a primary quantitative dataset with 318 Filipinx TW and cis-MSM. Chapter 3 findings showcased the various multi-level relationships and pathways across the socio-ecological model

that can potentially be leveraged and addressed for future HIV prevention interventions that aim to improve condom use among these populations. Additionally, in support of Chapter 2's findings, it highlighted the role of social capital and condom efficacy as key to increasing condom use while also buffering the negative effects of structural and environmental barriers on condom use. Chapter 3's findings therefore provided support for future multicomponent interventions in these populations, including promotion of social capital and targeting prominent structural and environmental barriers to condom use.

Chapter 3 is innovative and novel for its application of the socio-ecological model in the context of the Philippines' HIV epidemic and examining it via structural equation modeling to investigate relationships of various factors multiple levels. To date, one of the common criticisms of the socio-ecological model has been that the model is not prescriptive for behavioral change – that is, it does not provide guidance on how to change behavioral outcomes. This is likely due to how the conceptual model is posited broadly and is largely descriptive; it does not directly link different factors across levels and does not predict how they impact behavior. To date, many studies have utilized socio-ecological model as an organizing conceptual framework for describing their variables of interest, and then testing those variables via multilevel regression analysis. While such approach is informative in understanding which factors are associated with a specific behavioral outcome, it does not allow researchers the ability to specify the magnitude and significance of each individual pathway across socio-ecological levels. Chapter 3 offers one of the first known solutions to this limitation by utilizing structural

equational modeling as an analytical approach to test how structural and environmental barriers together impact condom use behavior, and how this relationship is buffered by social-level and personal-level factors such as social capital and condom efficacy.

Future research directions and general implication in this area: Given that Chapter's 3 approach is relatively new in the field of HIV and its application to the socio-ecological model is potentially beneficial to the field of behavioral sciences, future research in this area should address its analytical limitations noted in Chapter 3. For example, while data collected for this dissertation aim was cross-sectional and thereby undermines the ability to infer temporal directionality, structural equation modeling does allow for mediational path analysis and takes value of theoretical directionality.^{151,196} As such, future research should confirm or disconfirm the findings of this Chapter by using multiple sources of data that are not reliant on self-reported measures, particularly measures that assess personal, social, environmental and structural factors for which other kinds of databases could provide more objectiveness such as surveillance data, administrative data, or biomarkers. Longitudinal assessment that involves data collection at multiple time points could address concerns about temporal relationships in the current analysis. Furthermore, integrating socio-ecological model with another behavioral theory (i.e., theory of reasoned approach) where self-efficacy is a key construct, may likely provide ways to make the model more prescriptive. Doing so may yield knowledge regarding *which* indicators to target within an intervention and *how* to change them.

Chapter 4 Discussion and Implication

In Chapter 4, the aim was to qualitative examine the utility for integration of FHT and ART in providing gender-affirming HIV care for TW living with HIV in the Philippines. This goal was accomplished by investigating the social-level interactions between TW living with HIV and their HIV providers. Specifically, this chapter utilized a phenomenological approach to qualitative investigation using primary data from one-on-one semi structured interviews with 9 TW and 15 HIV providers from community-based venues in Manila, Philippines.

Main findings from Chapter 4 gave rise to a new conceptual model, “Gender Affirmation HIV Care,” displayed in Figure 6. This model describes how differences in FHT and ART-related decisions among trans women are influenced by HIV providers’ communication skills and ability to use either a gender-affirmative or non-affirmative rhetoric style, which aligns or misaligns with TW’s gender goals. Chapter 4 findings support the need to guide and train HIV providers to create an environment that is affirming to TW’s health needs, particularly when HIV providers socially interact with TW. It also underscores the need to improve HIV treatment delivery among TW at the structural levels of public health policy and medical infrastructure in the Philippines.

Chapter 4 expands the fields of HIV and transgender health and will be vital for integrating and delivering FHT and ART to TW and other trans populations in the future. While multiple previous gender-affirming care models have been

described before,^{48,49} none of these have been applied in the context of providing HIV care and treatment services. Chapter 4's Gender Affirmation HIV Care model, which relies on affirming health communication strategies, will be critical in delivering current and future HIV and FHT to TW given that there are ongoing biomedical trials that aim to understand how ART and other medications alike (e.g., PrEP) impact FHT and vice versa.¹⁹⁷⁻¹⁹⁹ It will also be applicable to biomedical prevention trials that use the same formulation as ART medications. These trials will rely on health communication strategies such as the Gender Affirmation HIV Care model to influence TW's decisions and guide HIV providers to a gender-affirmative communication style to support TW in initiating and adhering to ART and FHT.

Future research directions and general implication in this area: Given that Chapter 4's conceptual model will be new to the field of HIV and transgender health, it is critical for this model to be tested and further refined. Specifically, future research on this model should be supported further both by quantitative and qualitative study designs to confirm, disconfirm, expand or modify the model. Testing, refining, or modifying the model through further empirical work is critically important for interventions that aim to be tailored designed to a specific context. Future research should intentionally examine the situations, contexts, and settings where FHT is being integrated with ART and other medications alike when applying the model to an intervention with TW and other trans populations.

APPENDICES

Appendix 1. Abbreviations, Terminologies, and Meaning

Abbreviations	Meaning
TW	Transgender Women
Cis-MSM	Cisgender Men who have Sex with Men
PrEP	Pre-Exposure Prophylaxis
PEP	Post-Exposure Prophylaxis
ART	Anti-Retroviral Therapy
FHT	Feminizing Hormone Therapy
SEM	Socio-Ecological Model, also could be Structural Equation Modeling
NGOs	Non-governmental organizations
PAFPI	Positive Action Foundation Philippines Inc. (study partner)
ATPP	Association of Transgender People in the Philippines (study partner)
PinoyPlus	Pinoy Plus Advocacy Pilipinas Inc. (study partner)
Philippines DOH	Philippines Department of Health

Terms	
“Filipinx”	Gender and race neutral term to describe people living in the Philippines
“Multilevel”	Refers to the multiple levels (e.g., personal, social, organizational, structural) of socio-ecological model
“HIV-related health services”	Services that are related to HIV prevention (e.g., condoms, HIV testing, PrEP and PEP) and treatment (ART)

Appendix 2. Recruitment Sites; Top three most-affected cities by HIV epidemic in the Philippines



Note: Recruitment Sites were chosen based on epidemiological surveillance data from Philippines Department of Health²

Appendix 3. Interview guide for Chapter 1s and 4, from Project Lakambini

Participant ID: _____

**Socio-ecological Factors of HIV treatment and prevention services among
Sexually Active, Gay and Transgender Youths and Young Adults who have Sex
with Men (GTYSM) in Manila, Philippines
Qualitative Interview Guide (For Participants)**

We are doing this interview today so I can learn more about how you use and get HIV-related treatment and prevention services in your community. I will have some specific topics to discuss with you, but I would like the discussion to be informal so you can respond to any of the ideas or questions that arise.

Here are some tips and things you should know:

First, there are no wrong or right answers to these questions so you can be as candid and detailed as possible with your answers. Feel free to give examples to help illustrate points you are making.

Secondly, as I ask you to describe your opinions and experiences, please keep in mind that I'm simply interested in what you think about these different topics. So I am looking forward to learning more about these experiences from you.

Here are some things you should know:

This interview will be digitally recorded. Throughout the conversation there will be a lot of information that I will not be able to remember or write down, recording it allows us to get an accurate account of our conversation in your own words.

Our conversation will be transcribed – typed up word for word. Nothing that identifies you will be included in the typed version of our conversation. The interview will take about 1 – 1.5 hours to complete. Please use initials of the partner, nicknames when describing other people.

If you ever want to say something off the record, please let me know and I will stop the digital recorder. If you feel uncomfortable answering any question, just say 'pass' and I will move onto the next question. There will be time after the interview to ask any further questions you might have about this project.

Do you have any questions before we begin? (If no,) Okay, let's get started.

[TURN ON TAPE RECORDER]

This is [interviewer name] conducting [interview with participant ID #] on [date].

Domain 1: Background, Sexual and Gender Identity Development

Lets start with some questions about your background:

1. **How old are you now?** _____.
2. **How much schooling have you completed?**
 - a. High school and below / some college / college and beyond / Other
3. **What do you do for work?** _____.
4. **Are you currently in a relationship?** YES / NO
 - a. If yes, can you tell me about your current partner(s)?
 - i. How many? _____
 - ii. Gender: man /woman /trans /other _____
 - More masculine / more feminine /same
 - iii. Age: younger /older /same _____
 - iv. Casual/Main? _____
 - v. Sexual positions: top / bottom/ both/ other

Great, thank you for sharing these. Now I'd like to ask you about your sexual and gender Identity. Sexual Identity is whom you sleep or go to bed with, and Gender Identity is who you go to bed as.

5. How would you describe your gender identity? (man/ woman/ trans/ other)

Probes:

- a. How old were you when you started thinking that you are [_Gender Identity_]?
- b. What are some of the ways that you show or express your gender? (e.g., clothing, behaviors)
- c. What problems, if any, do you experience because of your gender identity?
- d. Can you tell me how ____ affect your gender identity?
 - family
 - school
 - church
 - doctors/medical providers
 - anyone else?

6. How would you describe your sexual identity?

Probes:

- a. How old were you when you started thinking that you are [_Sexual Identity_]?
- b. What are some of the ways that you show or express your sexual identity?
- c. What problems, if any, do you experience because of your sexual identity?
- d. Can you tell me how ____ affects your sexual identity?
 - family
 - school
 - church
 - doctors/medical providers
 - anyone else?

Domain 2: Sexual Behaviors

Lets talk about sexual behaviors and how these may affect your healthcare access with HIV.

1. You mentioned before from the screening form that you're sexually active, how long have you been sexually active?

Probes:

- a. How old were you when you first started having sex?
- b. How do you meet your sexual partners?
- c. What kinds of HIV prevention methods or safer sex practices do you use with your partners? (e.g., condom, oral sex, dams, etc.)
- d. What kinds of conversations do you have with your sexual partner when you meet?

2. Has HIV prevention (HIV testing, condom use, etc.) been ever discussed with your sexual partners?

Probes:

IF YES:

- a. Tell me more. What was discussed?
- b. How did you/your partner feel talking about it?

IF NO:

- a. Why not?
- b. What makes it difficult to talk about HIV prevention?

3. How easy/not easy is it to talk about your sexual behaviors to someone?

Probes:

- a. How about a doctor? A friend? A family member? A sexual partner?
- b. What makes is easy/hard to talk about sex or sexual behavior with them?

- c. Have you recommended a sexual partner to engage in HIV prevention?
 - Which one: HIV testing, condom use, or something else?
 - How did that go?
- d. Has a partner ever encouraged you to engage in HIV prevention? If so, which one? (e.g., testing, condom use).

4. Have you tried accessing healthcare services for HIV before or after you had sex?

Probes:

- a. Tell me more, why did you go to seek health services for HIV?
- b. What kinds of services did you get specifically?
- c. What happened when you went to ask for HIV services?
- d. Were there anything that made you less discouraged to seek services?
How about more encouraged?

Domain 3: HIV Testing and Condom Use

Thank you, lets switch to your experience with HIV testing and condoms.

HIV Testing:

1. Have you ever been tested for HIV?

Probes:

- a. Can you tell me more about your experience with testing?
- b. What do you think are some of the benefits with HIV testing?
- c. How did you feel when you got tested?

2. Why did you/did you not test for HIV?

Probes:

- a. What motivated you (or not) to get tested?
- b. How often do you go get tested?

3. Where do you go to get tested?

Probes:

- a. How do you feel about getting tested at those locations?
- b. Why do you test at those locations?
- c. Are there times when you have had trouble getting testing when you ask/need them? Please explain.

4. How do you pay for HIV testing?

Probes:

- a. Are there free testing ones?
 - Do you worry about payment?
- b. Are there other concerns about payment?

5. Has HIV testing affected your life?

Probes:

- a. How has HIV testing affected your sex life? your sexual behavior? your conversation with family, friends, or co-workers?
- b. Has HIV testing encouraged you to remain healthy?

Condoms:

1. Have you used condoms in the past? Tell me some of your experiences with condoms.

Probes:

- a. How do you feel about using condoms?
- b. How do your sexual partners feel about using condoms?

2. How did you learn about condoms?

Probes:

- a. Do you discuss condom with other people? With friends, parents, doctors/nurses, or teachers?

3. How easy/not easy is it to get condoms? Tell me how do you obtain condoms.

4. Where do you get condoms?

Probes:

- a. How do you feel about getting condoms at those locations?
- b. How often do you buy/get condoms?
- c. Are condoms always available to you when you need them? Are there free ones?
- d. Are there times when you have trouble getting condoms when you need them? Please explain.
- e. If purchased, is buying a condom a problem to you? If so, how?

5. What are your concerns about getting condoms?

Probes:

- a. What are your concerns about using them?
- b. Are there any issues when using them? If so, please explain.
- c. How do you overcome those issues?

Domain 4: Biomedical Prevention and Treatment: PrEP, PEP, and ART

PrEP:

1. Have you ever heard of PrEP, Pre-exposure prophylaxis, before?

Probes:

- a. Can you tell me what you know about PrEP? How would you use PrEP?
THEN IN ALL CASES, **READ DEFINITION:** With PrEP, you take HIV medication to prevent from getting infected with HIV. You would need to take this medication every day. If you don't take it every day, PrEP is not effective. PrEP does not protect you from other sexually transmitted infections like gonorrhea.

2. Have you ever taken PrEP?

Probes:

IF YES:

- What was your experience like?
- Were there any barriers?

IF NO:

- Now that you have heard about what PrEP is, would PrEP be something appropriate for you?

3. If you were to take PrEP daily, how would you feel about it?

Probes:

- a. What are some concerns you may have? (e.g., problems with stigma, adherence, payment, regular testing, regular doctor visit, finding a clinic?)
- b. What do you think would make PrEP difficult to take for you? Easier?
- c. Do you think it would be difficult to talk about PrEP with a Doctor, Friend or Family member? Why?

4. Do you think that PrEP would be appropriate for your sexual partner?

Probes:

- a. Why do you think that?
- b. Would you recommend or talk with your partner about PrEP?
 - How do you imagine that conversation would start/go?

PEP:

1. Now let's talk about PEP, or Post-exposure prophylaxis, have you ever heard of PEP before?

Probes:

- a. Can you tell me what you know about PEP? How would you use PEP?

THEN IN ALL CASES, **READ DEFINITION:** PEP is used when you are exposed to HIV, and must be taken as soon as possible before the 72-hour period. It is taken for 28 days straight to reduce the chance of having the HIV infection by stopping the virus from multiplying.

2. Have you ever taken PEP?

Probes:

IF YES:

- What was your experience like?
- Were there any barriers?

IF NO:

- Now that you have heard about what PEP is, would PEP be something appropriate for you?

3. If you were to take PEP daily, how would you feel about it?

Probes:

- a. What are some concerns you may have? (e.g., problems with stigma, adherence, payment, regular testing, regular doctor visit, finding a clinic?)

- b. What do you think would make PEP difficult to take for you? Easier?
- c. Do you think it would be difficult to talk about PEP with a Doctor, Friend or Family member? Why?

4. Do you think that PEP would be appropriate for your sexual partner?

Probes:

- a. Why do you think that?
- b. Would you recommend or talk with your partner about PEP?
- How do you imagine that conversation would start/go?

ART [For HIV-POSITIVE Participants Only]:

1. You mentioned that you are living with HIV, how did you react with you found out that you were positive?

Probes:

- a. What happened after you found out that you're positive?
- b. Have you told anyone about your HIV status?
 - If YES: how did they respond?
 - If NO: Why did you choose not to tell?
 -

2. How has living with HIV affected your life?

Probes:

- a. How has living with HIV affected your sex life?
 - Your dating life?
 - your sexual behavior
 - your work
 - your schooling
 - your family/friends

3. Are you currently seeing a nurse or a doctor because of your HIV infection?

Probes:

IF YES:

- a. Tell me more about your experience with your nurse/doctor for HIV treatment?
- b. What do you like/not like about your interaction/relationship with nurse/doctor'?
- c. How do you pay for your HIV treatment?
- d. Have you experienced any difficulties paying for medicine?

IF NO:

- a. Tell me more about why you're not seeing a nurse/doctor for HIV treatment?
- b. What are some of the issues/problems that are keeping you from seeing a doctor/nurse for HIV treatment?

4. Are you currently on medication for treating HIV?

Probes:

IF YES:

- a. How is our experience with your HIV meds?
- b. How do you take your HIV meds?
- c. What are some of the issues that you experience with your HIV meds?
 - Prompt: Are there times when it's more difficult to take the meds?
- d. What do you do to remind yourself to take your HIV meds?

IF NO:

- a. Tell me why you're not taking HIV meds?
- b. Were there issues/problems in getting HIV medications?
- c. How do you treat HIV?
- d. Prompt: What are other ways that you do to treat HIV?

5. Is there anything else you want to share about your HIV meds?

HORMONE THERAPY [For TRANSGENDER Participants Only]

Thank you very much for sharing your thoughts thus far. Now I'd like to ask about Hormone Therapy or medicines you take to help transition:

1. You mentioned earlier that you identify as transgender, are you taking any hormones to enhance your transition?

Probes:

IF YES:

- a. Can you tell me more about your experience with hormones?
- b. When did you start your hormones?
- c. What made you decide to start taking hormones?
- d. How often do you take your hormones?
- e. How important is hormones for you?

IF NO:

- a. What are some of the reasons that you're not taking any?
 - Do you have any concerns about hormones?
- b. How important or not important is taking hormones for you?
- c. Would hormones be something that you want to take in the future?
 - Tell me more about this.

[SKIP TO NEXT SECTION IF ANSWERED NO ABOVE]

2. Have you told anyone about taking hormones?

Probes:

- a. With who do you discuss hormones with?
- b. What kinds of conversations do you have with hormones?
- c.

3. How do you get your hormones?

- a. Tell me more about where you get your hormones.
- b. Have you experience problems with getting hormones?
- c. Can you tell me how you overcome those problems?
- d. How do you pay for your hormones?
- e.

4. Do you see a nurse/provider for your hormone therapy?

Probes:

IF YES:

- a. Can you tell me what topics do you discuss with your providers?
 - Are there topics you like/dislike?
- b. How often do you see your nurse/provider?
- c. Are there any issues or problems that prevent you from seeing your nurse/provider?

IF NO:

- a. What are reasons for not seeing a nurse/doctor?
- b. Are there other providers/doctors that you see for your hormone therapy?

5. How has hormone therapy impacted your life?

Probes:

- a. Has hormone therapy impacted your sex life?
 - your dating life
 - your sexual behavior
 - your work
 - your schooling
 - your family/friends

Domain 6: Healthcare clinics and hospitals

1. What kinds of medical places do you go to for HIV services? (e.g., hospital, clinics, etc.)

Probes:

- a. How did you hear about this place?
- b. How did you decide to go to this place instead of others?

2. Thinking about the medical place that you go to for HIV, what kinds of services do you receive?

Probes:

- a. Tell me more about your experience with this place.
- b. What do you like/dislike about this place?
- c. How welcoming are they to you?
- d. Are there other medical services that you wish they provide?
- e. What about things that they should improve on?
- f. What are the topics that you discuss at this place?
- g. With whom do you discuss these topics with?

3. How easy/not easy is it to go to the medical place for HIV?

Probes:

- a. How long does it take you to get there?

- b. What kinds of transportation do you use?
 - c. Has transportation been an issue? If so, how?
- 4. How do you pay for your medical bills for HIV?**
Probes:
- a. Are there any road blocks or difficulties maintaining payment with these services?
- 5. How would you describe your relationship with your nurse/doctor?**
Probes:
- a. What are the ways that they meet your needs?
 - b. What are the ways that they do not meet your needs?
 - c. Can you describe how this relationship can be improved?
- 6. Are there policies in these places that you are aware of about anti-discrimination?**
IF YES:
- a. Tell me more about it.
 - b. How did these policies make you feel?
 - c. How easy was it to see/know about the policy(ies)?
 - d. Were there other things that concerned you?
- IF NO:
- a. Do you think that not having an anti-discrimination policy is a problem to you?
 - b. Are there concerns you may have going to a medical place that does not have any anti-discriminatory policies?
 - c. How would it make you feel if medical places have anti-discrimination policies?
- 7. In your view, are the medical places you go to supportive of gay/transgender patients?**
Probes:
- a. Tell me more about how they are/are not supportive.
 - b. How does that impact your medical visit?
- 8. Thank you, is there anything else we should cover about places where you get your HIV services from?**

Domain 6: Gay and Transgender Community

Let's talk about what you think about communities with gay and transgender members.

1. What kind of topics do you discuss with your friends who are gay/transgender?

Probes:

- a. What kinds of discussions do you have with your community about HIV?
 - About HIV Testing
 - About condom use
 - About PrEP?
 - About PEP?
 - About Antiretroviral Therapy?
 - About Hormone Therapy?

2. Is there solidarity/comradery among gay/transgender communities? Tell me more about this.

Probes:

- a. What are some of the ways that the community show that they are united?
- b. Are there formal/informal community meetings that you participate in?
- c. Are there other ways that you tell each other that you are united? (e.g., clothing, activities, etc.)

3. In your view, how is the community responding to the HIV epidemic?

Probes:

- a. How is the community reacting to the HIV services that are available to them?
- b. Are there needs or problems that you think are important to solve?

4. Do the transgender/gay community experience discrimination because of their sexual identity / gender identity?

Probes:

- a. How does the community respond to discrimination?
- b. Have you experienced any discrimination simply because of your sexual / gender identity?
- c. What have you done in response to the discrimination?

5. Are there violence in the community? What kind of violence, if any?

Probes:

- a. How does the community respond to violence?
- b. Does violence affect you in getting your care and services for HIV?

6. How do you think culture affects the community?

Probes:

- a. How would you describe other people's attitudes towards gay/transgender community?
- b. Are other people supportive of gay/transgender community?
- c. Does culture affect you in getting your care and services for HIV?

7. Are there policies or laws that you know of that are related to the gay and transgender community? Tell me more about that.

Probes:

- a. What are some of the benefits that these policies give in general?
- b. What are some of the benefits that these policies give for healthcare among the gay/transgender community?
- c. Any negative things or issues that have come up because of these laws?
- d. Do these policies affect you in getting your care and services for HIV?

Domain 7: Other Environmental Support: School, Church, and (biological) Family

Thinking about environments, I'd like to talk about places or circles where you might spend most of your time such as school, church or at home.

1. Are there any clinics in your school?

Probes:

- a. What are the kinds of healthcare services offered in your school?
- b. What are the ways in which the school encourages students like you to get HIV services?
- c. Have you used any of them? Why/ Why not?
- d. Are there things that prevent you from using/not using these services?

2. How comfortable are you with accessing HIV services in school?

Probes:

- a. Would you think that schools are a good venue to do HIV prevention? Why / Why not?
- b. Who in school would be best to deliver these services?

IF NO:

- a. Why do you think there are no clinics at your school?
- b. Would you think that schools are a good venue to do HIV prevention? Why / Why not?

3. What are other ways HIV prevention or HIV services discussed in school?

Probes:

- a. What are some issues about HIV that you learn from school?
- b. Do you think that learning HIV prevention and resources for services in school would be helpful?

4. Are there churches that you know of that promote HIV prevention?

Probes:

IF YES:

- a. What kinds of healthcare HIV services do they offer?

- b. How are these services being promoted?
- c. How have people reacted to the HIV services in church?
- d. Were there issues about this?

IF NO:

- a. Are churches are good way to promote HIV prevention? Why/why not?
- b. Would you participate or use the services if a church would start an HIV prevention program?

5. In what ways, would you say, religion affect HIV prevention services in Manila?

Probes:

- a. Are there barriers to using HIV services because of religion?
- b. How is HIV prevention seen or being talked about (if any) with people who you know are religious?
- c. How do you see HIV prevention as an issue or not with your religious beliefs?

6. Is HIV or HIV prevention ever discussed at home with family members? Why/Why not?

Probes:

IF SO:

- a. How is HIV prevention being discussed?
- b. Do any family members encourage you to use HIV prevention like condoms or HIV testing?
- c. How often do these conversations happen with your family?

IF NOT:

- a. Why do you think it's not being discussed?
- b. Would you think that discussing HIV with your family would help you in any way to use HIV prevention? Why/Why not?
- c. Do you think family members have a role in taking about HIV and HIV prevention?

Domain 9: Intervention Ideas for GTYSM

1. What are the most important topics to cover in an HIV-related access program for GTYSM in Manila?

Probes:

- a. Problem solving skills in accessing care
- b. Information on where to get HIV services
- c. Discussing health problems with doctors and other providers
- d. Strategies to maintain access to HIV services

2. Who do you think are the best people to educate young gay and transgender people like yourself about HIV? Why?

Probes:

- a. Would you want people like you (young gay/transgender) to be leaders for educating peers?
- b. Others: Outreach worker, Nurse, doctor, other peers (non-gay/transgender)

3. What would this program be like?

Probes:

- a. How much time would you want to spend participating?
- b. How many sessions do you think there should be?
- c. Would you prefer an individual format where you would do the program with the counselor on your own or group format where you would do the program with a group of other GTYSM?
- d. If in groups, should groups contain tops, bottoms, and verse together or should there be separate groups for each?
- e. If in groups, should groups contain gay and transgender youths should there be separate groups for each?

4. What kinds of messages would you send out to your peers?

5. What do you think can be done to address HIV?

Probes:

- c. What activities do you think are needed to address HIV in the community?
- d. What would make it difficult to have activities or program that address HIV among the community?
- e. What kinds of messages would you want to have/learn in an HIV prevention program?

6. What are other ways that access to HIV services can be improved?

7. What are your thoughts about providing HIV testing in schools?

Probes:

- a. In an after-school program?
- b. In a mobile van?
- c. where else can you think of where HIV testing is appropriate for the community?

8. What are the best ways to reach gay/transgender youths about HIV prevention?

Probes:

- a. How would you engage them about PrEP?
 - About PEP?
 - About HIV Testing?
 - About Condom Use?

9. If you want gay and transgender youths to participate in an HIV prevention program or intervention, how would you invite them?

Probes:

- a. Incentivize
- b. Inviting through texts, online/social media groups

Final thoughts

Is there anything else you would like to share with us today?

Thank you – this concludes the interview. We appreciate your taking the time to provide us with this valuable information. Please don't hesitate to contact us if you have further questions.

[TURN OFF TAPE RECORDER]

Audit Trail

FOR INTERVIEWER, please write down your notes about the interview. Please write any observations you may have and describe how the interview went.

Appendix 4. Study Survey Measures for Chapters 2 and 3, from Project #ParaSaAtin

Section	Measure	Specific to:
1.	Background	• Age, gender, sex, site, education, employment, income, religion, homelessness, sex work
2.	HIV IMB and Psychosocial Characteristics	• IMB • Self-efficacy (general) • Self-efficacy (condom negotiation) • Gender Expression and perception of gender-nonconformity • Transgender affirmation history
3.	Healthcare Seeking History	• HIV information sources • HIV services sources • Reasons for seeking HIV services • Health insurance • Met health needs • Avoidance/barriers to healthcare • HIV and STI status • Mental Health Seeking

4.	Condoms	• Condom History • Attitudes and perceptions about safer sex (community-level)
5.	PrEP/PEP History	• Knowledge, willingness, acceptability • Interest (social level)
6.	Social Networks and Communities	• Social Cohesion • Social Participation • Collective action
7.	Environmental Factors	• Access to healthcare facility • Condom availability and accessibility
8.	Structural Factors	• Stigma, Discrimination, and Equity towards PLHIV • Condom social norms • Gender inequity norms

WELCOME MESSAGE:

Thank you for your interest in taking this survey. You will be asked about your perspective and experience in getting and using HIV-related treatment and prevention services in your community.

Here are some tips and things you should know:

First, there are no wrong or right answers to these questions, we are only interested in your personal views experiences.

Second, this survey will take about 20-25 minutes to complete.

As a reminder, once survey is completed, the project staff will review it for completion within 3-5 business days, and a mobile prepaid card (from either Smart or Globe mobile) worth P250 will be sent to the email you provided.

Lastly, all of your answers will be kept confidential.

SECTION 1: Background – THIS SECTION WILL ALSO SERVE AS A SCREENER FORM.

1. AGE. How old are you now? [select age]

In the next section, we are asking for your gender first, then your sexual identity.

2. GENDER1. How do you currently self-identify your gender?

1. Transgender woman
 2. Transgender man
 3. Non-binary
 4. Man
 5. Woman
 6. Please specify if not listed: _____
3. GENDER2. Are there other ways that you describe your gender?
0. No
 1. Yes
 - a. If yes, please tell us how you describe your gender: _____
4. SEX. What was the sex assigned at your birth certificate?
1. Female
 2. Male
5. SEXID. How do you describe your current sexual identity?
1. Gay
 2. Lesbian
 3. Bisexual
 4. Straight/Heterosexual
 5. Please specify if not listed: _____
6. SITE. What city do you currently live? [Select City]
7. EDUCATION1. What is your highest level of attained education?
1. Elementary
 2. High School
 3. College
 4. Vocational Certificate
 5. Masters or other graduate level degree
8. EDUCATION2. Have you ever dropped out of school before?
1. No
 2. Yes
 - a. If Yes, what grade? _____
 - b. Why did you drop out of school? _____
9. EMPLOYMENT. Are you currently employed?
1. No, unemployed
 2. Yes, part-time
 3. Yes, full-time
 - a. If Yes, what is your primary occupation? _____.
10. INCOME. In the last 12 months, what was your income from all sources (before taxes)?

1. Less than ₱10,000
2. ₱10,000 – ₱20,000
3. ₱20,000 – ₱30,000
4. ₱30,000 – ₱40,000
5. ₱40,000 – ₱50,000
6. ₱50,000 – ₱60,000
7. ₱60,000 – ₱70,000
8. ₱70,000 – ₱80,000
9. ₱80,000 or more
10. Don't know

11. RELIGION1. If any, what religion are you affiliated with?

1. Catholic
2. Islam
3. Protestant
4. Christian
5. Non-religious
6. Specify if not listed: _____

12. RELIGION2. Which of the following best describes your beliefs about God or a Divine at the present time:

1. I do not believe in God or something divine
2. I believe we can't really know about God or something divine
3. I don't know what to believe about God or something divine
4. I believe in God or something divine, but I'm not religious
5. I believe in God or something divine, and practice my religion occasionally
6. I believe in God or something divine, and practice my religion most of the times
7. I believe in God or something divine, and practice my religion all of the times

13. HOMELESS. Have you ever been homeless?

1. No
2. Yes
 - a. If Yes, were you homeless at any time in the last 4 months?

People define sex work in many ways. For the following questions when we say sex work, we mean trading sexual activity or favors for food, money, a place to sleep, drugs or other goods.

14. SEXWORK. Have you ever done sex work?

1. No
2. Yes
 - a. If Yes, were you doing sex work at any time in the last 4 months?
 - b. What was your primary reason for doing sex work?
 - i. To earn money to money to survive

- ii. To earn money for gender affirmation services (e.g., surgery, hormones)
- iii. Could not get another job
- iv. For food, shelter, or drugs.
- v. I enjoyed doing sex work
- vi. Other reason, please specify: _____

15. PHONE. What is your mobile phone provider?

- 1. Globe
- 2. Smart

16. EMAIL. Before we continue, please enter your email address: _____

ELIGIBILITY SCREENING PAGE (only prompted if not eligible, otherwise, those who are eligible will automatically continue to section 2):

If not eligible:

After reviewing your responses, we're sorry to inform that you do not meet the qualifications for this survey. We sincerely thank you and are grateful for your time, dedication, and participation.

If there are any questions regarding your participation, you may contact our study team with a detailed message regarding your concern at:
healthaccess2018@gmail.com

SECTION 2: HIV IMB and Psychosocial Characteristics

IMB- HIV Knowledge and Information

Adapted (not yet tested) for gay and transgender population: Carey MP, Schroder KE. Development and psychometric evaluation of the brief HIV Knowledge Questionnaire. *AIDS Educ Prev.* 2002;14:172–82. We removed the items, “All pregnant women infected with HIV will have babies born with AIDS,” “A woman cannot get HIV if she has sex during her period,” “There is a female condom that can help decrease a woman’s chance of getting HIV.” We revised several items and added items 9-13 for current relevance to the population.

For each statement please indicate whether it is true (1) or false (0). If you do not know please do not guess; instead please indicate “Don’t know” (99).

- 1. Coughing and sneezing DO NOT spread HIV.
- 2. A person can get HIV by sharing a glass of water with someone who has HIV.

3. Pulling out the penis before climax/cumming keeps a person from getting HIV during sex.
4. A person can get HIV from having anal sex.
5. Showering, or washing one's genitals/private parts after sex keeps a person from getting HIV.
6. People who have been infected with HIV quickly show serious signs of being infected.
7. There is a vaccine that can stop adults from getting HIV.
8. People are likely to get HIV by deep kissing, putting their tongue in a partner's mouth, if their partner has HIV and cuts in their mouth.
9. It is possible to get HIV when a person gets a tattoo if the equipment is not properly cleaned.
10. Using a latex condom or rubber can lower a person's chance of getting HIV.
11. Reality condoms can be used by the receptive partner, either in the vagina or rectum, to reduce the chance of getting HIV.
12. The four fluids that transmit HIV are: tears, blood, semen and vaginal fluids.
13. A person cannot get HIV from sharing needles with someone.
14. A natural skin condom works better against HIV than does a latex condom.
15. A person will NOT get HIV if she or he is taking antibiotics.
16. Having sex with more than one partner can increase a person's chance of being infected with HIV.
17. Taking a test for HIV one week after having sex will tell a person if she or he has HIV.
18. A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.
19. A person can get HIV from oral sex.
20. Using Vaseline or baby oil with condoms lowers the chance of getting HIV.

IMB-Motivation

Adapted from: Misovich, Fisher and Fisher in the Handbook of Sexuality-Related Measures.

For key prevention behaviors (not having sex at all, talking with partner about safe sex, always using condoms during intercourse) there are three items. Each set of items measures attitudes, subjective norms or perceptions of whether significant others want them to perform the prevention behavior, behavioral intention to perform the prevention behavior.

Instructions to Participant: Each question below is asked in the context of what you would think or do in the next month. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions.

Many of the questions in this section ask you to describe your feelings about a specific behavior that involves a sexual partner. If you don't have a sex partner, please answer those questions as if you had a sex partner. (Scale 0-5, Very__ to Very __)

1. My talking about safer sex with my sex partner(s) before having sex with them during the next month would be: Very good - Very bad
2. Most people who are important to me think I should talk about safer sex with my sex partner(s) before have sex with them during the next month. Very true - Very untrue
3. If I have sex during the next month, I intend to talk about safer sex with my sex partner(s) before having sex with them. Very likely - Very unlikely
4. Trying to persuade my sex partner(s) to practice only safer sex (for example, to use condoms) during the next month would be: Very good - Very bad
5. Most people who are important to me think I should try to persuade my sex partner(s) to practice only safer sex during the next month. Very true - Very untrue
6. If I have sex during the next month, I intend to try to persuade my sex partner(s) to practice only safer sex. Very likely - Very unlikely
7. My buying or getting condoms during the next month would be: Very good - Very bad
8. Most people who are important to me think that I should buy or get condoms during the next month. Very true - Very untrue
9. I intend to buy or get condoms in the next month. Very likely - Very unlikely
10. Always having condoms handy during the next month would be: Very good - Very bad
11. Most people who are important to me think I should always have condoms handy during the next month. Very true -Very untrue
12. I intend to always have condoms handy during the next month. Very likely - Very unlikely
13. In the next month, my sex partner(s) and I always using condoms during sexual intercourse would be: Very good - Very bad
14. Most people who are important to me think my sex partner(s) and I should always use condoms during sexual intercourse in the next month. Very true - Very untrue
15. If I have sex during the next month, I intend to have my partner(s) and I always use condoms. Very likely -Very unlikely
16. Asking my sex partner(s) to get a test during the next month to check whether they have HIV would be: Very good - Very bad
17. Most people who are important to me think I should ask my sex partner(s) to get a test during the next month to check whether they have HIV. Very true - Very untrue
18. I intend to ask my sex partner(s) to get an HIV test during the next month to check whether they have HIV. Very likely - Very unlikely

19. My not having sex at all during the next month would be: Very good - Very bad
20. Most people who are important to me think I should not have sex at all during the next month: Very true - Very untrue
21. I intend not to have sexual intercourse at all during the next month. Very likely - Very unlikely

IMB-Behavior

Adapted from: Adapted from: Misovich, Fisher and Fisher in the Handbook of Sexuality-Related Measures.

Instructions to Participant: For the following questions, please select the answer you feel best applies to you. We realize that some of these questions may seem a bit repetitive or awkward, but for scientific reasons, the questions have to be phrased in a particular way. Each of the questions is different, and each is important to the outcome of this research study. Please answer as best you can.

Please indicate how hard or easy it would be for you to do each of the following things. (Scale 1-5, 1=very hard, 2=somewhat hard, 3=equally hard and easy, 4=somewhat easy, 5=very easy)

1. How hard would it be for you to buy or get condoms?
2. How hard would it be for you to be supportive if your sex partner(s) brought up the topic of using condoms to reduce the risk of getting HIV?
3. How hard would it be for you to make safer sex with a condom sexually exciting for your partner?
4. How hard would it be for you to discuss safer sex (for example, always using condoms) with your sex partner in a nonsexual setting, such as while riding in your car?
5. How hard would it be for you to consistently use condoms with a partner every time you have a one-night stand?
6. How hard would it be for you to use a condom with your partner while under the influence of alcohol or drugs?
7. How hard would it be for you to avoid using alcohol or drugs if you think you might be having sex later?
8. If you were able to persuade your partner to begin using condoms with you, how hard would it be for you to continue using condoms every time you have sexual intercourse until both of you get an HIV test?

For the next item, we want you to answer as if you were currently in a long-term relationship, in which you have been having sex with a condom.

9. How hard would it be for you to continue using condoms with your partner every time you have sex until both of you get an HIV test?

Imagine that you are in your bedroom with an attractive person whom you just recently met and you like very much. It is clear from the way they are acting that they want to have sex with you. You also are feeling it, and want to have sex with

them. However, when you have sex you want to use a condom to reduce your risk of becoming infected with HIV.

10. If no condom is available, instead of having intercourse, how hard would it be for you to engage in another pleasurable activity (such as mutual masturbation) where a condom isn't needed?
11. If no condom is available, how hard would it be for you to stop sexual activity while you or your partner goes to get a condom?

Now imagine that your attractive partner who you've recently met says that using a condom is unnecessary, because they don't have HIV. They tell you to trust them, they don't sleep around. You still want to use a condom because of your concerns about getting HIV.

12. How hard would it be for you to refuse to have sex with them if they refused to use a condom with you?

Self-efficacy in Negotiating Condoms Use

Adapted from: (1) Rotheram-Borus, et al. (1997). Risk acts, health care, and medical adherence among HIV+ youths in care over time. *AIDS and Behavior*, 1, 43-52. (2) Rotheram-Borus, M.J., Murphy, D.A., Reid, H.M., & Coleman, C.L. (1996). Correlates of emotional distress among HIV+ youths: health status, stress, and personal resources. *Annals of Behavioral Medicine*, 18, 16-23.

Response Choices: On a scale from 0-10 with 1 being (0) Cannot do at all, (5) moderately certain can do, and (10) certain can do, can you:

1. I can ask a new partner to use condoms.
2. I can ask a partner I haven't been using condoms with to start using them.
3. I can refuse sex when I don't have a condom available.
4. I can get a partner to use condoms, even if I'm drunk or high.
5. I can get every partner to use male condoms, even if they don't want to.

General Self-Efficacy

From: Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON. Internal reliability for GSE = Cronbach's alphas between .76 and .90

Response Choices: 1-4, 1=Not at all true, 2=Hardly true, 3= Moderately true, 4=Exactly true

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.

4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can usually find several solutions.
9. If I am in trouble, I can usually think of a solution.
10. I can usually handle whatever comes my way.

Gender Expression and Perception of gender non-conformity

Adapted from: Garofalo, R., Johnson, A. K., Kuhns, L. M., Cotten, C., Joseph, H., & Margolis, A. (2012). Life skills: evaluation of a theory-driven behavioral HIV prevention intervention for young transgender women. *Journal of Urban Health*, 89(3), 419-431.

In the questions below, “people” refers to average casual observers, such as people on the street.

Response Choices: Very feminine, Mostly feminine, Somewhat feminine, Equally feminine and masculine, Somewhat masculine, Mostly masculine, Very masculine

1. How You See Yourself. The next two questions ask you to describe how you see yourself.
 - a. A person’s appearance, style, or dress may affect the way people think of them. On average, how do you describe your appearance, style, or dress?
 - b. A person’s mannerisms (such as the way they walk or talk) may affect the way people think of them. On average, how do you describe your mannerisms?
2. How You Think Others Perceive You. The next two questions ask about how you think other people see you.
 - a. A person’s appearance, style, or dress may affect the way people think of them. On average, how do you think other people would describe your appearance, style, or dress?
 - b. A person’s mannerisms (such as the way they walk or talk) may affect the way people think of them. On average, how do you think other people would describe your mannerisms?
3. This question asks you about “passing”. “Passing” is being recognized by others as the gender that a person identifies as.
 - a. People can tell I’m transgender (or if gay-identified, gay) even if I don’t tell them.

Transgender Affirmation History

1. At what age did you FIRST say to yourself that you felt transgender? ____ / not applicable / don't know
2. At what age did you FIRST tell another person about being transgender? ____ / not applicable / don't know
3. At what age did you begin to express being transgender (e.g., dress) privately (no one else around)? ____ / not applicable / don't know
4. At what age did you begin to go out in public and express being transgender? ____ / not applicable / don't know
5. At what age did you have your first sexual experience (oral, vaginal or anal sex) because you wanted to, not because you were forced or coerced or otherwise made to have sex? ____ / not applicable / don't know
6. At what age did you have your first sexual experience (oral, vaginal or anal sex) as a transgender because you wanted to, not because you were forced or coerced or otherwise made to have sex? ____ / not applicable / don't know
7. Have you ever taken hormones for gender affirmation (e.g., hormone pills)?
 1. No
 2. Yes
 - i. If yes:
 - ii. At what age did you begin taking hormones? ____ / not applicable / don't know
 - iii. How many times in the last 4 months have you taken hormones ____ / not applicable / don't know
 - iv. In the last 4 months, where did you usually get your hormones? (Check all that apply)
 - From a clinic or health center
 - From a private doctor, private practice
 - On the street (dealer or doctor practicing illegally/black market)
 - From a lover or sex partner
 - From a friend
 - Other (Specify) _____
 - Don't know
8. Have you ever injected silicone?
 1. No
 2. Yes
 - i. If yes:
 - ii. Where have you injected silicone? (Check all that apply)
 - 1 – In your cheeks, chin or face
 - 2 – In your hips or buttocks
 - 3 – In your breasts
 - 97 – Other specify: _____

9. Have you ever had any of the following types of gender confirming surgery/laser therapy? Remember, your answers are completely confidential (Check all that apply).
- 1 – None – never had any surgery/laser therapy
 - 2 – Breast implants (breast augmentation)
 - 3 – Facial or neck surgery (for example, nose job, cheek implants, forehead lift, etc.)
 - 4 – Vaginal surgery (vaginoplasty)
 - 97 – Other feminizing surgery/laser therapy
 - If other, specify: _____
10. You told your parent(s) that you are transgender.
- 1. I don't have anyone I consider as a parent in my life
 - 2. No, I haven't told my parent(s) and they don't know about my gender status
 - 3. No, I haven't told my parent(s), but they know or probably knows about my gender status
 - 4. Yes, I told my parent(s) about my gender status
 - i. What was your parent(s) initial reaction?
 - a) Accepting
 - b) Tolerant
 - c) Intolerant
 - d) Rejecting
 - ii. What is your parent(s) response to your gender status now?
 - 1Accepting
 - a) Accepting
 - b) Tolerant
 - c) Intolerant
 - d) Rejecting

SECTION 3: Healthcare Seeking History

Adapted from: (1) Samal, L., Saha, S., Chander, G., Korthuis, P. T., Sharma, R. K., Sharp, V., ... & Beach, M. C. (2011). Internet health information seeking behavior and antiretroviral adherence in persons living with HIV/AIDS. *AIDS patient care and STDs*, 25(7), 445-449. (2) Garofalo, R., Johnson, A. K., Kuhns, L. M., Cotten, C., Joseph, H., & Margolis, A. (2012). Life skills: evaluation of a theory-driven behavioral HIV prevention intervention for young transgender women. *Journal of Urban Health*, 89(3), 419-431. (3) Ajzen, I. (2002). Constructing a TPB questionnaire: Conceptual and methodological considerations. University of Massachusetts Amherst, Office of Information Technologies. Retrieved November 22, 2004, from <<http://www-unix.oit.umass.edu/~aizen/tpb.html>>.

1. How do you find information on HIV-related services such as HIV testing, condoms, pre-exposure prophylaxis (PrEP), and post-exposure prophylaxis (PEP)? Check all that apply.
 1. Through online or internet
 2. Through gay and transgender friends
 3. Through sexual partners
 4. Through health facilities (e.g., public or private clinic, public or private hospitals)
 5. Through local community centers (e.g., NGOs)
 6. Through family
 7. I do not seek information on HIV services
2. How much information do you seek [through source] on the following topics? [Repeat this question based on responses checked in Question 1] Response choices: none, some, fair amount, a great deal, don't know
 1. HIV testing
 2. Condom
 3. Pre-exposure prophylaxis (PrEP)
 4. Post-exposure prophylaxis (PEP)
 5. Hormone replacement therapy (HRT)
 6. Gender affirming surgery
3. Where do you receive health care services specific to HIV-related services (e.g., condom, HIV testing, PrEP/PEP, HRT)? Check all that apply.
 1. Social hygiene clinic
 2. School or college clinic
 3. Government or public hospital
 4. Private hospital
 5. Traditional healers
 6. Pharmacy consultation
 7. I don't receive healthcare services, I self-medicate
 8. I don't receive healthcare services at all
 9. Other: _____
4. What are some of your reasons for seeking HIV healthcare services? Check all that apply.
 1. Routine check up
 2. Had condomless anal sex
 3. Had experienced HIV/STI symptoms
 4. Had a new sexual partner
 5. Had to confirm a previous result
 6. Other reasons: _____
5. Do you currently have health insurance?
 1. No
 2. Yes

- i. If yes, what kind of health insurance?
 1. Government-based insurance (e.g., Phil Health)
 2. Private insurance
 3. No insurance
 4. Other insurance: _____
6. How often do your health care services meet your specific health care needs?
 1. Never
 2. Rarely
 3. Sometimes
 4. Usually
 5. Always
 6. Not Applicable, don't receive health care
7. In the past year, have you ever avoided getting health or medical services for HIV because of? (Yes/No/Don't know)
 1. Cost of services
 2. Cost of travelling to and from healthcare facility
 3. Time of travel to and from healthcare facility
 4. Distance of travel to and from healthcare facility
 5. Your gender identity or gender presentation
 6. Your sexual identity
 7. Discrimination from healthcare staff and doctors
 8. Healthcare facility not having protective, anti-discrimination policies for gay and transgender patients
 9. Healthcare facility not having protective, anti-discrimination policies for patients living with HIV
 10. Being criminalized or jailed
 11. Doctors and staff are not professional
 12. Doctors and staff are not competent to provide HIV services
 13. Doctors and staff are not competent in providing hormone, surgery, or other gender-affirming services
 14. Do not want people to identify or know your health
 15. Not having the care or services you're looking for
 16. Not having insurance
 17. Problems due to insurance
 18. Other reasons for avoiding healthcare: _____
8. [if participant is transgender] Due to your transgender identity, have you ever experienced discrimination from physicians, nurses, or other healthcare workers?"
 1. No
 2. Yes
9. [if participant is gay] Due to your gay identity, have you ever experienced discrimination from physicians, nurses, or other healthcare workers?"

1. No
 2. Yes
10. In the past year, did you seek healthcare for HIV symptoms?
1. No
 2. Yes
11. Have you ever been tested for HIV?
1. No
 2. Yes
12. Have you been tested for HIV in the last 12 months?
1. No
 2. Yes
13. What is your HIV status?
1. Positive (I had a reactive HIV test result)
 2. Negative (I had a non-reactive HIV test result)
 3. Unknown (I do not know my HIV status)
14. If diagnosed positive, have you been enrolled to care, or have attended an HIV clinic to get HIV medications and other services?
1. No
 2. Yes
15. If enrolled to care, have you attended the clinic within the previous 6 months?
1. No
 2. Yes
 - 3.
16. If enrolled to care, have you regularly go to an HIV clinic to get HIV medications?
1. No
 2. Yes
17. If positive, what is your viral load? [insert number]
18. If positive, are you virally suppressed (viral load is less than 1000copies/ml)?
1. No
 2. Yes
19. In the past year, did you seek healthcare for STI symptoms?
1. No
 2. Yes
20. Have you had an STI diagnosis in the past?
1. No
 2. Yes
 - i. If yes, what STI were you diagnosed for?

1. Gonorrhea
2. Chlamydia
3. Genital Herpes
4. Syphilis
5. Other: _____

Mental Health Seeking Behavior

21. If you were having a personal or emotional problem, how likely is it that you would seek help from the following people? (1=extremely unlikely, 3= unlikely, 5= likely, 7=extremely likely)
1. Intimate partner (e.g., boyfriend, husband, wife, etc.)
 2. Friend
 3. Parent
 4. Other relative or member
 5. Mental health professional (e.g., counselor, psychologist, social worker)
 6. Phone helpline
 7. Doctor
 8. Religious leader
 9. I would not seek help from anymore
 10. Other person not listed above: _____
22. If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people?
1. Intimate partner (e.g., boyfriend, husband, wife, etc.)
 2. Friend
 3. Parent
 4. Other relative or member
 5. Mental health professional (e.g., counselor, psychologist, social worker)
 6. Phone helpline
 7. Doctor
 8. Religious leader
 9. I would not seek help from anymore
 10. Other person not listed above: _____

SECTION 4: Condoms

Condom History

Taken from: Fonner, V. A., Kennedy, C. E., O'Reilly, K. R., & Sweat, M. D. (2014). Systematic assessment of condom use measurement in evaluation of HIV prevention interventions: need for standardization of measures. *AIDS and Behavior*, 18(12), 2374-2386.

For every question, also ask by type of sex (e.g., oral, anal), other partners types (e.g., primary partners, casual partners, male sex workers, male partners with history of illicit drug use, male partners living with HIV, foreigners) and months (e.g., 4-month, 6-month, 12-month).

1. Number of Protected Sex Acts
 - a. How many times have you had [type of sex] with [type of partner] in the past __ month(s)? Part
 - b. How many times have you used a condom during [type of sex] with [type of partner] in the last __month(s)?
 - i. None
 - ii. 1-2 times
 - iii. 3-5 times
 - iv. 5 or more times
 - v. Refuse to answer
2. Condom Use at Last Sex
 - a. Did you or your partner use a condom the last time you had [type of sex] with: a) a male non-primary partner? b) a male primary partner?
 - i. Yes
 - ii. No
 - iii. Refuse to answer
3. Consistent Condom Use
 - a. In the past _ month(s), how often did you use a condom with: a. a male non-primary partner(s) b. a male primary partner(s)?
 - i. All the time
 - ii. Occasionally
 - iii. Never
 - iv. Refuse to answer
4. What are some of the reasons for not using condoms? Check all that apply.
 - i. Condoms are expensive
 - ii. I don't know where to get condoms
 - iii. I feel stigmatized if I use condoms
 - iv. My partner does not allow me to use condom
 - v. My religion prohibits me from using condoms
 - vi. Other reasons, please state: _____

Attitudes and perceptions about safer sex

Adapted from: Kegeles SM, Hays RB, Coates TJ. The Mpowerment Project: a community-level HIV prevention intervention for young gay men. Am J Public Health. 1996 Aug; 86(8):1129-1136. (alpha = 0.95)

1. The following set of questions pertain to your attitudes and thoughts about your sexual health and behaviors. Regardless of your HIV status, please answer the following questions to the best of your ability.

Response Choices: (Strongly Disagree, Somewhat Disagree, Slightly Disagree, Slightly Agree, Somewhat Agree, Strongly Agree)

*Items reversed in scale

1. Most male sex partners I meet only engage in safer sex practices.
2. *I have trouble letting a sex partner know I want to have safer sex.
3. I am able to avoid behavior that may put me at risk of HIV infection.
4. My friends think it is important to use condoms.
5. I can choose safer sex with a regular male sex partner.
6. I can choose safer sex with a casual male sex partner.
7. *I find it difficult to have safer sex with a man I have very strong sexual feelings for.
8. *I find it difficult to have safer sex when high or drunk.
9. *I am less concerned about having anal sex without a condom now that new anti-HIV drug combination treatments are available.
10. *Someone can talk me out of safer sex by persuading me they are HIV-negative.
11. If I ever did something risky, I am confident that I would go back to having safer sex right away.
12. I am confident that I can have safer sex even if my partner really doesn't want to.
13. *I find it difficult telling a sex partner I won't have anal intercourse without a condom.
14. I can use condoms with any sexual partner I might have.
15. My friends encourage me to practice safer sex.

SECTION 5: PrEP and PEP History

Adapted from: Garofalo, R., Johnson, A. K., Kuhns, L. M., Cotten, C., Joseph, H., & Margolis, A. (2012). Life skills: evaluation of a theory-driven behavioral HIV prevention intervention for young transgender women. *Journal of Urban Health*, 89(3), 419-431.

To participant: One way to fight HIV is called PrEP, which stands for pre-exposure prophylaxis. PrEP works by giving HIV- negative people HIV drugs to keep them from getting HIV. The following questions are about your thoughts and opinions of PrEP.

Knowledge, Interest to Use, Acceptability of PrEP

1. Have you heard of HIV-negative people taking HIV medication before sex because they thought it would lower their chances of getting HIV (also known as PrEP)?

1. No
 2. Yes
 2. Have you ever taken HIV medication before sex because you thought it would lower your chances of getting HIV (also known as PrEP)?
 1. No
 2. Yes
 3. If the possibility of taking a daily pill to prevent HIV (“oral PrEP”), would you be interested in taking it?
 1. Not interested at all
 2. Somewhat interested
 3. Very interested
 - i. If not, what are some of the reasons for not interested in taking daily oral pill - PrEP?
 - I need to know more information before taking PrEP
 - I don’t trust researchers or medical providers
 - I worry about side effects
 - I worry about side effects specifically with my hormone use
 - I worry about cost of PrEP
 - I’m not at risk of getting HIV
 - The HIV medication may not protect me from getting HIV
 - I’m afraid people will think I’m HIV-positive if they see me taking the medication
 - I don’t like taking pills
 - I’m afraid people will think I’m “risky” if they see me taking the HIV medication
 - Other, please specify:

 - None of the above
4. If the possibility of taking having a long-lasting injectable drug to prevent HIV (“injectable PrEP”), would you be interested in taking it?
 1. Not interested at all
 2. Somewhat interested
 3. Very interested
 - i. If not, what are some of the reasons for not interested in taking injectable - PrEP?
 - I need to know more information before taking PrEP
 - I don’t trust researchers or medical providers
 - I worry about side effects
 - I worry about side effects specifically with my hormone use
 - I worry about cost of PrEP
 - I’m not at risk of getting HIV
 - The HIV medication may not protect me from getting HIV

-I'm afraid people will think I'm HIV-positive if they see me taking PrEP

I don't like medical injections

-I'm afraid people will think I'm "risky" if they see me taking the PrEP -Other, please specify:

-None of the above

5. My gay and transgender friends talk about PrEP.

1. Very true
2. Somewhat true
3. Not true

1. My gay and transgender friends are interested in taking PrEP.

1. Very true
2. Somewhat true
3. Not true
- 4.

2. My gay and transgender friends would encourage each other to take PrEP.

1. Very true
2. Somewhat true
3. Not true

Knowledge, Willingness to Use, Acceptability of PEP

To participant: Another way to fight HIV that is being tested is called PEP, which stands for post-exposure prophylaxis. PEP works by giving HIV- negative people HIV drugs to keep them from getting HIV within 72 hours after suspected exposure. The following questions are about your thoughts and opinions of PEP.

1. Have you heard of HIV-negative people taking HIV medication after suspected exposure during sex to lower their chances of getting infected with HIV (also known as PEP)?

1. No
2. Yes

2. Have you ever taken HIV medication after suspected exposure during sex to lower their chances of getting infected with HIV (also known as PEP)?

1. No
2. Yes

3. If the possibility of taking a pill after suspected exposure during sex to prevent HIV ("PEP"), would you be interested in taking it?

1. Not interested at all
2. Somewhat interested
3. Very interested

i. If not, what are some of the reasons for not interested in taking PEP?

-I need to know more information before taking PEP

- I don't trust researchers or medical providers
- I worry about side effects
- I worry about side effects specifically with my hormone use
- I worry about cost of PEP
- I'm not at risk of getting HIV
- The HIV medication may not protect me from getting HIV
- I'm afraid people will think I'm HIV-positive if they see me taking PEP
- I don't like medical injections
- I'm afraid people will think I'm "risky" if they see me taking the PEP
- Other, please specify: _____
- None of the above

4. My gay and transgender friends talk about PEP.
 1. Very true
 2. Somewhat true
 3. Not true
5. My gay and transgender friends are interested in taking PEP.
 1. Very true
 2. Somewhat true
 3. Not true
6. My gay and transgender friends would encourage each other to take PEP.
 1. Very true
 2. Somewhat true
 3. Not true

SECTION 6: Social Networks, Gay and Transgender Communities

Social Cohesion Scale

Adapted from: Lippman, S. A., Donini, A., Díaz, J., Chinaglia, M., Reingold, A., & Kerrigan, D. (2010). Social-environmental factors and protective sexual behavior among sex workers: the Encontros intervention in Brazil. *American journal of public health*, 100(S1), S216-S223.

Response Choices: Strongly agree, Mostly agree, Mostly disagree, Strongly disagree

1. You can count on your gay and transgender friends if you need to borrow money.
2. You can count on your gay and transgender friends to accompany you to the doctor or hospital.
3. You can count on your gay and transgender friends if you need to talk about your problems.
4. You can count on your gay and transgender friends if you need somewhere to stay.

5. You can count on your gay and transgender friends to help deal with violent or difficult situations.
6. You can count on your gay and transgender friends to help you access health services.
7. You can count on your gay and transgender friends to support the use of condoms.
8. The group of gay and transgender people in your area is an integrated group.
9. You can trust the majority of other gay and transgender people in your area.

Social Participation Scale

Adapted from: Fonner, V. A., Kerrigan, D., Mnisi, Z., Ketende, S., Kennedy, C. E., & Baral, S. (2014). Social cohesion, social participation, and HIV related risk among female sex workers in Swaziland. PloS one, 9(1), e87527.

Response choices: No involvement, Member, Active member, Leader of a group

1. Please indicate the level of participation in the following groups:
 1. Affiliations with church or religious groups
 2. Affiliations with clubs
 3. Cultural activities
 4. Community activities
2. Please indicate your level of participation in the following activities with your gay and transgender friends:
 1. Pageants
 2. HIV advocacy in the streets
 3. HIV advocacy in local organizations
 4. HIV advocacy in social media
 5. Salon

Collective Action

Adapted from: Fonner, V. A., Kerrigan, D., Mnisi, Z., Ketende, S., Kennedy, C. E., & Baral, S. (2014). Social cohesion, social participation, and HIV related risk among female sex workers in Swaziland. PloS one, 9(1), e87527.

1. In the past 12 months, have you participated in:
 - a. A meeting, march, rally, or gathering to promote the rights of gay and transgender people? (Yes/No)
 - b. Any talks or meetings related to HIV/AIDS with other gay and transgender people? (Yes/No)

SECTION 7: Environmental Factors

Healthcare Facility Accessibility - Primary Care Assessment Survey (PCAS): Organizational Access

Adapted from: Haggerty, J. L., Lévesque, J.-F., Santor, D. A., Burge, F., Beaulieu, C., Bouharaoui, F., ... Gass, D. (2011). Accessibility from the Patient Perspective:

Comparison of Primary Healthcare Evaluation Instruments. Healthcare Policy, 7(Spec Issue), 94–107.

Response choices: 1=Very poor 2=Poor 3=Fair 4=Good 5=Very good 6=Excellent

1. How would you rate the convenience of your clinic/doctor's office location?
2. How would you rate the hours that your clinic/doctor's office is open for medical appointments?
3. How would you rate the amount of wait for an appointment when you are sick?
4. How would you rate the amount of time you wait at your doctor's office for your appointment to start?
5. How would you rate getting through your doctor's office by travelling?
6. How would you rate the ability to speak to your doctor by phone when you have a question or need medical advice?

Condom Availability and Accessibility

1. Where do you get condoms for sex? Check all that apply.
 1. Pharmacy
 2. Condom dispensing machine
 3. Store
 4. Friends
 5. Sexual partners
 6. Outreach workers
 7. Community clinics or social hygiene clinics
 8. Treatment hubs
 9. Community organizations offices
 10. Hospital
 11. Bars and clubs
 12. Bathhouses
 13. Other places: ____
 14. I do not use condom
2. From the choices above, rate your level of easiness in getting condom for each place. (Very easy, easy enough, not so easy, not easy at all)
3. From the choices above, rate your level of comfortability in getting condom for each place. (Very comfortable, comfortable enough, not so comfortable, not comfortable at all)
4. From the choices above, where do you primarily get condoms? ____ [primary condom source]
5. In the past year, have you ever avoided getting condoms because of?
(Yes/No/Don't know)
 - a. Cost of condoms
 - b. Cost of travelling to and from [primary condom source]

- c. Time of travel to and from [primary condom source]
- d. Distance of travel to and from [primary condom source]
- e. Feeling stigmatized
- f. Being discriminated
- g. Being criminalized or jailed
- h. The primary condom source] did not have protective, anti-discrimination policies for gay and transgender patients
- i. The primary condom source] did not have protective, anti-discrimination policies for patients living with HIV
- j. The [primary condom source] was not private enough
- k. Not knowing where to get condoms
- l. Other reasons for avoiding getting condoms: _____

Adapted from: (1) Harkabus, L. C., Harman, J. J., & Puntenney, J. M. (2013). Condom Accessibility: The Moderating Effects of Alcohol Use and Erotophobia in the Information–Motivation–Behavioral Skills Model. *Health promotion practice*, 14(5), 751-758.

Response Choices: (1 = always, 2 = often, 3 = sometimes, 4 = rarely, 5 = never) $r = .43$, p

- 1. To what extent have you kept condoms easily available in the past 30 days?
- 2. How often you have purchased condoms in the past 30 days?

SECTION 8: Structural and Norms

Stigma and Discrimination and Equity towards PLHIV

Adapted from: Genberg, B. L., Kawichai, S., Chingono, A., Sendah, M., Chariyalertsak, S., Konda, K. A., & Celentano, D. D. (2008). Assessing HIV/AIDS stigma and discrimination in developing countries. *AIDS and Behavior*, 12(5), 772-780.

Response Choices: 1-4, strongly agree, agree, disagree, strongly disagree

*Items are reversed in scale

Shame, blame, social isolation sub-scale ($\alpha = 0.83$)

- 1. People living with HIV/AIDS should be ashamed.
- 2. People with AIDS should be isolated from other people.
- 3. People who have HIV/AIDS are cursed.
- 4. People living with HIV/AIDS deserve to be punished.
- 5. *A person with HIV/AIDS should be allowed to work with other people.
- 6. Families of people living with HIV/AIDS should be ashamed.
- 7. It is reasonable for an employer to fire people who have HIV/AIDS.
- 8. People with HIV/AIDS are disgusting.
- 9. *People who have HIV/AIDS deserve compassion.

10. *People with HIV should be allowed to participate fully in the social events in this community.

Perceived discrimination sub-scale (alpha =0.78)

1. People living with HIV/AIDS face neglect from their family.
2. People living with HIV/AIDS face physical abuse.
3. *People want to be friends with someone who has HIV/AIDS.
4. People living with HIV/AIDS face ejection from their homes by their families.
5. Most people would not buy vegetables from a shopkeeper or food seller that they knew had AIDS.
6. People who have HIV/AIDS face verbal abuse.
7. People living with HIV/AIDS face rejection from their peers.
8. People who are suspected of having HIV/AIDS lose respect in the community.

Equity sub-scale (alpha= 0.72)

1. *People living with HIV/AIDS should be treated similarly by health care professionals as people with other illnesses.
2. *People who have HIV/AIDS should be treated the same as everyone else
3. People with HIV/AIDS do not deserve any support.
4. People with HIV/AIDS should not have the same freedoms as other people.

Condom Social Norms

Adapted from: Kegeles SM, Hays RB, Coates TJ. The Mpowerment Project: A community-level HIV prevention intervention for young gay men. Am J Public Health 1996;86:1129–1136. (alpha = 0.97)

Response Choices: (strongly disagree, somewhat disagree, slightly disagree, slight agree, somewhat agree, strongly agree)

1. My gay and transgender friends always use condoms when having anal sex with new partners.
2. My gay and transgender friends think it is important to use a condom when having anal sex with a new partner.
3. Most of my gay and transgender friends think you should avoid unsafe sex.
4. Most gay and transgender people I know who have sex with men engage in safer sex practices all the time.
5. Most of my gay and transgender friends think you should always have safer sex.

Added items:

3. Most of my gay and transgender friends discuss the importance of using condoms with me.
4. Most of my gay and transgender friends tell me where to get condoms.
5. My gay and transgender friends give me condoms.
6. My gay and transgender friends give condoms to each other.

7. My gay and transgender friends encourage me to use condoms.

Gender Inequity Norms

Adapted from: Shannon, K., Leiter, K., Phaladze, N., Hlanze, Z., Tsai, A. C., Heisler, M., ... & Weiser, S. D. (2012). Gender inequity norms are associated with increased male-perpetrated rape and sexual risks for HIV infection in Botswana and Swaziland. *PloS one*, 7(1), e28739.

Response choices: strongly disagree, somewhat disagree, slightly disagree, slight agree, somewhat agree, strongly agree

1. "It is ok for men to have more than one (sexual) partner"
2. "It is a woman's duty to have sex with her spouse/partner even if she does not want to"
3. "It is more important for a woman to respect her spouse/partner than it is for a man to respect his spouse/partner"
4. "A man may beat this spouse/partner if she disobeys him"
5. "A man may beat this spouse/partner if he believes she is having sex with another man"
6. "It is more important for a boy to get an education than a girl"

Adapted from (but not yet tested for gay and transgender women): Pulerwitz, J., & Barker, G. (2008). Measuring attitudes toward gender norms among young men in Brazil: Development and psychometric evaluation of the GEM Scale. *Men and Masculinities*, 10(3), 322-338.

Response choices: strongly disagree, somewhat disagree, slightly disagree, slight agree, somewhat agree, strongly agree

Inequitable Gender Norms

1. It is the man who decides what type of sex to have.
2. A woman's most important role is to take care of her home and cook for her family.
3. Men need sex more than women do.
4. You don't talk about sex, you just do it.
5. Women who carry condoms on them are "easy."
6. A man needs other women, even if things with his wife are fine.
7. There are times when a woman deserves to be beaten.
8. Changing diapers, giving the kids a bath, and feeding the kids are the mother's responsibility.
9. It is a woman's responsibility to avoid getting pregnant.
10. A man should have the final word about decisions in his home.
11. Men are always ready to have sex.
12. A woman should tolerate violence in order to keep her family together.
13. If a woman cheats on a man, it is okay for him to hit her.
14. If someone insults me, I will defend my reputation, with force if I have to.

15. I would be outraged if my wife asked me to use a condom.
16. It is okay for a man to hit his wife if she won't have sex with him.
17. I would never have a gay friend.

Equitable Gender Norms:

1. A couple should decide together if they want to have children.
2. In my opinion, a woman can suggest using condoms just like a man can.
3. If a guy gets a woman pregnant, the child is the responsibility of both.
4. A man should know what his partner likes during sex.
5. It is important that a father is present in the lives of his children, even if he is no longer with the mother.
6. A man and a woman should decide together what type of contraceptive to use.
7. It is important to have a male friend that you can talk about your problems with.

8. It disgusts me when I see a man acting like a woman.
9. Women should be virgins until they get married.
10. If a man cheats on a woman, it is okay for her to hit him.
11. A man always deserves the respect of his wife and children.
12. Above all, a man needs respect.
13. Real men only have sex with women.
14. Men can take care of children just as well as women can.
15. Women have the same right as men to study and to work outside of the house.
16. I think it is ridiculous for a boy to play with dolls.
17. If a man sees another man beating a woman, he should stop it.
18. If she wants, a woman can have more than one sexual partner.

SECTION 9: THANK YOU MESSAGE

Thank you for participating – your survey is now being reviewed by project staff for completion, you will receive an email from us detailing your compensation within 3-5 business days.

Thank you for taking the time to answer the survey. Your answers will be kept entirely confidential.

Thank you!
-#ParaSaAtin Team

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