Improving Nurse Practitioner Interventions for Intimate Partner Violence in Sexual and Gender Minorities

Wendy Phelps-Byam

Edson College of Nursing and Health Innovation, Arizona State University

Author Note

Wendy Phelps-Byam is a registered nurse and graduate student at Arizona State University. She has no known conflicts of interest to disclose.

Correspondence should be addressed to Wendy Phelps-Byam, Edson College of Nursing and Health Innovation, Arizona State University, Downtown Campus, 550N 3rd Street, Phoenix, AZ 85004. Email: wmphelps@asu.edu

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Abstract

Although estimated to be 50-60% more than in heteronormative populations, intimate partner violence (IPV) in LGBTQ+ populations is often unrecognized. This project aims to increase nurse practitioner (NP) IPV screening to facilitate early intervention and decrease LGBTQ+ IPV rates.

The researcher gathered information from 1:1 interview with LGBTQ+ IPV survivors (*n*=3) and produced a dramatization narrating experiences. Subjects were required to preregister and consent. Nurse practitioners (*n*=6) participated in a 1.5hr online educational intervention, viewing the video and a 45-min webinar.

The Physician Readiness to Manage Intimate Partner Violence Scale (PREMIS) and the LGBT Development of Clinical Skills Scale (LGBT-DOCCS) were administered as test-retest. The PREMIS measures (α =.963) readiness to screen for IPV, the LGBT-DOCCS measures attitude (α=.80), clinical preparedness (α=.88) and knowledge (α=.83). All participants in both groups were voluntary and recruited from e-lists and special interest groups. Cox's Theory of Interaction and the Minority Stress Theory were the dual framework along with the ACE model of transformational knowledge to support methodology and outcomes.

Results

Statistically significant ($p<0.05$) improvements in readiness to screen for IPV, knowledge, and attitudes as measured by PREMIS domains ($p= .006$; p=.012) and LGBT-DOCSS ($p = .028$). Clinically significant improvement in mean scores for likelihood to screen for SOGI.

Supported by the theoretical framework and implementation model, increased readiness to screen, improved knowledge and improved attitude, will lead to better NP-patient interactions,

decreased minority stress, increased NP screening and intervention, and decreased rates of IPV in LGBTQ+ populations.

Keywords: intimate partner violence, LGBTQ+, domestic violence

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Intimate partner violence (IPV) is a pervasive problem at all societal levels. Due to social inequities, special populations may be more vulnerable than others. Systemic disparities especially impact the economically disadvantaged, geographically isolated, the very young, the elderly and racial minorities. Although also identified as a vulnerable population, IPV in sexual and gender minority groups often goes unaddressed.

There are well-established correlations in heterosexual IPV and decreased mental and physical health and overall well-being. Lesbian, gay, bisexual, transgender, and queer or questioning plus others including non-binary (LGBTQ+), are under-represented in research and resources. Healthcare providers are often limited in their knowledge of the stigma and inequities in LGBTQ+ health. Additionally, public policies and laws offer limited protection for these victims of violence.

Background and Significance

Intimate partner violence in LGBTQ+ populations occur as much as and often time much more than in heteronormative populations and does not have the same signs or characteristics in comparison to heterosexual couples (Dardis et al., 2019). Healthcare providers' lack of cultural competence and lack knowledge of structure and issues within LGBTQ+ relationships contribute to missed signs of IPV and an inability to anticipate needed support services. Issues that affect this population such as minority stress, identity abuse and abuse that often has more psychological and mental health ramifications when compared to heterosexual populations, must be understood to adequately inform culturally sensitive screening to prevent subsequent abuse

and escalation of violence. Lifetime experiences of IPV are the strongest predictors of repeat violence (Scheer et al., 2020; Stults, et al., 2019).

Intimate partner violence (IPV) costs government healthcare systems millions of dollars annually. In 2014, there were 43 million Americans who had experienced IPV; the lifetime cost burden for United States healthcare is estimated to be 1.3 trillion dollars (Peterson et al., 2018). During Covid-19, global IPV rates soared due to societal and financial stresses and home quarantine; true numbers and health outcomes are not yet known (Piquero et al., 2021).

In a 2018 study, the Centers for Disease Control (CDC) estimated the total lifetime cost per IPV victim was an average of $81,960 (Peterson, 2018). This study was based on US records reporting 32 million female and 12 million male victims and estimated a total economic burden of $3.6 trillion which included $1.3 trillion in lost productivity and an estimated $1.3 trillion burden for the US government. Considering the unknown factors due to underreporting by all populations, these numbers may be substantially higher. Also, IPV in the LGBTQ+ population has not been well documented or studied. These factors make the true costs difficult to estimate. There have been studies by domestic violence organizations and independent researchers; however, the last time that the CDC collected data on LGBTQ+ IPV was 2010 (Walters et al., 2013).

In January 2017, the United States White House began a roll back on LGBTQ+ rights and protection that included prohibiting transgender people in the military, nominating known anti-LGBTQ+ justices to the Supreme Court, removing federal protection for transgender civil employees and minor students in public schools, allowing “religious liberty” to be a basis for discrimination in hiring and services, and firing the entire Presidential Advisory Committee on HIV/AIDS (Lopez, 2018). Although there were plans to include sexual orientation on the 2020

census, that was rescinded; information about LGBTQ+ seniors were also removed from National Survey of Older Americans (O'Hara, 2017). Eventually, same sex married couples were counted in the 2020 Census to gather data on households with children. The United States Census Bureau recently began a Household Pulse Survey (HPS) to study the effects of Covid and now include all aspects of sexual orientation and gender identity (SOGI) (Anderson et al., 2021).

From 2016 to 2017 reports of both hate crimes and intimate partner violence experienced by LGBTQ+ populations doubled and homicide rates for gay men increased by 400% (National Coalition of Anti-Violence Programs, 2018). In 2017, *Time* magazine reported that two-thirds of the LGBTQ+ population (*n*=841) surveyed felt the United States was no longer safe for them (Steinmetz, 2017).

Even before Covid, the National Coalition of Anti-Violence Programs (NCAVP) (2018) reported sexual and gender minority (SGM) populations were underrepresented in IPV reporting, services, and intervention. Approximately 43% of LGBTQ+ populations report refusal of safe housing within domestic violence organizations based on their sexual orientation or gender identity (NCAVP, 2018). Despite Healthy People 2020 and 2030 identifying the health and safety of LGBTQ+ populations as a public health objective, rates of IPV are reported to be 2-3 times that of heteronormative populations (Office of Disease Prevention and Health Promotion, 2021a; ODPHP, 2021b; Scheer et al., 2020). Multi-factorial barriers to screening, reporting and help-seeking indicate true rates are much higher (Scheer et al., 2020)

Unfortunately, healthcare systems structure and healthcare professionals'(HCP) attitudes and communication have repeatedly been cited as barriers in both general access for LGBTQ+ healthcare and in help-seeking behaviors in intimate partner violence (Calton et al., 2016; Dardis et al., 2019; Stults et al., 2019). Health care providers may need to examine their beliefs, as

homophobia, transphobia and stereotypes have been shown to be detrimental to help-seeking behaviors and may even contribute to LGBTQ+ IPV (Woulfe & Goodman, 2018). Providers who do not explore their own values, attitudes, or religious views may not be able to effectively intervene. Their inattention, disregard or judgment can lead to increased shame, isolation and mental health issues for IPV survivors (Guadalupe-Diaz & Jasknski, 2017).

Assumed heterosexuality and cisgendered identities, anticipated stigma, and lack of SOGI screening by HCPs have been identified as some of these barriers to access to services (Cronin et al.,2020). Many LGBTQ+ folks report never being screened for, or reporting SOGI and therefore avoid discussing their intimate partner(s) or sexual relationships with HCPs (Cronin et al.,2020)

In a systematic review of same-sex violence and help seeking behaviors, Santoniccolo et al. (2021) found that victims often considered HCPs the "least helpful" sources for intervention due to heterosexism, gender stereotypes, discrimination, stigma, or shame. Nurses are generally appreciated for accepting attitudes and behavior. However, there are also negative attitudes and misperceptions among nurses in caring for LGBTQ+ patients as well (Brown et al., 2020; Patterson et al.,2019).

HCPs admit misconceptions and discomfort with LGBTQ+ healthcare and either lack of screening or discomfort with screening for both SOGI and IPV (Nowaskie & Sowinski, 2019). Most HCPs report little to no specific training in LGBTQ+ healthcare and no training in IPV for special populations (Green et al., 2018).

Problem Statement

Even providers who are truly accepting of LGBTQ+ patients may have assumptions that are driven by heteronormative social mores; this can sometimes lead to misjudgments and

missed opportunities. If a patient does not feel safe to disclose a sexual or gender minority identity to a healthcare provider, this significantly decreases the likelihood of help-seeking for intimate partner violence, potentially leading to repeat exposure and escalation. At the intersection of the provider's lack of cultural humility, and the patient's hesitancy to disclose sexual orientation or gender identification, lies the problem of identifying and intervening with LGBTQ+ intimate partner violence.

Purpose and Rationale

The purpose of this project is to address issues regarding LGBTQ+ IPV including help-seeking behaviors, and barriers and facilitators related to healthcare providers' comfort, competence, knowledge and attitude. It is important to explore factors associated with nondisclosure of SOGI as a baseline in establishing a patient-provider relationship to facilitate interventions related to intimate partner violence. Patient-centered educational interventions are relevant to improve HCPs approach to LGBTQ+ IPV in gaining competence, knowledge and understanding to establish supportive, trusting relationships, increase screening and improve patient outcomes.

National Guidelines and Initiatives

National guidelines for screening for IPV in LGBTQ+ are inconsistent. Some organizations, including the American Medical Association and The Cleveland Clinic do recognize the unique challenges of LGBTQ+ patient populations and have published specific parameters for screening and intervention; while other leading organizations driving providers' practice do not mention this issue in this patient population (Floyd, 2016; McNamara et al., 2016; United States Preventive Services Task Force, 2018). The American Association of Nurse Practitioners and nursing organizations at all levels advocate for provider education and specific

interventions geared toward LGBTQ+ healthcare and intimate partner violence (Aisner et al., 2020).

The United States Department of Health and Hospitals (USDHH) has partnered with the Fenway Institute, a leader in LGBTQ+ health education to develop a curriculum for HCPs to improve cultural competence and knowledge (USDHH, 2016; National LGBTQIA+ Health Education Center, 2021). In a continuation of goals for 2020, Healthy People 2030 has added LGBTQ+ health, safety and representation to overall goals with multiple objectives toward increasing access to individualized care and quality of life for LGBTQ+ patients (Office of Disease Prevention and Health Promotion, 2021a; ODPHP, 2021b; USDHH, 2016). Reducing intimate partner violence in all populations is also an objective of Healthy People 2030 (ODPHP, 2021d).

The Institute for Healthcare Improvement (IHI) seeks to improve measures in Triple Aim goals of population health, patient experience and costs. Included in these broad initiatives are safe, equitable, patient-centered care (IHI, 2021). This project supports IHI goals for health and safety of LGBTQ+ populations (IHI, 2021).

Internal Data

In clinical observations of local family practices in the greater metropolitan Phoenix area, nurse practitioners (NP) have witnessed providers refusing to discuss health and safety risks associated with HIV and pre-exposure prophylaxis (PrEP) due to their belief systems. Healthcare providers have made disparaging remarks about LGBTQ+ patients in crisis situations in emergency department environments and in critical care.

Regional LGBTQ+ groups identify police and judicial systems as barriers to seeking help in IPV and indicate that HCPs also discriminate. In area clinics and emergency rooms, providers

do not typically assess SOGI, even during patient intake to establish care. Besides the limited number of downtown clinics, there are few practices or facilities in the greater metropolitan area that advertise as LGBTQ+ safe spaces.

Arizona LGBTQ+ IPV advocacy groups have identified discrimination and even harassment by medical providers as barriers to seeking help. Group members report that some HCPs do try to offer empathy and care, but do not always ask the right questions or use the appropriate terminology and sometimes make stereotypical assumptions that create barriers to help-seeking barriers.

Arizona also saw a drastic rise in domestic violence during the Covid-19 pandemic. According to state-wide domestic violence organizations, some victims felt trapped with their abusers and were unable to even call a DV helpline. Phoenix police report a 175% increase in homicides related to domestic violence (Phoenix Police Department, 2020).

Non-profits for domestic violence in Arizona report major reductions in staff, decreased funding and increased needs (*REDACTED*, 2021). Considering the pre-pandemic challenges and lack of resources, COVID will only increase the vulnerability of LGBTQ+ populations.

PICO Elements Summation and Discussion

LGBTQ+ IPV is a societal problem and may be under reported. Education for HCPs and creation of inclusive environments have shown encouraging results. The literature suggests correcting the gaps in healthcare education, increasing culturally appropriate screening, and encouraging help-seeking behaviors are positive steps toward decreasing IPV and supporting the mental and physical health of LGBTQ+ populations.

Preliminary interest in this problem guided an inquiry of current evidence to determine the best interventions to affect changes in LGBTQ+ IPV. This literature review has led to the

clinically relevant PICOT question - How will focused education affect nurse practitioner readiness to screen for intimate partner violence in sexual minority populations?

Evidence Synthesis

Search Strategy

The literature review included an initial search of several databases including the Cumulative Index of Nursing an Allied Health Literate (CINAHL), SocIndex and PubMed. Databases were chosen based on their relevance to public health, healthcare providers and social issues. Searches were adapted based on database fields and inclusion and exclusion strategies.

Foundation and Research

Initial searches of this extensive *CINAHL* database were conducted using the key terms "*LGBT"* as well as its operational terms "*LGBTQ", lesbian, gay, transgender, bisexual, queer,* and *questioning.* Boolean search limiters were added and included *help seeking behaviors*, *health care*, *health care providers* and *cultural competence* with dates limited to 2016-2021. This return resulted in 9,598 articles. More specific limiters were placed including keyword searches of only the subject field, requesting English language articles and isolating peer-reviewed, research and academic journals.

Further exclusion eliminated articles based on the keyword *youth* and added the required Boolean phrase *primary care*, decreasing returns to twenty-two items. These abstracts were reviewed, and fifteen articles were considered for further research.

SocIndex was chosen because of its focus on the social aspect of this issue. Initial yields were over 5,000 and this search required the most inclusion and exclusion keywords to narrow returns. Keywords again included *LGBTQ* and all the mesh terms as well as *intimate partner violence* and *help seeking*, returning 2250 items. Further limiters specified only peer reviewed,

scholarly journals, included *healthcare provider comfort* and *competence* and *knowledge* and excluded the terms *teen* or *youth*. Keyword limiters also incorporated phrases to eliminate research that included *pregnant* or *heterosexual* in the subject fields.

Limiting dates to within five years narrowed the return to eleven articles that were considered applicable. After further reading, some items were book chapters as opposed to research. However, they were authored by some of the same scholars who had published multiple works on this issue and author's names and associations were saved for future searches.

PubMed proved to be the most specific database with few keywords and limiters required. Standard inclusions specified last five years, research only, and keyword searches *LGBTQ healthcare* and *LGBTQ intimate partner violence*. Boolean phrases resulted in 1024 returns; further limiters were chosen, and *healthcare provider* and *education* yielded 88 results. The phrase *descriptive statistics* was also added to searches and resulted in six returns. Full text copies of all six were obtained for review.

Additional search strategies included intense review of recent and relevant references cited by the database yields. Reference lists were reviewed for landmark studies as well as relevant publications within the last five years. Some were used for general internet searches to identify leading scholars and institutions. Others were eliminated if they revealed redundant background information, guidelines or literature reviews.

Authors' backgrounds and affiliations were explored. Research Gate was searched with author names and keywords. This did yield very recently authored manuscripts that were not yet available online but declared publication acceptance. Further research through the named journal websites did verify that the articles had been accepted for publication. Five cohort studies were identified through this search strategy.

Overall, 37 articles were printed for hard copy review. After a brief critical analysis, initially identifying only subject and type of study, seventeen articles were eliminated. Eliminated works included literature reviews, pilot studies, and some higher-level studies that did not truly explore the phenomena of interest, had high attrition rates or did not show adequate levels of significance. Due to the nature of the subject under investigation, there were no random controlled trials or meta-analyses. Returns included three meta-synthesis which will also be considered.

The remaining twenty were investigated using more in-depth critical analysis exploring quality of evidence and findings. Of those twenty, ten were chosen based on level of evidence, findings and applicability.

Influence of Evidence on Intervention

Due to the nature of these investigations, meta-analyses, random control trials and experimental evidence are not available. Considering the dearth of research in this area there are few higher evidence studies or reliably accepted tools for measurement and evaluation.

Individual rapid critical analysis checklists for quasi-experimental studies, cohort studies, descriptive studies, and qualitative studies were reviewed, and ten articles were chosen (Melnyk & Fineout-Overholt, 2019). Narrative information and themes are important to this research, so one longitudinal qualitative study (Appendix B) was included as well as one mixed-method study (Appendix C). The remaining eight studies were quantitative (Appendix A). These included two quasi-experimental studies and six retrospective, descriptive studies. The level of evidence ranged from III to VI.

All studies included concepts related to cultural competence, the patient-provider relationship and minority stress. Three studies examined LGBTQ+ patients' experiences with

health care and HCPs; five studies focused on self-assessed knowledge and overall attitude of HCPs; two studies surveyed and compared healthcare students. Most of the studies used Likert scale surveys to test knowledge; however, some of the more validated tools used were the Gay Affirmative Practice (GAP) scale, the Mayer Scale of Anticipated, Internalized, and Enacted Stigma, the ALLY Identity Measure (AIM) and the LGBTQ Healthcare Scale. Use of valid tests and reliable scales that have been applied in previous studies is important to not only the strength of individual study findings, but overall contribution to research.

Two quasi-experimental studies with a test-retest design were focused on health care providers. The results overwhelmingly showed that after educational workshops, provider knowledge and cultural competence improved. The studies that explored LGBTQ+ patient experiences in healthcare, showed that providers who had either formal training or offered more knowledge and culturally competent care, lead to better patient outcomes in SOGI disclosure, health care compliance, and improved physical and mental health even after trauma. Subjects' results that illustrated lack of HCPs knowledge were correlated with negative attitudes and decrease in competent provider care and skills. Qualitative findings found themes of verbal and nonverbal microaggression, micro insults, heteronormative assumptions, and failure to assess SOGI.

After initial literature review, search methods were repeated at intervals of three, six- and nine-months during project implementation for updates, revisions and publication information for "advance online" articles. Ten more articles were evaluated and two were added to the literature review. These included one level IV quantitative, descriptive study supporting the importance of the patient-provider relationship and the positive outcomes associated with trauma-informed care (Antebi-Gruszka & Scheer, 2021).

An additional level III quantitative study was added that explored HCPs attitudes toward IPV before and after hearing firsthand narratives of IPV survivors' experiences (Nicolaidis et al., 2005). Although this study is older, it is cogent to the project intervention and is considered an important contribution to IPV education for HCPs. This study also served to psychometrically test and prove the Attitude Toward Survivors of IPV Survey (ATSI) (Nicolaidis et al., 2005).

Public health organizations and judicial systems confirm that LGBTQ+ IPV is a health concern that has gone unrecognized. Without establishing a trusting, reciprocal relationship with a healthcare provider, it is unlikely that an LGBTQ+ patient will seek help for IPV, even though they are likely to have opportunity.

Screening for IPV as an HCP can be difficult. Even when there are signs, it is a difficult conversation to initiate within the time constraints of an office visit. From the patient's perspective, disclosing sexual and gender identity minority status to a provider is unnerving, stressful and may even prevent routine health care. No one should have to fear shame or retribution from their health care provider when they are victims of abuse; health care providers who want to offer care should have the tools to do so. As a potential help-giving resource and the individuals that hold the power and access, it is important that HCPs take responsibility for gathering and implementing skills to effectively address LGBTQ+ intimate partner violence.

Theoretical Framework

Many of the accepted conceptual frameworks supporting the study of IPV are based in studies of females as victim such as Feminist Theory and Power Theory based on gender inequality, which do not apply in sexual minority populations (Burelomova et al., 2018) Theoretical frameworks for studying IPV suggest a contextual approach.

Research that examines this phenomenon is sparse. Therefore, two theories have been incorporated to build a theoretical framework that considers the cumulative outcome of the provider-patient interaction and patient perception of stigma or stress that may contribute to a decreased likelihood of help-seeking.

Cox's Interaction Model of Health Care Behavior (Appendix E, Figure 1) has been used in studies examining aspects of intimate partner violence and was designed specifically for patient relationship building in advanced practice nursing (Cox, 1982; Mathews et al., 2008; Levinson et al., 2016). The conceptual model includes respect and acknowledgement of the client's background, and multiple variables of thought processes, intrinsic motivation, social support, experiences and psychosocial factors. Cox calls this aspect "singularity".

Cox's model focuses on the client and healthcare professional interaction, exchange of health information, affective support and response, and shared decision-making. The theory posits these factors contribute to intrinsic motivation for the client that led to positive responses (Cox, 1982). Singularity or recognition of individuality for the client, professional competencies, and complete health information result in appropriate utilization of health care services and improved health outcomes. This model relies on reciprocity established in a trusting patient-provider relationship to increase the likelihood of positive health care behaviors (Cox, 1982).

Minority stress has been shown to contribute to barrier's to accessing health services in sexual minorities (Cronin et al., 2020). Researchers found that situations involving social evaluation for sexual minorities led to a significant increase in biophysiological indicators of stress including hypothalamic-pituitary-adrenal axis dysfunction and epigenetic changes (Flentje et al., 2020).

The Minority Stress Theory (Appendix E, Figure 2) identifies this psycho-physical stress through three concepts, internalized stigma, stigma consciousness, and lived discrimination (Meyer,2003). These are further classified as "proximal stigma" or "distal stigma"; proximal meaning the patient's internalized experience, and distal meaning their perceived stigma from health care providers. Internalized stigma might also be identified as increased stigma consciousness or hypervigilance to perceived stigma (Meyer, 2003).

Although LGBTQ+ patients do seek healthcare, they still have higher rates of poor outcomes (Cronin et al., 2020). Disclosure of SOGI during healthcare interaction can be a significant source of minority stress and often leads to failure to disclose. Failure to disclose SOGI is a public health concern as it has been directly associated with lack of proper healthcare utilization and poor outcomes for LGBTQ+ populations (Cronin et al., 2020).

The use of Cox's Interaction Model of Health Care Behavior can potentially improve the patient-provider relationship by improving knowledge and attitude, leading to a decrease in perceived stigma for the patient. Reduction of the power of minority stress may increase SOGI disclosure and lay the foundation for effective screening for intimate partner violence.

To put it simply – to be gay sometimes means daily episodes of "coming out" to people one does not know – the plumber, the new neighbors, the healthcare provider. For an LGBTQ+ patient, uncertainty about how a provider's background, attitude or beliefs might influence their reaction and quality of treatment is very real concern and can be stressful enough to prevent interaction and help seeking. It is the responsibility of the provider to reduce that stress by creating a safe space and trusting relationships through professional and competent care.

Implementation Framework

The implementation framework for this project will be the ACE Star Model of Knowledge Transformation (Appendix E, Figure 3), (Stevens, 2004). The principle of this evidence-based implementation framework is that new knowledge may change preconceived beliefs through analysis and reflection. The steps of the ACE Model are discovery, summary, translation, implementation, and evaluation (Stevens, 2004).

The discovery phase includes ongoing research throughout the project's timeline. The review of literature analyzes and summarizes discovery. The translation phase will include the development of the educational intervention that will integrate new ideas into practice. Short-term project evaluation will include pre and post-test analysis for improvement. However, long-term goals are implementation into standard practice with a change in guidelines and evaluation of improved outcomes in the health and safety of LGBTQ+ populations.

Evaluation Questions

Will an educational intervention for HCP's regarding LGBTQ + IPV:

- increase perceived knowledge and preparation,
- improve knowledge, clinical competency and attitudes that support LGBTQ+ patients,
- increase likelihood to assess SOGI, and
- improve readiness to screen for LGBTQ+ IPV?

Methodology

Research supports that HCPs with higher levels of knowledge and competence are more prepared for, and comfortable with all aspects of care for LGBTQ+ patients. A beneficial intervention would include LGBTQ+ specific education for health care providers that incorporates use of appropriate terminology, scripts, and behavioral coaching as well as specific information regarding LGBTQ+ IPV. Testing for attitude, knowledge, comfort, and readiness in

a test-retest methodology has the potential to show significant improvement in knowledge, competence and attitude, thereby increasing comfort and readiness. Therefore, overall project design includes two phases- a data gathering phase with survivors and a test-posttest education intervention for providers.

Implications for Practice Change

Through inductive reasoning, supported by the theoretical framework and framed in the context and structure of the quality improvement process, this intervention seeks to encourage help-seeking behavior for LGBTQ+ victims of IPV through positive, supportive, and affirming interactions with informed healthcare providers. Based on both Cox's Model of Healthcare Interaction and the Minority Stress Theory, this improvement in provider preparation would increase affective support, improve rates of SOGI disclosure and increase provider knowledge of unique aspects that contribute to LGBTQ+ IPV. The objective is to increase screening, by providing tools for appropriate communication to ensure comfort and readiness, ultimately leading to effective interventions, decreasing the likelihood of repeated episodes of IPV and the overall incidence of IPV in LGBTQ+ populations.

Help-seeking behavior is decreased among these patients due to theoretical concepts related to interactions with health care providers and minority stress. Research supports educational interventions improve attitude, knowledge, and competence in providing healthcare for LGBTQ+ populations as well as for IPV. Assessing these in a pre and posttest format centered around LGBTQ+ IPV specific education may show significant improvement in overall readiness, attitude, and lead to increase in screening for LGBTQ+ IPV.

Population and Setting

There is an established DV center in Phoenix, Arizona that provides resources, services, and counseling to the metro area as well as the rest of the state. It is staffed by 30 employees along with volunteers and a volunteer governing board and provides resources and services for survivors and their families from all over Arizona. Stakeholders include the staff, board, volunteers of the center, and the community they serve.

Direct stakeholders for this project are LGBTQ+ IPV survivors, their support systems including close family and friends, children, extended family members who have provided support, employers and even their partners who may be IPV perpetrators. Along with the critically analyzed research, input feedback and the experiences of these survivors guide the principles for this project.

This center has a subcommittee for sexual and gender minority victims of IPV and along with the Office of Survivor Engagement and the Systems Change Specialist are also stakeholders as this intervention will help to inform response and increase timely and meaningful interventions. Their input, guidance and assistance will inform this project.

Health care providers are key stakeholders as their implementation of the education practices will ultimately be the impetus for change and can improve their patient interactions. Ancillary clinical support staff in all levels of practice are other stakeholders and can have valuable input. Other support includes social workers and law enforcement who may potentially benefit from safer and stronger work forces with more clear guidelines, protocols and collaboration. Administrators, public health organizations and health insurance companies also might have a vested interest in collaboration.

Arizona State University (ASU), the affiliated educational institution, along with the Edson College of Nursing and Health Innovation and nursing professors are also stakeholders

and have resources to facilitate Institutional Review Board application, increase contacts, improve communication and assist in information dissemination. Nurse practitioners and NP students are the primary study subjects and are also stakeholders along with their future patients who may benefit from their knowledge.

Ethical Considerations

Arizona State University granted initial expedited Institutional Review Board (IRB) permission on September 22, 2022. For phase I, recruitment of LGBTQ+ IPV survivors was initiated through the site partner and private social media groups with an incentive offer of $25 gift cards for participation. Participants were instructed to email the student investigator to pre-register for private, password-protected ZOOM sessions.

The student investigator attended required Arizona state domestic and sexual violence training and became certified to facilitate survivor engagement sessions. Detailed consents were obtained at the time of registration that listed the purpose of the project, risk and benefits of participation, hotline numbers for domestic violence, and a testament that each participant was over 18 and not currently in crisis.

Survivors were anonymous, and any identifying information was redacted from their stories. Their experiences were recorded and transcribed. Only the written transcription was stored on a password protected jump drive. Audio and video of the sessions was destroyed.

Participants in Phase II – the educational intervention was also anonymous and responses were tracked through randomly selected numbers. A consent to participate was the first step in the online intervention; access to the pretest surveys was only given once the participant consented to participate.

Participants

Phase I interview participants were self-identified members of the LGBTQ+ community, over 18, with lifetime experiences of intimate partner violence. Those with experiences of stranger violence were not included in information gathering. Summarized stories were retold in narrative voice by the author. Given the current online format due to the ongoing pandemic, it was impossible to have in-person meetings.

Phase II focused on NP and NP students recruited through social media groups and random selection from the Arizona Board of Nursing postal mailing address list. It was expected that recruitment of NPs and NP students would be a barrier; a $5 gift incentive was offered for completion. Other barriers included performing an adequate needs assessment from the patient perspective, while effectively obtaining IRB, and facilitating informal, but meaningful sessions with survivors without pre-existing rapport.

Nurse practitioners were targeted for this project specifically for increased recruitment opportunities and because of their unique position in emerging healthcare. Additionally, few of the evidential studies that served as the basis for the intervention focused on NPs; they instead chose physicians, dentists, registered nurses, and students from healthcare professions.

Instrumentation and Data Collection

Demographics for HCPs included age, years of education, HCP role and specialty, personal SOGI status and practice specialty. Subjects were asked if they had any close family members or friends who identify as “something other than heterosexual” and “a gender other than that assigned at birth. Current SOGI and IPV screening practices were self-reported.

Assessment data was collected though the administration of the Physician Readiness to Manage Intimate Partner Violence Survey (PREMIS) (Short et al., 2006). This tool has been used in multiple populations and consists of primarily five- and seven-point Likert scale testing,

with self-assessed categories of perceived preparation and knowledge, attitude and current practice.

The PREMIS scale has proven to be valid and reliable with a toolkit for modifications for different populations and cultures. Short et al.(2006), state that while specific indicators may not be changed or added, omission of irrelevant indicators is acceptable. Additionally, the demographic portion may be adapted appropriately. Review for construct validity of any items is suggested. Site partners and survivors from Phase I provided review and feedback. The tool was updated to include language inclusive of nongender-conforming,

Items are individually scored and tested for reliability and validity an any omission of any items should correlate with omission of scoring of that section. Researcher's reported good reliability for the perceived knowledge scale (α=0.963) and assert that it may be used to assess readiness across various fields if modified for cultural considerations. PREMIS also showed good internal consistency between correlates; in the final evaluation actual knowledge correlated with perceived knowledge (R = 0.201, p= 0.012.) Self-assessed knowledge was predictive of clinical practice and screening. Test-retest results supported reliability between various health care providers. Further validity and reliability were established based on theoretical backgrounds of the generalizability of self-administered surveys using Likert scales (Short et al., 2006).

The complete 61- questions PREMIS was administered to participants along with LGBTQ+ adapted sections for "perceived preparation" and "perceived knowledge" (20 questions). As per the tool's developers, no items were changed. Although the tool allowed omission of inapplicable items, all items for the two adapted sections were included. Participants were instructed to answer the questions regarding their preparation and knowledge in the care of LGBTQ+ populations experiencing intimate partner violence; there was also a section that

instructed them to answer the same questions in reference to “general populations” or “non LGBTQ+”.

The Lesbian, Gay, Bisexual and Transgender Development of Clinical Skills Scale (LGBT-DOCSS) was developed by researchers to be an inclusive tool to increase clinical competence for sexual minority populations. Notably, this is the first scale to include transgender populations (Bidell, 2017). The LGBT-DOCSS scale was developed over three separate studies based on exploratory factor analysis and convergent reliability and was evaluated for construct validity based on subjects’ criterion during pilot testing and compared to results of four other surveys on content to assure test-retest reliability. Overall internal consistency was established α=0.86. A third study was performed to measure against four previous scales for test-retest reliability. The final version is an 18-question survey with a seven-point Likert scale and is shown to effectively measure three subscales including clinical preparedness (α=.88), attitudinal awareness (α=.80) and basic knowledge (α=.83) (Bidell, 2017). Both published tools include coding for interpretation and categorization of results.

An additional 10-item general knowledge of LGBTQ+ IPV was also administered for pretesting. This tool was designed with information gathered from research and was reviewed by the subjects of Phase I for feedback and face validity.

Postintervention assessments included the LGBTQ+ modified PREMIS sections only - “perceived preparation” and “perceived knowledge”. Participants were again instructed to assess these domains in the care of LGBTQ+ populations only. The LGBT-DOCSS scale was re-administered post-intervention in its entirety. A short self-evaluation of predicted practice change was also included that assessed screening for SOGI and LGBTQ+ IPV. The 10-item basic knowledge of LGBTQ+ IPV was also retested.

Budget

Although several grant applications specific to this issue were submitted, none were awarded. Budgeting costs were offset somewhat by use of research tools provided by Arizona State University including *Qualtrics* Software and Google website hosting space. To complete the production of video a discounted education account was purchased through *Powtoons* software for online education.

The low direct costs of this project intervention for the student, as well as the potential minimal indirect costs for providers to participate and implement screening in practice, make the utility of this intervention beneficial for the target population. Most costs will be incurred with offerings of incentives and stamped mailing of recruitment postcards for nurse practitioner participants. Complete budget details are included in Appendix F.

Intervention & Timeline

Phase I

Data gathering through qualitative interviews with LGBTQ+ IPV survivors (*n*=3) took place over a six-week period in October and November 2021. Initial plans were to conduct group sessions; however low response rate necessitated adapting sessions to 1 to 2 hour 1:1 session. These interviews were conducted to develop a survivor-informed educational intervention, incorporating the true stories of survivors to maintain a patient-centered focus for the intervention. Due to the ongoing pandemic, it was impossible to have in-person meetings.

Nicolaidis et al. (2005) established the importance of storytelling in increasing HCP screening for IPV with the educational intervention “Voices of Survivors”. This work was also used to develop the Attitudes Toward Survivors of Intimate Partner Violence scale that assesses HCPs empathy, knowledge and attitudes regarding IPV (Nicolaidis et al., 2005). Although this

documentary is nearly 20 years old, it continues to be successful in educating HCPs as a training resource for the national anti-domestic violence organization Futures Without Violence ((Nicolaidis et al., 2005).

During these interviews, survivors were asked to share their experiences along with any good or bad interactions with HCPs around their experiences with IPV. Survivors participating in these sessions reported unexpected benefits of growth and realization through self-reflection and satisfaction in helping the education of HCPs by sharing their stories. The sessions were audio and video recorded and then transcribed. As planned, all video and audio were deleted, and transcribed sessions stored on password-protected files.

Survivors' stories were narrated by the student investigator in a powerful 17-minute video dramatization using voice alteration software and stock images. Arizona LGBTQ+ IPV statistics and gender-neutral screening tools were also discussed (Phelps-Byam, 2021). The Phase I period included ongoing preparation of an online educational intervention to be released upon IRB approval for modifications submitted for Phase II. The video was resubmitted to ASU Research for IRB modification and received approval on December 7, 2022.

Phase II

An online educational intervention was designed for NPs and NP students with a pre and posttest format. In addition to the narrated survivor's stories, the educational intervention included the 45-minute webinar from the National LGBTQIA+ Health Education Center at the Fenway Institute of Boston. Fenway is considered a leader in LGBTQ+ health and the webinar was eligible for free continuing education credit for physicians, NPs and registered nurses. The webinar covered differences in heteronormative and LGBT intimate partner violence, methods to assess and screen, and resources for intervention (Xavier, 2017).

Education included terminology, best practices for screening; and the use of a non-gender specific, inclusive IPV screening tool. The intervention was an asynchronous, online presentation requiring an estimated 1.5 hours to complete. The education portion was approximately 60-70 minutes. Demographics and pre and post assessment surveys required a total of 20-30 minutes to complete.

The Arizona Board of Nursing address list was obtained for targeted recruitment. All active clinical NPs (*N*=10,728) were exported to an *EXCEL* spreadsheet numbered in alphabetical order. Random numerical software was used to choose 500 names. Recruitment postcards were mailed out via US Postal Service to the 500 names immediately after IRB modification approval was granted on December 7, 2021. Allowing one week for mail delivery, data collection lasted six weeks and ended on January 26, 2022. Recruitment details were also posted on vetted nurse practitioner social media groups. Postcard and online information clearly stated the last day to complete the online educational experience and surveys.

The postcards gave general information about the project along with time requirements. A unique link directed participants to the online site host. Before the surveys could be accessed, an online consent requiring a "yes" answer was auto populated. If the participant responded "no", they were not allowed to proceed.

Once the preassessment survey was accessed, participants were asked to identify themselves with their own randomly selected five-digit number to be entered at the beginning of each survey. Two participants randomly chose the same consecutive order number set and were differentiated by time stamp. The post-test survey also required the 5-digit number as identification and asked a random question regarding the educational intervention to ensure the participant had viewed the videos.

A $5 gift card incentive was offered and required the 5-digit number to obtain access; however only three respondents opted for the incentive. *Qualtrics Incentives* survey was used to gather email addresses that were deleted after the reward was claimed.

The complete timeline from initial IRB submission to the end of data collection in Phase II was four months- September 22, 2021, to January 26, 2022. At this point, surveys were closed, and data were downloaded for analysis.

Data Analysis Outcome Measures

The primary outcome measures were statistically significant *(p* <.05) improvement in the LGBTQ+-adapted "perceived preparation" and "perceived knowledge" scales as measured by PREMIS. A statistically significant *(p* <.05) increase in LGBT-DOCSS scores was also an expected outcome.

Surveys were collected via *Qualtrics* and downloaded to *Excel*. Groups of data were then separated, their means calculated and uploaded to *Intellectus* software for statistical testing. Data were stored on a flash drive with copies of all references as well as the final manuscript. Data and results will be shared with instrument authors if requested. All files will be destroyed at the culmination of the degree program or the end of 2022.

Results

Participants included master's prepared nurse practitioners (*n*=6), with a range of 1 to 26 years of experience in practice areas including: family practice (*n*=2), urgent care (*n*=1), psychiatry (*n*=1), clinical research (*n*=1) and gastroenterology (*n*=1). All participants (*n*=6) reported having at least one close family member or friend who identified as "something other than heterosexual"; two (*n*=2) participants reported having a close family member or friend who

identified as “a gender other than the one assigned at birth”. The participant pool was 83.3% female (*n*=5).

Pretest surveys were completed by eight participants; however only six posttest surveys were completed in their entirety. Results from respondents without post-test surveys were discarded and were not used in any pretest/post-test statistical comparison or for descriptive data.

Preliminary plans including analyzing demographics for any correlations with responses. However, the small sample size was insufficient to establish any significant trends. Additionally, methodology initially included NP students. Recruitment information was posted to NP student social media groups; however, no students participated.

The PREMIS was completed in its entirety for preassessment with initial instructions to answer questions as applicable to non-LGBTQ+ or “general patient populations”. Next, pretests included an LGBTQ+ adaptation for only the two PREMIS domains of “perceived knowledge” and “perceived preparation”. No Likert items were changed, preserving established testing strengths, however participants were instructed to apply the self-assessment to only LGBTQ+ patients as opposed to “general patient populations”.

The LGBT-DOCSS was completed in its entirety for pre and post assessments. An additional 10-point basic knowledge test was also administered pre and post testing. Current screening practices were assessed for pretesting. Posttest assessment of screening practices called for a reflection of self-assessed reflection of training and likelihood to screen in practice. The LGBTQ+ adapted PREMIS domains “perceived preparation” and “perceived knowledge” were repeated for post-testing.

Pre and post results for the LGBTQ+-adapted domains of PREMIS as shown in Table 1, were statistically significant in two-tailed *t*-tests demonstrating improved overall readiness to

screen for IPV as indicated by perceived preparation *(M*:3.24,*SD:*1.62;*M*:5.07,*SD* 0.79; *t*= -3.85 (5), *p* = .012, *d* = 1.57) and perceived knowledge *(M*:3.79,*SD:*1.53;*M*:5.90,*SD*1.07; *t*= -4.53 (5), *p* = .006, *d* = 1.85).

As seen in Table 2, the two-tailed Wilcoxon's signed rank test showed statistically significant improvement for the overall LGBT-DOCSS (*V* = 0.00, *z* = -2.20 *p* = .028; *Mdn* = 4.61, *Mdn* = 6.56). Domain scores for knowledge were also statistically significant in paired two-tailed *t* tests (*M*:4.33,*SD:* .75; *M*:6.54, *SD*= .51; *t*= -5.52 (5), *p* = .003, *d* = 2.25) as illustrated in Table 3.

Although results showed mean score increases, the LGBT-DOCSS domain scores for "attitude" and "clinical preparedness" were not statistically significant as represented in Table 4. There were also mean increases in likelihood to assess SOGI and screen for IPV (*M*=3.5,4.5; *p*=.0225); however, the increased scores were not sufficient to establish statistical significance. Pretest data for general populations and LGBTQ+ populations were compared in the two tested PREMIS domains. Results were not significant for either perceived preparation, (*t*(5)= -1.64, *p*=.162, *d*= 0.67), or perceived knowledge (*t*(5)= 0.62, *p*=.162, *d* = 0.25).

All NP participants admitted little to training in LGBT healthcare or assessing SOGI. They also reported no knowledge about LGBTQ+ IPV and scored below 60% on a true/false and multiple-choice pre-test regarding myths of IPV in sexual and gender minorities; post test scores improved to 90%.

Table 1

PREMIS Perceived Preparation and Perceived Knowledge

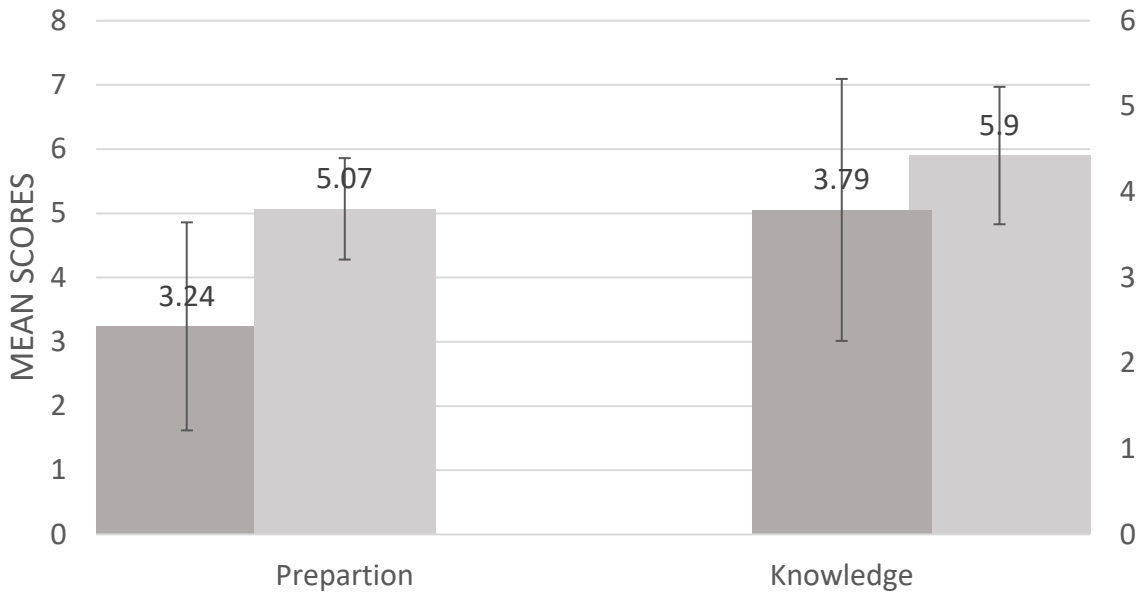


Table 2

LGBT-DOCSS Overall

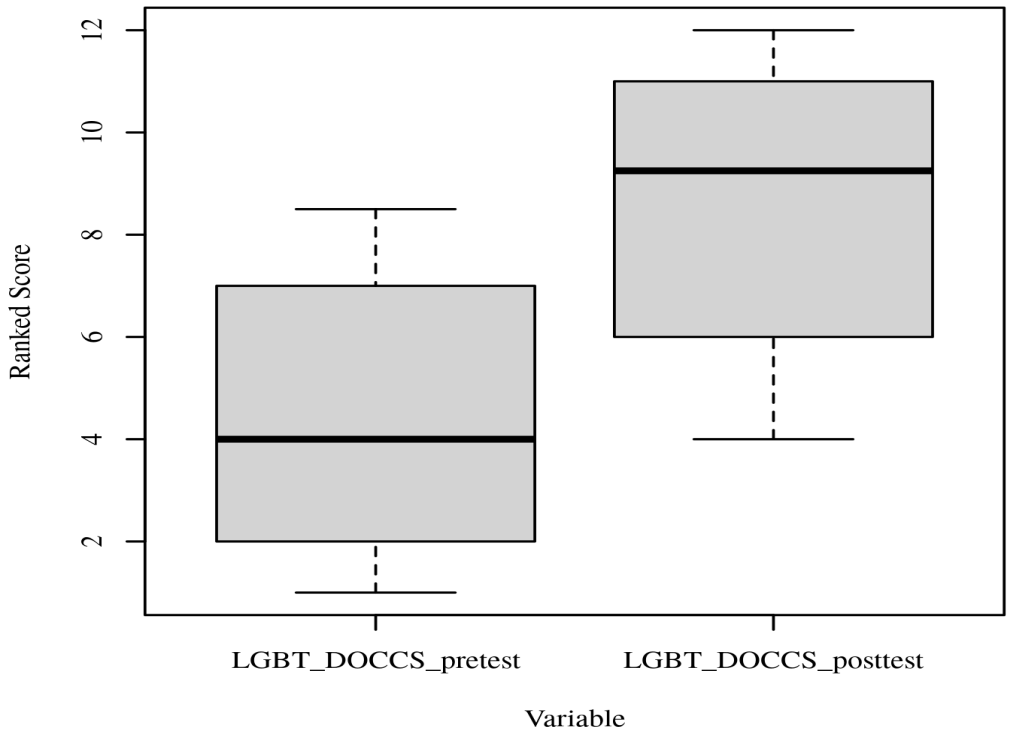


Table 3

LGBT- DOCSS - Knowledge Domain

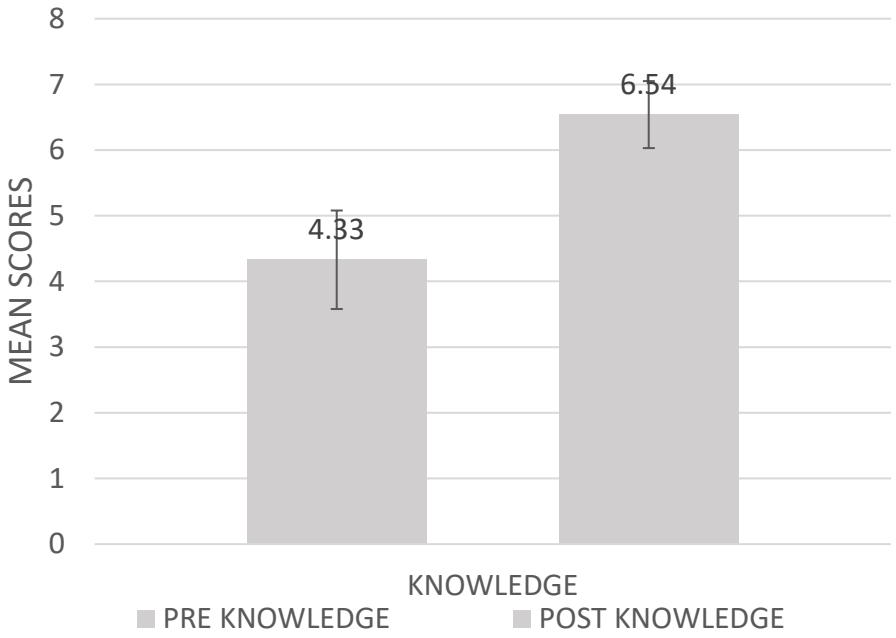
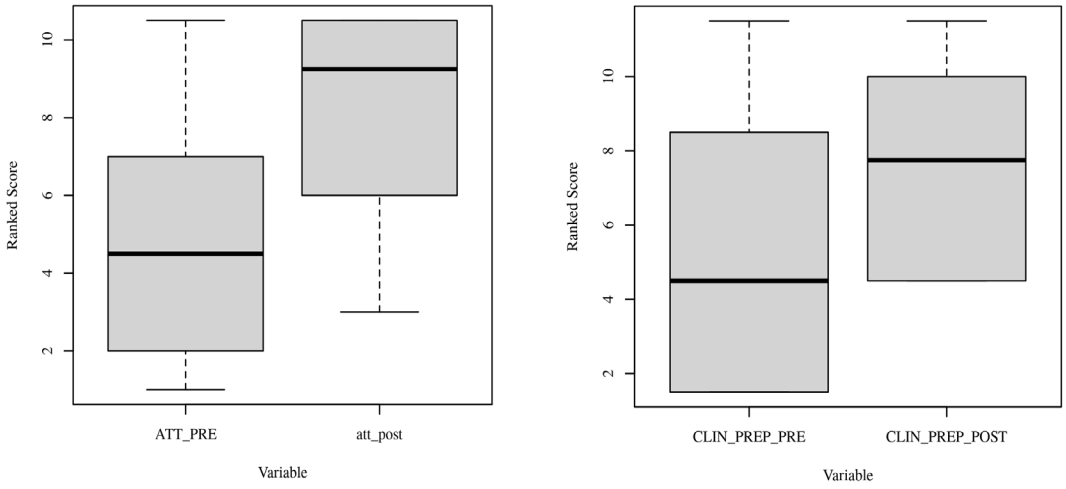


Table 4

LGBT-DOCSS Domains: Attitude and Clinical Preparation



Note: Attitude: $V = 3.00$, $z = -1.21$, $p = .225$; ($Mdn = 5.57$); ($Mdn = 6.93$)

Clinical Preparation: $V = 6.00$, $z = -0.94$, $p = .345$; ($Mdn = 3.71$); ($Mdn = 5.86$)

Discussion

Through the lens of Cox's Theory of Interaction, increased knowledge, competence and attitude may improve patient-provider interactions. In accordance with the theory of Minority Stress, this potentially decreases perceived and anticipated stigma for the LGBTQ+ patient who will theoretically be more likely to see the HCP as a trusted source for help when faced with IPV.

Three of the four initial evaluation questions were answered affirmatively that an educational intervention for HCPs do (1) increase self-perceived knowledge and perceived preparation; (2) improve actual knowledge, clinical competency and attitudes that support LGBTQ+ patients; and (3) improve readiness to screen for LGBTQ+ IPV. Results for PREMIS in the domains of perceived knowledge and perceived preparation, the overall LGBT-DOCSS and the knowledge domain of the LGBT-DOCSS were statistically significant. This indicates improvement in overall LGBTQ+ healthcare and readiness to screen for LGBTQ+ IPV.

The fourth evaluation question regarding likelihood to assess SOGI, revealed increased mean scores but was not statistically significant. This may be due to the either the low sample size or the lack of variance in the number of questions. However, for the small sample size (n=6), this does represent clinical significance and potential for positive changes in screening practices for SOGI and LGBTQ+ IPV.

Interestingly, when comparing pre-test perceived knowledge and perceived preparation for general populations to LGBTQ+ populations, the results were not significantly different. This finding is also clinically significant and possibly indicates a lack of general IPV knowledge across all populations.

LGBT-DOCSS domain results were analyzed and are important as attitudes and beliefs are separate but very related concepts. Even if participants initially screened for LGBTQ+ bias, education did improve their attitude and willingness to assess SOGI, screen for IPV, and provide appropriate care. This is relevant in educating individual practitioners who may be challenged with religious or personal beliefs that affect their attitude or practice with LGBTQ+ populations. The LGBT-DOCSS domain of clinical preparedness also indicates clinically significant improvements. Overall results illustrate the idea of transformational knowledge and further validates the incorporation of the ACE Star Model of Knowledge Transformation as the basis for integrating appropriate LGBTQ+ healthcare and screening for IPV into standard practice.

Impact

For many in healthcare, this problem is unknown and may be unexpected. The initial impact will not be a massive change in screening on a national or even state level. However, the introduction of the topic in relation to current events and populations along with sharing of resources will increase discussion about IPV in LGBTQ+ populations, will increase awareness for those who participated, and will increase education and screening for all populations. It is the hope that this will increase help-seeking behaviors for victims of LGBTQ+ IPV through establishment of trusting relationships with healthcare providers. By modeling appropriate interactions, other professions including hospital staff, social workers and even law enforcement will be positively influenced and gain valuable skills in not only navigating LGBTQ+ IPV, but in providing help to victims.

Although they report that their research indicated no need for an official recommendation, the US Preventive Task Force might consider updating their guidelines to include domestic violence screening for all populations based on the generally accepted

knowledge that intimate partner violence is under reported (USPTF, 2018). Rates are likely to be much higher in all populations compared to the present, available data.

Sustainability

The videos produced for this project will remain online indefinitely. Resources were introduced through this project that will increase dissemination of information. True sustainability will occur when LGBTQ+ healthcare and IPV education are fully integrated into medical and nursing knowledge. This should occur with formal education and continue into onboarding for employment and annual competency training until it becomes standard practice in healthcare.

It is both ethical and economically feasible for LGBTQ+ healthcare and LGBTQ+ IPV specific education to be officially added to nursing and medical curricula. Additionally, organizational in-services and learning modules can be accessed from multiple free resources like the Fenway Institute.

Electronic health records have the capability to add SOGI information and since 2015, the Centers for Medicare and Medicaid Services has identified this input as part of "meaningful use" or "interoperability" (Centers for Medicare and Medicaid Services, 2022*).* Data gathering is yet another of the multiple LGBTQ+ focused objectives for Healthy People 2030 (ODPHP, 2021c).

Limitations

Covid presented many challenges to implementing this project. Although designing a web-based educational intervention appeared to be an opportunity to increase recruitment, in-person interventions may have encouraged more NP participation. Considering the number of postcards that were mailed, the low response rates for this project were disappointing. The

PREMIS tool was lengthy and may have contributed to lower participation. Some participants may have viewed the education and applied for the free continuing education credits without follow-up with posttest surveys. To maintain anonymity, no video was tracked.

Questions regarding current screening practices for SOGI and IPV compared to a self-assessed reflection on future screening could have been improved with either more in-depth questions or a delayed post assessment. The lack of statistical significance may be due to the either the low sample size or decreased variance in number of questions.

Potentially administering post-test assessments at an interval of two to six months after the intervention may have presented more opportunities to observe statistically significant improvement in screening practices for SOGI and IPV. Posttest clinical practice could have been more thoroughly assessed to obtain significance. The immediate retest following the intervention did not allow providers time to implement and evaluate practice changes.

A longer educational intervention and delayed post testing may have also shown more improvements in both attitude and clinical preparation for the LGBT-DOCSS. In much of the evidential research, educational interventions lasted between two and four hours and included six weeks to six months between intervention and post assessment. Due to the curricular constraints of the doctoral program, extended time periods were not possible. Also, time may have increased posttest attrition rates and led to less data. With already limited participation, a longer online module would have likely produced an even smaller sample size.

Although no indicators were changed, and researchers report that the PREMIS may be adapted for patient populations without affecting established validity and reliability, results may not truly translate to assessment regarding LGBTQ+ IPV. Therefore, the outcomes for perceived knowledge and perceived preparation may be questioned.

Future Implications

Results from this project are certainly in line with outcomes from similar educational interventions regarding LGBTQ+ IPV including positive changes to attitude, knowledge, competency and likelihood to screen resulting from education. There is still limited data on LGBTQ+ populations. In addition to improving delivery of healthcare, similar interventions and epidemiological research is needed to address many issues to support health, safety and wellness for LGBTQ+ populations.

More education across all populations is required for healthcare providers regarding IPV and improved and inclusive collaboration is needed between government health policy, healthcare organizations and domestic violence agencies. Further, screening tools for IPV have largely been tested in populations of cisgender, heterosexual females. More testing and development of non-gender-specific or nonheteronormative-assuming screening tools is necessary to determine true effectiveness.

Representation matters. Unfortunately, LGBTQ+ IPV is underrepresented in data on all levels including intimate partner violence. Further large scale, population research in government and healthcare organizations is essential to address issues in LGBTQ+ populations and provide adequate resources and services.

For healthcare providers, it is important to realize how competent and supportive interactions can decrease minority stress and increase help-seeking behaviors for LGBTQ+ patients experiencing intimate partner violence. Without initiating conversations about sexual orientation and gender identity, intimate partner violence may never get addressed.

You will not know if you do not ask.

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Appendix A:
Quantitative Studies

Citation Country Funding/Bias	Theory Conceptual Framework	Design Method Purpose	Sample Setting	Major Variables & Definitions	Tool	Data	Findings	Decision for Use
Antebi- Gruszka, N. & Scheer, J.R. (2021). **Country:** USA **Funding:** LGBT Dissertation Grant of the American Psychological Association & Boston College Lynch School of Education Doctoral Dissertation Fellowship in support of Jillian Scheer. National Institute of Mental Health at the National Institutes of health in support of Jillian Scheer funded manuscript preparation (Grant T32MH020031 20). Authors declare no competing financial interests. Potential bias with funded grant	Trauma Theory Minority Stress Theory	**Design: NE, RETRO, CoR,** **Purpose:** To determine which specific TIC components contribute to self-reporting behaviors and improved health for LGBTQ+ survivors of IPV	***N***= 298 Self-identified LGBTQ IPV survivors, seeking IPV services within last year>18 yo Recruited via online groups and listservs	**IV**= **TIC** = perception of receiving trauma informed care by the patient; *Intimate Partner Violence Help seeking* – self report of accessing housing, support services or mental or medical health care for IPV. **DV**: Health and psychosocial outcomes: Depression, **PTSD,** somatic symptoms , presence of chronic disease	Conflicts Tactics Scale Psychological maltreatment sale Identity Abuse scale **TIC** scale IPV services accessed **PHQ-9** **PTSD** Checklist – Civilian version	Pearson's ***r;*** multivariate regression; Canonical correlation analysis TIC components: health and psychosocial outcome	**CC**: **IV**: Fostering agency & mutual respect (-0.77) **DV**: Empowerment (-0.83);	**LOE**: IV **Strengths:** Large sample size, multi-variate assessments for physical and mental health **Limitations:** Snowball sampling, Self-reporting without corroborated data from **HCP**, **PTSD** checklist for DSM-5 has higher specificity and sensitivity **Feasibility/Applicability:** Fostering client's self-determination and agency, with mutual respect and judgment free have positive effects on patients' empowerment. This should be inherent in any interaction with **HCP**s.

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Bristol, et al., (2018) **Country :** USA **Funding**: not specified, but took place at Mercy Med Center Baltimore, MD and all researchers were employed there	Trans-cultural Healthcare Cultural Competence & confidence	**QE;** **T/RT** **Purpose:** To determine if an **LGBTQ+** education intervention with improve **HCPs** knowledge, skills, attitude, openness and support.	***N*=**135 ***n*=**81 Completed online, all ER staff included Samples size of 95 ore-intervention dropped to 40 post intervention; **Fe** =79.3%, 18-50 y/o= **C**=72.6%	**IV –** Educational intervention **DV1-** knowledge and skills **DV2-** Oppression and awareness **DV3-** Openness and Support **DV** all defined operationally through **AIM** scores	**AIM** index **α**= 0.76--0.88). **AIM** tested post intervention **α**= 0.90	Chi Square Fisher's exact reported as **AIM index** Independent sample ***t*** tests for **AIM** Cohens' ***d*** for **AIM** Multivariate ordinary least squares	Demo- gender only significant variable (***p*=**0.038) **DV1** 14.9% increase (***P*=**<0.001 in both models). **DV2** 6.5% increase in both models (***P*=**0.010) and unadjusted ***P*** =0.005) **DV3** increased 4.9% but was not significant	**LOE:** IV **Reason for Inclusion: LGBTQ+** education intervention for **HCP's** significantly improved knowledge, skills, attitude, openness and support; demonstrated by ↑ **AIM.** **Strengths:** Use of established tool with proven reliability; pre-survey data showed 85.3% had no specific **LGBTQ+** training, **AIM** scores for knowledge and skills showed significant increase. Staff reported increase in comfort in caring for **LGBTQ+** patients and assessing **SOGI** **Weaknesses :** **-**Convenience sample -Single metro ER, no physicians, primarily female, nurse participants ↓ generalizability **Feasibility :** 2-hour workshop could be easily replicated in online format; benefits patient outcomes.

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Green, et al. (2018) **Country**: USA – Wisconsin **Funding:** University of Pennsylvania School of Nursing , office of nursing research. Funders had no role in design, data collection, decision to publish or manuscript preparation BIAS: authors declared no competing interests	Cultural Competence Patient/ Provider inter personal relationship	**CrS; DE;CoH**; **RETRO** **Sampling: Conv** Online and in person surveys **Purpose:** 1) To understand and assess students' perceptions of preparedness to care for LGBTQ+ pt : 2)Explore variation across domains	US private university ***N*=1010**; HCP students at any level. **Recruited via** anonymous mail, Overall response rate = 43% **MS**= 495, **DS**=127, **RNs**=388	**IV1-** Formal training**,** **IV2 –** member of LGBTQ population **DV1-** comfort **DV2-** attitudes	12-item survey, Likert scale expert review for face and construct validity, Demographics: discipline, age, **SOGI**, race/ethnicity	Kruskal-Wallis test with **α**= 0.05, ***p***<0.05 Regressions coefficients reports as ***OR***	**IV1** **Dentist:**-least formal training (***OR*** 0.39, ***p***<0.001 -least comfort (***OR*** 0.27, ***p*<**0.001, -least interest in further training (***OR*** 0.53, ***p***<0.001). **LGBTQ** -2x more likely comfort with for LGBTQ pts (***OR*** 2.20, ***p***< 0.001 and (transgender ***OR*** 2.04, ***p***<0.001 - more likely to agree that **HCP** duty to care for LGBTQ pts(***OR*** 3.97, ***p***<0.001)	**LOE:** VI **Reason for Inclusion/ Strength:** Supports need for formal **HCP** training for **LGBTQ+** pts to increase comfort, attitudes and knowledge. **LGBTQ+** Diversity in **HCP** ↑ of care/outcomes; data shows more **LGBTQ+ HCPs** improve care for **LGBTQ+** patients **Weakness: ConvS**, those with negative attitudes likely to not participate , LGBTQ+ more likely to participate, Low response rate from dental school, Social desirability bias, Small sample size of **LGBTQ**+ respondents **Feasibility/Applicability**: Feasible to integrate formal LGBTQ+ training into nursing, medical and dental school programs.
Nama et al. (2017)	Cultural competence	**Design: CS, DE**	***N***= 671 ***n***=103	**IV:** Education	Self reported survey,	Fisher's exact – to compare	**MS**= most common source of	**LOE: VI**

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Country: Canada **Funding**: not reported **Bias:** None reported/declared	Explicit vs Implicit Bias	**Purpose:** 1)To assess if MS perceived discriminatio n of LGBTQ in their learning environment 2) Determine self-reported comfort levels in caring for LGBTQ patient	Web-based survey University of Ottawa Medical School, recruited via email; all levels; French & English; No identifying information **CisG,Hts**= 64.1% = **Fe**= 54%, **Ma**=46%, Low response rate 15.4%	**DV1:** comfort **DV2:** knowledge **DV3:** perceived bias experience by other HCPs, student **Heterosexism :** assumed opposite sex sexuality as only norm	Likert scale,	respondents **LGBTQ**: non-**LGBTQ**; Ordinal data – Likert scales, median and interquartile range (***IQR)*** Wilcoxon - Mann-Whitney survey data; Wilcoxon signed-ranked ***t*** test **LGB:TG**	anti LGBT discrimination; more positive of **LGB:TG** (**LGB** median =2, **I*QR***: 1-2 & **TG** (median = 3, ***IQR***: 2-3) **LGBT-MS** - less comfortable disclosing advocacy activity during residency application (***p***=0.007)	**Reason for inclusion:** **Strengths** Evidence of **LGBTQ+** discrimination among **MS. MS** demonstrated negative views of **TS**; **LGBTQ+ MS** did not disclose **SOGI** to classmates. **Weaknesses:** Low response rate Only one school ↑ **LGBTQ+** students Decreased generalizability Self report; **ConvS** **Feasibility** : ease of replication of questionnaire; low cost, feasible' outcomes ↑ awareness/knowledge
Nicolaidis et al., 2004 **Country**: USA **Funding**: Northwest Health Foundation grant	Empathy Respect for Autonomy	**DE; T/RT** **Purpose:** 1)To determine in an educational intervention	***N***=187 Physicians ***n***=24 NP ***n***=9 **Sampling: ConvS Recruited:** via mailed letters,	**IV**= 2 hr **WS** incorporating Documentary: "Voices of Survivors" **DV:** Empathy **DV:** Patient Autonomy	Attitudes Toward Survivors of Intimate Partner Violence	**α =** for tool reliability Pre and post test variables two tailed paired ***t***-test	**α =** 0.68 -0.92 **DV:** Empathy (***p***= .002) **DV:** Patient Autonomy (***p***<.0001)	**LOE: III** **Strengths:** Large pool of unaffiliated practices Strong statistical validation Variables analyzed by category to identify area for intervention **Weaknesses:**

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No conflicts of interest to report		for IPV incorporating survivors' narratives will improve attitudes toward IPV 2) To measure psychometric results of tool	follow up phone calls **Setting:** Unaffiliated Primacy Care Practices (***N***=92) WA,OR	**DV:** Confidence **DV:** Knowledge			**DV:** Confidence (***p***<.0001) **DV:** Knowledge (***p***<.0001)	Small sample size to establish tool validity Self report Limited number of providers Selection bias; targeted recruitment **Applicability:** Use of survivors' voices in storytelling was effective in improving variables related to HCPs attitude toward IPV
Nowaskie & Sowinski (2019). **Country**: USA **Bias***:* Authors declared there was no conflict of interest **Funding**: Indiana Univ. with distribution of survey, no other funding claimed.	Cultural Competence	**NE; DE;** **Purpose:** Explore providers attitudes, knowledge and practice regarding care of **LGBTQ**+ patients **Hypotheses:** Providers would display a deficiency of knowledge about	***N*=127** Recruited:- listservs, newsletters emails; over 4 months until 100 obtained. **Setting:** Indiana Univ. **Inclusion:** Indiana physicians **Demographics:** **Fe=**52.8%	**IV1:** specialty **IV2:** Knowledge **DV1**Attitude **DV2** Current Practice All were defined operationally by scores on surveys	**LGBTQ+** specific survey developed from multiple past projects 5 pt. Likert scale.	Fisher's exact – trends for responses and demographics Mean scores and ***SD*** used for survey results One-way Anova and Tukey's post hoc for ***M*** differences ***p***= 0.01	**+ CoR** between ↑ knowledge and + attitudes toward LGBTQ+ health (***r***=0.236, ***n*** = 127, ***p*** = 0.0007) & health needs (***r***=0.295,**n** =127, ***p***<0.001; **HCPs** negative attitudes **CoR** with **LGBTQ+** knowledge deficiencies (***p***=0.059 and ***p***=0.048) Knowledge scores were significant:	**LOE :** VI **Reason for Inclusion:** Educational intervention for **HCP**s increased knowledge of **LGBTQ+** health and improved attitudes **Strengths:** Level of significance **α**= 0.01 Anonymous respondents **Limitations:** **-ConvS** -Tool has not been validated - Sample not heterogenous, decreased generalizability **Feasibility/Applicability:** Need for more education in **LGBTQ+**

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		LGBTQ healthcare and admit a lack of cultural competence	**HtS**=90.6% **C**=73.2% **Missing data were excluded**				[***F*** (3,123) = 7.78, ***p*** < 0.001] for OB/GYN scores (***M***=65.5, ***SD*** 16.3) when compared to internal medicine (***M***=45.7,***SD***=14.5)	cultural competence, Theory based increasing positive health outcome for **LGBTQ+** patients
Parameshwaran et al., (2017). **Country:** UK **Bias**: No declarations made **Funding**: None reported	Cultural competence Diversity Education and awareness	**Design: DE** **Method:** Online Survey **Purpose**: 1)To understand the experience knowledge an attitude towards **LGBTQ+** people an health care of medical students 2)To evaluate extent that medical students felt	***N*= 938** ***n*= 188** ***n*= 166** completed anonymous survey Undergrad and graduate **MS; -** Recruited via email	**IV**: **LGBTQ+** **IV: HtS** **DV:** Self rated: Confidence Knowledge Attitude Behaviors/ Practice	66 question online survey included demographics 5 point Likert scale one to five self report rating of confidence confidence in understanding terms , behaviors, an attitudes.	Divided by course year; **LGBTQ/HtS** ; and **Ma/Fe** Independent ***t*** test and Spearman's rank for attitude: :terminology knowledge	**DV1:** LGBTQ participants had higher overall attitude scores then heterosexual students (4.44 vs 3.99, ***p*** <.00001) **DV1** + attitude associated w/ higher terminology knowledge scores (r_s = 0.5052, ***p***<.01) 50 % reported never seeing medical school professors assess **SOGI.**	**LOE :** VI **Reason for Inclusion:** Increased knowledge associated with more positive attitudes. **Strengths:** Anonymous survey Large sample size, Comparison of **LGBTQ+** and heteronormative students **Weaknesses:** **-**All respondents were from a highly selective medical school; demographically homogeneous city ;-opt in nature = positive bias; MS with pre-existing negative attitudes less likely to participate ; Self reported-may not reflect reality **Feasibility/Applicability: +** correlations between **LGBTQ+** attitudes, knowledge and practice; indicates need for more formal education in medical schools

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Citation Country Funding/Bias	Theory Conceptual Framework	Design Method Purpose	Sample Setting	Major Variables & Definitions	Tool	Data	Findings	Decision for Use
		comfortable caring for **LGBTQ+** patients						
Scheer, J. R., & Poteat, V. P. (2018). **Country** United States **Funding** LGBT Dissertation Grant of the American Psychological Association and Boston College Lynch School of Education Doctoral Dissertation Fellowship in support of Jillian Scheer. National Institute of Mental Health at the National Institutes of health in support of Jillian Scheer funded manuscript preparation (Grant 5T32MH020031-20) Potential bias related to funding, authorship.	Trauma Theory Theory of Inter-personal Relations Structural equation modeling	**Design:** **NE, RETRO, CoR,** **Purpose** To determine if a perception of receiving trauma informed care will be significantly associated with mobilizing factors; mobilizing factors will be associated with better mental and physical health.	***N***= 239 **Demo:** **CisF**:43.9% **CisM**:13.4% **TGM:**7.1% **TGw**: 5.9% **NB:** 24.7% **C:** 66.7% **MR**: 17.3% Age:18-71 **Setting** Online listservs and social media groups **Exclusion** Negative psych abuse scale, **Hts**, <18 y/o **Attrition** 19.8%	**IV1:TIC** **DV: PMHC** **DV: PPHC** **DV: EMP** **DV:ER** **Definitions** **TIC**: Culturally specific care; based on social connectedness & resilience **PMHC:** measured symptoms of depression and PTSD **PPHC:** somatic complaints**;** existence of chronic health conditions	**TIC** scale **α**= .91 **PHQ** α = .89 **PTSD** scale **α** = .89 Somatization Scale **α** = **.**83 Research specific model: Internal validity/ construct validity	Goodness of Fit: Comparative Fit Index Tucker-Lewis Index MANOVA Bivariate Analysis Pearson's correlation	Comparative Fit Index [**CI**=.90] **Tucker Lewis Index** **[CI**=.90] **TIC:PMHC:ER** .02[-.02,.06] **TIC:PMHC: EMP** -.002[-.07,.07] **TIC:PPCH:ER** .03[-.02,.09] **TIC:PPHC: EMP** -.05[-.14,.03]	**LOE: IV** **Reason for Inclusion: LGBTQ+** IPV survivors who were cared for by HCP's educated in **LGBTQ+** IPV and **TIC** reported better physical and mental health compared to those who did not receive **TIC::**↑ education for **HCPs** = improved outcomes for **LGBTQ+** IPV survivors **Strengths** Measurement tools proven [CI], internal validity; Multiple tests for Goodness of fit Low attrition rate Researchers designed study-specific model (Construct Validity) **Weakness** Final sample size smaller Non-probability sample decreased generalizability (reliability) Demographics decrease racial/ethnic generalizability Relied on subjects' report. **Feasibility:** financial and time investment for HCP in TIC training; feasible with multimedia, simulation

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Citation Country Funding/Bias	Theory Conceptual Framework	Design Method Purpose	Sample Setting	Major Variables & Definitions	Tool	Data	Findings	Decision for Use
Selection Bias- Self Selection								& role play. Beneficial to patient health outcomes.
Schweiger-Whalen, L. et al., 2019 **Country** United States of America **Funding** No funding received for research, authoring or publication. **Bias** All declare no conflicts of interests regarding research, authorship or publication.	Cultural Comp-etence Model of Minority Stress	**Design** **QE;** **T-RT** **Purpose** 1) To review the literature on LGBT cultural competence interventions 2) Evaluate the effectiveness of a workshop on the development of LGBTQ cultural competence and knowledge 3) Make recommendations for best practices	**DEMO** ***n*** = 130 **Fe=**78.5% **C=**53.1% **H=**36.9% **Hts=**83.8% **RN=**22.3% **RNs=**57.7% **Setting** Small city in the Southwest USA Workshops-hospitals and nursing schools **Inclusion** **HCP** or **HCP** student Attrition 3%	**IV:** Education **DV1:** **LGBTQ+** Cultural **C**ompetence **DV2:** **LGBTQ+** Knowledge	**GAP** ***α*** =0.93 (also demonstrates factorial convergent and discriminant validity) **LGBTQ+** knowledge: multiple choice questions from recent publications of the Fenway Institute. Open-ended questions – self reflection	Missing Data**:** none Goodness of Fit**:** ***t*** test was used; this is appropriate for test-re-test analysis. Linear regression was used to compare effects across groups. Mann Whitney test used to determine gift differences in gap change scores across demo graphics.	DV1: Test retest for the **GAP** score was significant (***M*** = 4.58, ***SD***=4.79, *t* (80) = 8.6007, ***p*** < .001 DB2: Test retest for knowledge was significant ***M*** = 3.28, ***S D*** = 2.47); ***t*** (126) = 14.99, ***p*** < .001 No effect for demographics including age gender ethnicity and sexual orientation.	**LOE III** **Reason for Inclusion:** An **LGBTQ+** educational intervention for **HCP's** demonstrated a significant relationship with increased **GAP** scores. **Strengths** Established theories; strong statistical analysis; use of validated tool **Weakness** Time requirement -4 hours; No physicians attended. Decreased geographic generalizability; city known as more progressive Ethnically skewed (C&H) Self-selection bias/convenience sampling. **Feasibility** The feasibility of a four-hour workshop is questionable as it would deter attendance; it would also call for a financial investment for the presenter and paid participants.

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Citation Country Funding/Bias	Theory Conceptual Framework	Design Method Purpose	Sample Setting	Major Variables & Definitions	Tool	Data	Findings	Decision for Use
								Multimedia access would make this intervention more feasible
Whitehead et al. (2016) **Country** United States **Funding** No funding or support to report **Bias** Authors declare no competing interests. Self-selection sampling Recall	**Theory:** Theory of Social Stigma Minority Stress Model	**Design** **DE, RETRO** **Purpose** to determine whether higher levels of stigma or lower levels of outness correlate with less Primary Health care access for rural **LGBT** populations	**DEMO:** ***N*=** 946 **C**=88%; **B**=3%; **G**, **L, HoS**=81%; Bi=6%; **TGS=**3%; **Q**=4% **Setting** Online Facebook groups – Surveys, **Inclusion** -self-identified **LGBT** ->18 -within defined zip codes with pop. density <1000/sq mi **Attrition** 7%	**IV1: Stigma** **IV2: Outness-** divulgence of sexual orientation to **PCP** & community **DV: Utilization of Primary Care** – established PCP **General health:** self-report and Health score	Mayer scale: internalized, enacted, & anticipated stigma **Va&Ri:** Not reported (Mayer scale, Depression scale, Health Score) *Level of Outness:* outness to **PCP** social contacts community *Utilization of **PCP*** =# of visits in last 12 mos.; health insurance status ;y/n for **PCP.** *General health status*: self-report & presence of chronic illness	**Missing Data:** Surveys with missing data were discarded. **Goodness of Fit:** Supported by use of generalized linear regression model for analyzing covariates. Chi squared/ Kruskal-Wallis test to determine differences between groups and relationship to health score	Insurance assoc. with ↑health scores (***p***= 0.000) Depression assoc. w/ ↓score for **CisF** (***p***= 0.013) Outness to **PCP** ↑ health scores for all demo (***p*** = 0.000) **Fe/Ma**	**LOE: IV** **Reason for Inclusion: LGBTQ+** patients who felt stigmatized by **HCP's** reported decreased **SOGI** divulgence, lower calculated health scores, and ↓ use of primary care in rural areas::↑education for HCPs = ↓ stigma and ↑ patient outcomes. **Strengths** -Adequate sample size -Strong statistical analysis. -Known theories & models -Unique health score to compare **IV** **Weakness** -Mostly **ConvS** and only rural **LGBT**; ↓ generalizability. -Bias with self-selection sample -Skewed by those who were more "out" -Did not include those who engaged in same sex behavior but did not identify as **LGBTQ.** **Feasibility** Results show those who were out to **PCP** had higher utilization of primary care and higher health scores. Supports education for **HCP** & **SOGI** screening. Feasible and

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Citation Country Funding/Bias	Theory Conceptual Framework	Design Method Purpose	Sample Setting	Major Variables & Definitions	Tool	Data	Findings	Decision for Use
					Health score			reasonable to incorporate into intake forms.

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Appendix B
Qualitative Studies

Citation Country Funding/Bias	Theory/ Conceptual Framework	Design Method Sampling	Sample Setting	Purpose	Tool	Data Analysis	Findings/ Themes	Decision to Use
Rossman et al. (2017) **Country:** Kentucky, USA **Funding**: National Institute of Mental Health. Kinton Rossman supported with grant from Health Resources and Services Administration. **Bias:** Authors declare no conflict of interest	Johnson & Nemeth's Model of Health-care Interaction	Epistemological Exploratory, longitudinal Sampling – Incentivized Snowball Sampling	***N*=206** **LGBTQ** youth center, large urban setting (Chicago) Ages: 13-24 at start; for 48 months; ***N***=141 had a medical checkup in last year, ***n***-88 did not have health insurance	**Purpose:** Examine LGBTQ young adults nondisclosure of SOGI to medical providers and (2) experiences with providers following SOGI disclosure	Interview, Initial written response. Binary response triggered open-ended questions	"No" responses : inductive coding, "Yes" responses: based on Johnson and Nemeths model: Data coded through deductive reasoning into main themes	"No" ***n***=67- Lack of inquiry, **HCP**/pt. relationship factors, stigma, ambivalence, perceived irrelevance "Yes" ***n***= 130 Knowledge: Inadequate, confusion, no reports of pts provided information based on **SOGI** Communication: **HCPs** comfort/discomfort; looks of disgust/ shock, verbal/ nonverbal microaggressions, Attitude**:** not friendly; respect/ disrespect; **Outcome post disclose** ***n***=40 30.8% positive; ***n***=80 (61.5%) neutral; and ***n***=10, 7.7% negative related to repeat **HCP** visit; No or negative **HCP** reaction = missed opportunity, gap in competence and training.	**Level of Evidence: VI** **Reason for Inclusion:** Perception of knowledge, positive attitude and inclusive care increased **SOGI** disclosure for LGBTQ+ patients **Strengths:** Use of Johnson and Nemeth's model of healthcare interaction – sound framework for "yes" responses; For no responses, interview format allowed gathering of respondents'' reasons for not disclosing, there has been no literature to identify these reasons. **Weaknesses**: no theoretical framework for lack of response. Limited quantitative data collected on sample to compare **SOGI**, race, gender. Most participants lived in a urban, progressive area with health care available, does not reflect experiences of **LGBTQ** youth in suburbia, small town, rural areas. **Applicability/ feasibility:** Application/education in competent and effective communication and interaction is an opportunity to increase healthcare engagement for **LGBTQ** young adults and is applicable to healthcare at all levels and specialties. Identification and disclosure of

Key: DV: Dependent Variable**; HCP:** Healthcare Provider**; HtS:** Heterosexual**; IV:**Independent Variable**; LGBTQ**+: Lesbian, Gay, Bisexual, Transgender**,** Queer/Questioning, Plus Others**; LOE:** Level of Evidence; ***N*=** number of studies**; *n*=** sample, group population; **SOGI:** Sexual Orientation/Gender Identity

Citation Country Funding/Bias	Theory/ Conceptual Framework	Design Method Sampling	Sample Setting	Purpose	Tool	Data Analysis	Findings/ Themes	Decision to Use
								SOGI enables more open communication

Key: DV: Dependent Variable**; HCP:** Healthcare Provider**; HtS:** Heterosexual**; IV:**Independent Variable**; LGBTQ**+: Lesbian, Gay, Bisexual, Transgender**,** Queer/Questioning, Plus Others**; LOE:** Level of Evidence; ***N*=** number of studies**; *n*=** sample, group population; **SOGI:** Sexual Orientation/Gender Identity

Appendix C
Mixed Method

Citation Funding Country Bias	Theory/ Conceptual Framework	Design Method Purpose of Study	Sample Setting	Major Variables & Definitions	Measurement	Data	Findings/ Results	Decision for Use
Patterson et al., (2019) **Country** USA Tennessee **Bias:** Three authors self-identify as LGBT **Funding:** University of Tennessee Scholarly Activity in Research incentive funds for 2016; The University of Rochester	**Theory**: Social determinants of health Minority stress	**Design**: Mixed explanatory QUANTITATIVE -> qualitative cross sectional **Purpose:** Determine level of LGBT in primary care & oncology in rural area of Tennessee	***N***= 85 doctors nurses in current practice; Missing data = averaged with mean substitutions Sample= **ConvS**	**Quan** **IV**1: Prior education **DV**1: Attitudes **DV**2: skills **DV**3: knowledge	**Quan** **LGBTQ** health care health care scale **α** = 0.54 Demographics: gender, **SOGI,** marital status, prior training in **LGBT** health	**Quan** Pearson's chi squared test of Independence tested associations between **HCP** characteristics and quantitative items Bonferroni corrections tested paired comparisons for significant chi square	**Quan** **HCP** indicated that medical training did not adequately address LGBT healthcare needs 52.6% vs 22.7% x 2 = 6.56, ***p***= .04 Oncology HCPs indicated least competence in talking with LGBT patients in a sensitive inappropriate manner 78.6% vs 61.5% vv36.8% x 2 = 17.62 , ***p*** = .001	**Level of Evidence: VI** **Reason for Inclusion:** HCP's reported lack or preparation, inadequate training in care of **LGBTQ+** patients. Interviews with **HCPs** revealed microaggressions, gender identity denial and offensive terminology. **Strengths:** data saturation obtained mixed method lens more understanding of issues; Qualitative and quantitative data indicate training must move beyond knowledge issues online curriculum to increase knowledge and skills is feasible providers must address personal values in caring for **LGBT** and assess potential for microaggressions **Weakness :**

Key: α= Chronbach's Alpha**; ConvS = Convenience Sampling; Fe=** Female; **HCP:** Healthcare Provider**; LGBTQ**+: Lesbian, Gay, Bisexual, Transgender**,** Queer/Questioning, Plus Others**;** **LOE:** Level of Evidence; **MD** = Medical Doctor; ***N*=** number of studies**;** ***n*=** sample, group population***; p***= probability; **RN**= Registered Nurse; **SOGI:** Sexual Orientation/Gender Identity

Citation Funding Country Bias	Theory/ Conceptual Framework	Design Method Purpose of Study	Sample Setting	Major Variables & Definitions	Measurement	Data	Findings/ Results	Decision for Use
			Qual ***n***= 6 4 **RN** , 2 **MD** Qualitative sampling: purposive sampling for role	**Qual** provide competent care tenants of **LGBT** cultural competence and training	**Qual** semi structured 30-40min interviews; achieved saturation. a priori deductive codes Inductive coding; micro-aggressions	**Qual** Data saturation followed by deductive and inductive coding	**Findings/ Themes** included micro aggressions micro invalidations heteronormative assumptions and lack of **SOGI** screening; micro insults	Purposive recruiting; convenience sampling Over representation of **Fe** & **Hts HCPs**; Those already interested in LGBT health more likely to participate' Low response rate, low number of qualitative interviews

Key: α= Chronbach's Alpha**; ConvS = Convenience Sampling; Fe=** Female; **HCP:** Healthcare Provider**; LGBTQ**+: Lesbian, Gay, Bisexual, Transgender**,** Queer/Questioning, Plus Others**;** **LOE:** Level of Evidence; **MD** = Medical Doctor; ***N*=** number of studies**;** ***n*=** sample, group population***; p***= probability; **RN**= Registered Nurse; **SOGI:** Sexual Orientation/Gender Identity

Appendix D

Synthesis Table

Author/ Year	Scheer & Poteat, 2018	Whitehead et al., 2016	Schweiger-Whalen et al., 2019	Bristol et al., 2018	Green et al., 2018	Parameshwaran et al., 2017	Nowaski et al., 2019	Antebi-Gruszka & Scheer, 2021	Nicolaidis et al., 2005	Rossman et al., 2017	Patterson et al., 2019	Nama et al.,2017
Type of study	**Quan**	**Quan**	**Quan**	**Quan**	**Quan**	**Quan**	**Quan**	**Quan**	**Quan**	**Qual**	Mixed	**Quan**
Design	**RETRO**	**DE: RETRO**	**QE;, T/RT**	**QE; T/RT; CoH**	**DE; RETRO ; CoH**	**DE;**	**NE; DE; CoR**	**RETRO ;CoR**	**QE; T/RT**	Epistemo-logical, exploratory, longitudinal	**QUAN-qual; DE**	**DE; RETRO**
LOE	IV	IV	III	III	VI	VI	VI	IV	III	VI	VI	VI
Theoretical Framework	Trauma Theory **IPR**	Theory of Social Stigma **MSS**	**CC** **MSS**	**TCH**	**CC** **IPR**	**CC** Diversity Education and Awareness	**CC**	Trauma Theory	Empathy; Respect for Autonomy	Johnson & Nemeth's Model of Healthcare Interaction	Social Determinants of Health **MSS**	**CC** Explicit vs Implicit Bias
Study Characteristics												
Population Studied	LGBTQ + PTS	LGBTQ+ PTS	**HCP**	**HCP**	**HCP**	**MS**	**HCP** Doctors	**LGBTQ + PTS**	**HCP,**	**LGBTQ+ PTs**	**HCP** – Doctors and nurses	**MS**
Location	Boston, MA USA Online	Rural zip codes, USA	Southwest USA	Baltimore, MD	Wisconsin, USA	UK	Indiana, USA	Boston, MA USA Online	Washing-ton County, Oregon	Urban areas Indianapolis, IN and Kentucky Online	Rural Tennessee	Ottawa, Canada
Sampling	**ConvS**	**ConvS**	**ConvS**	**ConvS**	**ConvS**	**ConvS**	**ConvS**	**ConvS**	**ConvS**	Incentivized snowball	**ConvS**	**ConvS**
Sample Size	***n***=239	***n***= 946	***n***=130	***n***=81	***n***=1010	***n***=166	***n***= 938	***n***=239	***n*= 187**	***n***= 206	***n***=85	***n***=103

↑= Increase ;↓ = Decrease**;** += Positive Correlation**; --** = Negative Correlation; **AIM**= ALLY Identity Measure; **ATSI**= Attitudes Towards Survivors of IPV Scale; **CoH=Cohort;**

ConvS=Convenience; CoR=Correlation; **CC**= Cultural Competence; CS = Correlational Study **DE= Descriptive; DV**= Dependent Variable; **EMP**=Empowerment; **GAP**= Gay Affirmative Practice; **HCP**= Healthcare Provider**;**; **IPR**= Intrapersonal Relationships; **IPV**= Intimate Partner Violence; **IV**= Independent Variable; **IS** =Intervention Study**; LGBTQ+** = Lesbian, Gay, Bisexual, Transgender, Queer, Plus; **LOE**= Level of Evidence**; LS =** Likert Scale**; MS=** Medical Students; **MSS**= Minority Stress Theory; **NE= Non-Experimental PHQ-9**= Patient Health Questionnaire-9; **PMH**= Patient's Mental Health; **PPH**=Patient's Physical Health; **PCC=** Provider Cultural Competence; **PK** = Provider Knowledge; **PTS** = Patients; **QE= Quasi-Experimental; Qual**=Qualitative Study; **Quan=**Quantitative Study; ***n*=** sample population; **SOGI**= Sexual Orientation Gender Identity; **TCH**= Transcultural Healthcare; **TIC** = Trauma Informed Care; **T/RT** = Test/Retest; **WS**=Workshop **RETRO= Retrospective;**

Tools Used	**PHQ9;** Somati-zation Scale	Mayer scale	**GAP** Scale	**AIM**	**LS; LGBTQ +** specific survey	Self rating LS	**LS, LGBTQ +** specific survey	**PHQ9;** Somati-zation Scale	**ATSI**	Survey Yes/No answer triggered QUAL portion	**LGBTQ** Health Care Scale	**LS**, self reported scale
IS-IV&DV	**IS**		**IS**	**IS**				**IS**	**IS**			
IV	**IV: TIC**		**IV 4hr-WS T/rt**	**IV 2hr-WS R/RT**				**IV :TIC**	**IV :2hr-WS T/RT Voices of Survivors**			
DV	**DV: PMH ↑**							**DV:↑ (EMP)**				
DV	**DV: PMH ↑**											
DV			**DV: PCC ↑**	**DV: PCC ↑**					**DV:RFA↑**			
DV			**DV: PK ↑**	**DV: PK ↑**					**DV: PK↑**			
DV									**DV: PE ↑**			
CS		**CS**			**CS**	**CS**	**CS**				**CS**	**CS**
IV- CS			**DV- CS**									
	Provider Attitude											
↑ PK					**+ ↑PK**	**+↑PK -↓PK**	**+↑PK --↓PK**				**-↓PK**	
	Provider Behavior Skills/Practice											
↓ PK						**-↓PK**					**-↓PK**	**+ ↑PK**
	LGBTQ+ Patients Divulgence of SOGI											
		+ ↑PK										
Quantitative studies show positive correlations between provider knowledge and attitude, skills and LGBTQ+ affirming practices												

↑= Increase ;**↓** = Decrease**; +**= Positive Correlation**; --** = Negative Correlation; **AIM**= ALLY Identity Measure; **ATSI**= Attitudes Towards Survivors of IPV Scale; **CoH=Cohort;**

ConvS=Convenience; CoR=Correlation; **CC**= Cultural Competence; CS = Correlational Study **DE= Descriptive; DV**= Dependent Variable; **EMP**=Empowerment; **GAP**= Gay Affirmative Practice; **HCP**= Healthcare Provider**;**; **IPR**= Intrapersonal Relationships; **IPV**= Intimate Partner Violence; **IV**= Independent Variable; **IS** =Intervention Study**; LGBTQ+** = Lesbian, Gay, Bisexual, Transgender, Queer, Plus; **LOE**= Level of Evidence**; LS =** Likert Scale**; MS=** Medical Students; **MSS**= Minority Stress Theory; **NE= Non-Experimental PHQ-9**= Patient Health Questionnaire-9; **PMH**= Patient's Mental Health; **PPH**=Patient's Physical Health; **PCC=** Provider Cultural Competence; **PK** = Provider Knowledge; **PTS** = Patients; **QE= Quasi-Experimental; Qual**=Qualitative Study; **Quan=**Quantitative Study; ***n*=** sample population; **SOGI**= Sexual Orientation Gender Identity; **TCH**= Transcultural Healthcare; **TIC** = Trauma Informed Care; **T/RT** = Test/Retest; **WS**=Workshop **RETRO= Retrospective;**

Qualitative Studies						
Sampling Method				Incentivized Snowball Sampling	**ConvS**	
Data Collection				Demographics survey and 1:1 interview	Phone interviews	
Findings/ Themes				No reaction Verbal and nonverbal microaggressions	Micro-aggressions Microinsults Hetero-normative Assumptions Failure to assess **SOGI**	

↑= Increase ;↓ = Decrease**;** **+**= Positive Correlation**; --** = Negative Correlation; **AIM**= ALLY Identity Measure; **ATSI**= Attitudes Towards Survivors of IPV Scale; **CoH=Cohort;**

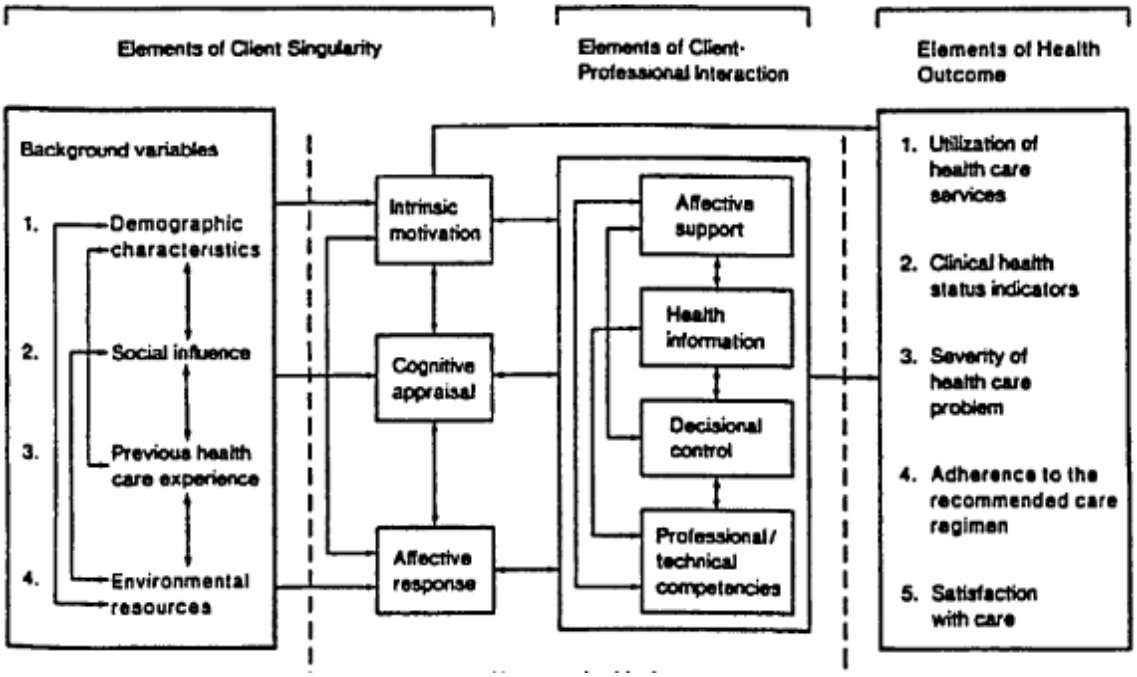
ConvS=Convenience; CoR=Correlation; **CC**= Cultural Competence; CS = Correlational Study **DE= Descriptive; DV**= Dependent Variable; **EMP**=Empowerment; **GAP**= Gay Affirmative Practice; **HCP**= Healthcare Provider**;**; **IPR**= Intrapersonal Relationships; **IPV**= Intimate Partner Violence; **IV**= Independent Variable; **IS** =Intervention Study**; LGBTQ+** = Lesbian, Gay, Bisexual, Transgender, Queer, Plus; **LOE**= Level of Evidence**; LS =** Likert Scale**; MS=** Medical Students; **MSS**= Minority Stress Theory; **NE= Non-Experimental PHQ-9**= Patient Health Questionnaire-9; **PMH**= Patient's Mental Health; **PPH**=Patient's Physical Health; **PCC=** Provider Cultural Competence; **PK** = Provider Knowledge; **PTS** = Patients; **QE= Quasi-Experimental; Qual**=Qualitative Study; **Quan=**Quantitative Study; ***n*=** sample population; **SOGI**= Sexual Orientation Gender Identity; **TCH**= Transcultural Healthcare; **TIC** = Trauma Informed Care; **T/RT** = Test/Retest; **WS**=Workshop **RETRO= Retrospective;**

Appendix E

Models and Frameworks

Figure 1

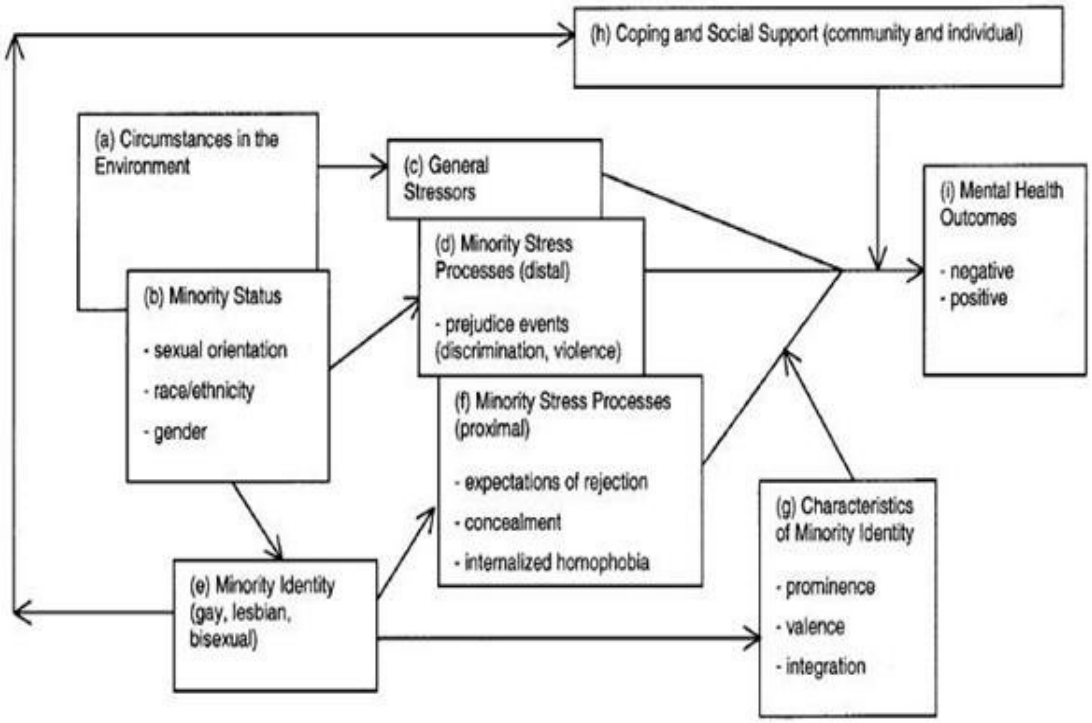
Interaction Model of Client Health Behavior



(Cox, 1982)

Figure 2

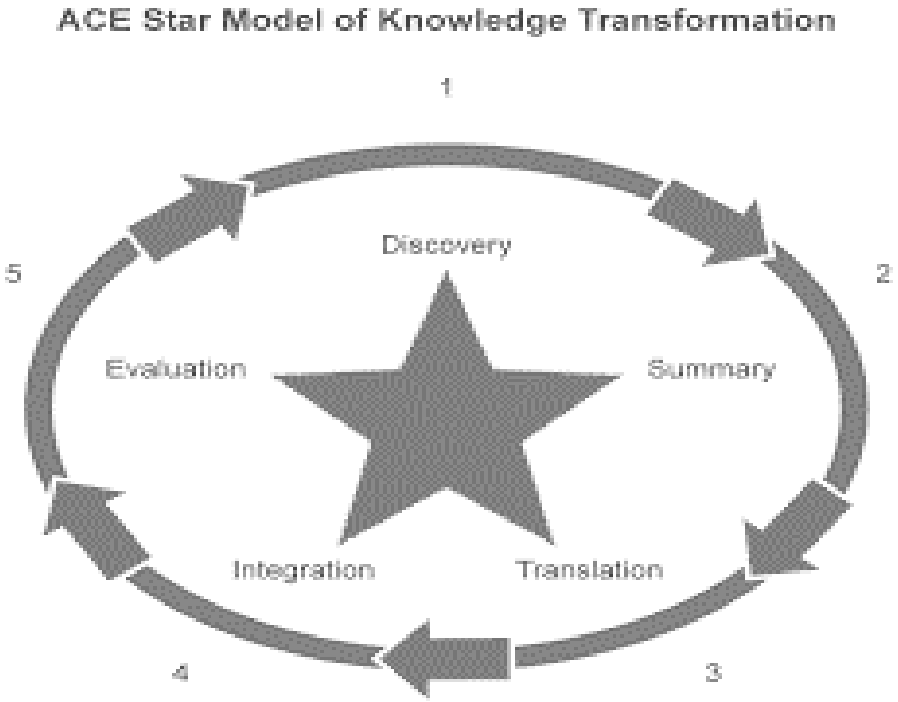
Minority Stress Model



(Meyer, 2003)

Figure 3

ACE STAR MODELof Knowledge Transformation



(Stevens, 2004)

Appendix F

Budget Analysis

Table 1

Phase	Activities	Est. Cost	Notes	Actual Cost
Preparation	Domestic violence victim engagement training	$250.00	State requirement	$250
	Attendance at Let's Get Better Together (LGBT) Healthcare Conference	$95.00	Applied for and received grant to attend	$0
	Gay and Lesbian Medical Association- Student membership	25.00	--	$25.00
	Arizona Board of Nursing Membership List for AZ Nurse Practitioners	$100.00	--	$100.00
	Random Generator Software	N/A	--	FREE
	Prepare information brochure for LGBTQIA+ victims Focus groups.	Prepared per student. Distributed through online listserv	--	N/A
	Preparation of online surveys and educational intervention	N/A **(Indirect Costs) *Student missed time from prn work***	All online media prepared per student; no fee accounted for student's time	N/A
	Media and website for educational intervention and data collection (You Tube,	FREE		FREE

	Qualtrics, WordPress) Brochure Software(Microsoft Publisher)	 $70.00		 $70.00
	Powtoons Video Software Discounted Education Account	$70.00		$70.00
Delivery	Mail project information and link with US Postal Service. Postcards: 500 4x6 cards $55 w/ shipping Stamps:(500 @ $.50)	$305	Mailers for AZ nurse practitioners obtained from AZBON mailing list	$305
	Incentive Prizes/Raffles Healthcare Providers: Gift cards	$200		$50
	Incentive Prizes/ Raffles: LGBTQIA focus groups participants (Starbucks/Target gift cards)	$5 ea/500 mailings		$75
	E-Delivery of project information and links via social media platforms	FREE		FREE
	E-Delivery of project information and links via American Association of Nurse Practitioners' Special Interests Groups	$20.00 $55.00	Membership dues to AANP Special Interest Group: Equity, Diversity & Inclusion Student membership dues to AANP	$70.00
	Provider (subject's) time for	N/A – Volunteer pool;		This project is not sponsored

	intervention approx. 1.5 hours **(Indirect Costs)**	convenience Sampling		by a healthcare organization and should be voluntary and not part of providers employment training. Costs will vary per provider time.
Evaluation	Data Extraction and Calculation	Per Student **(Indirect Costs) *Student missed time from prn work**		0
		Graduate Tutor/Assistant $20/hr Estimate: 4hours		0 Not needed
	Intellectus Software	$90	Annual subscription – Organizational rate	$90
Subtotal Costs				$1105
Resources	Pending applications submitted for research grants totaling $500.	$500		$0
	ACESDV Student Membership – Savings for DV education	$50		(50.00)
	Pending donations for incentive prizes	$300		0
	LGBT Conference Grant			(95.00) credited
	Intellectus Software			(90.00)
	Microsoft Publisher			(70.00)
	Subtotal Resources			$210
	Potential Resources			0
TOTAL FINAL COSTS				$895

TOTAL COSTS – PENDING POTENTIAL RESOURCES	0
FUNDING- Potential Costs not funded by resources will be directly funded by student	
Overall Cost-Utility Analysis	In a 2018 study, the Centers for Disease Control estimated the total lifetime cost per IPV victim was an average of $81.960 (Peterson, 2018). This study was based on US records reporting 32 million female and 12 million male victims and estimated a total economic burden of $3.6 trillion which included $1.3 trillion in lost productivity and an estimated $1.3 trillion burden for the US government. Considering the unknown factors due to underreporting by all populations, these numbers may be substantially higher. Also, IPV in the LGBTQ+ population has not been sufficiently studied. These factors make the true costs difficult to estimate. Although based on quality of life and quantity of life, due to underreporting and lack of longitudinal data of both IPV victims and survivors, it is also difficult to estimate the true utility. Also, even with compliance to screening by healthcare providers, other factors may contribute to lack of help-seeking behaviors for IPV in the LGBTQIA+ population.
Indirect and Direct Costs	The low direct costs of this project intervention for the student, as well as the potential minimal indirect costs for providers to participate as well as to implement screening in practice, make the utility of this intervention beneficial for those patients that it could potentially effect. Additionally, it is in line with the Institute for Healthcare Improvement's goals to improve the health and safety of populations.
Budget Justification	***Preparation*** • A minimum 40 hours of domestic violence training is required by the state of Arizona to engage with domestic violence survivors. Training was completed through site partner. • Attendance at multiple LGBTQIA+ healthcare conferences to examine dual perspectives of LGBTQIA+ intimate partner violence as well as challenges for health care providers. Membership in the Gay and Lesbian Medical Association important for perspective and resources. • The Arizona State Board of Nursing provides a mailing list of nurse practitioners within the state. A total of 500 names were chosen randomly with free number generation software. • Measurement tools have been approved for use by publisher with no fees. ***Delivery*** • Postcards were professionally designed, printed and mailed to randomly selected Arizona nurse practitioners using

	randomwordgenerator.com. Last names will be used and letters randomly selected until 500 subjects are identified. • The United States Bureau of Labor statistics (2020) reports the Arizona nurse practitioner population at 4,790 in 2020. After rounding to 5000 as an estimation of added graduates and population fluctuations 10 % of the population will be sufficiently represented by 500 mailings. At the standard accepted average response rate of 33%, that would be 165 responses. The actual sample size (*n*=6) was significantly less. • The American Association of Nurse Practitioners' Ethics, Diversity and Inclusion Community forum and social media healthcare provider groups vetted with professional license data were also used to share website links and project information. ***Evaluation*** • Evaluation of data included data download from *Qualtrics* software and data entry and upload to *Excel* and *Intellectus* software. This did require support from graduate statistics assistants or tutors and software technical support. Although contingency funds were included in the budget, all technical assistance was paid for as part of other membership programs or tuition.