Hispanics have higher HIV and sexually transmitted infection (STI) rates than any minority group.1 In 2019, about 1.2 million people in the United States (US) were living with HIV. Although Hispanics only make 18% of the US population, this group accounts for 25% of individuals who live with HIV. New HIV infections heavily affect Hispanic and Latino gay and bisexual men and Hispanic and Latina heterosexual women.2 This minority group is most likely to report never having done HIV testing resulting in the widening of HIV infection disparity.3 In order to end the HIV epidemic, the nation must enhance HIV testing, link people living with HIV to treatment, and ensure access to HIV prevention such as Pre-Exposure Prophylaxis (PreEP). One of the known causes of HIV transmission and other sexually transmitted diseases is unprotected sex. Lack of HIV knowledge, acculturation, and personal attitudes were cited as predictors of risky sexual behaviors4-6; however, findings from these disparate investigations are conflicting. It is possible that sexual self-efficacy defined as a sense of self-control and self-regulation may be an important mediating factor toward protected sexual practices.7-9

On the other hand, protected sex examined within the context of ascribed Hispanic cultural gender roles such as machismo and marianismo has rarely been investigated. The Hispanic ascribed gender roles of machismo and marianismo may influence the power balance of a relationship exposing the couple to high sexual risks. Machismo cites men as the decision makers4,10 while marianismo portrays women as a follower to their partner in a sexual relationship.11 To date, no studies can be found investigating the influence of ascribed Hispanic cultural gender roles including HIV knowledge, acculturation, attitudes, and sexual self-efficacy on protected sex in one single study. Given the high HIV infection and STI rates among Hispanics, it is critical to understand how sexual self-efficacy plays a role in attenuating the sexual risks associated with gender roles ascribed in this culture. Thus, the purpose of this study was to: (1) examine the mediating effect of sexual self-efficacy between predictors HIV knowledge, cultural influence of traditional Hispanic gender roles of machismo and marianismo,
acculturation, and attitudes on protected sex and (2) examine the direct and indirect effect of these predictors on protected sex. It is critical to gain an understanding on the mechanism on how sexual self-efficacy influence safe sex behaviors to inform the development of culturally sensitive evidence-based interventions that promote sexual self-efficacy skills.

Factors Associated With Protected Sex

HIV Knowledge

Increased knowledge about sexually transmitted infections (STIs) and their known risks were positively associated with optimistic attitudes toward condom use and increased couple’s communication about condom use.12,13 Receipt of interventions relating to enhancing HIV and STI related knowledge was associated with consistent condom use among Hispanic gay, bisexual, and men who have sex with men at 3 months and at 6 months post intervention.12 Similarly, other studies corroborate that receipt of interventions leading to increased HIV knowledge was significantly associated with HIV testing and HIV serostatus among Hispanic men who have sex with men.14,15 Other studies conducted among Hispanics however contradict the above findings indicating that abundance of HIV knowledge does not necessarily curtail risky sexual behaviors.11,16-18 Given the conflicting results in this topical area, it is possible that other factors other than increased HIV knowledge alone may explain safe sexual practices.

Cultural Influence on Gender Roles

Ascribed gender roles such as marianismo and machismo/caballerismo of the Hispanic culture may influence relationship dynamics, decisions, and negotiations and therefore the practice of protected sex. The cultural value of marianismo assumes women to be naïve, submissive, nurturing, selfless, self-sacrificing, family-centered, chaste, and sexually pure.10,19 Female virginity is emphasized. The submissive nature of marianismo perpetuates inhibition of expression and poor direct communication about sex protection between partners11 which puts women at high sexual risks. Although marianismo was associated with fewer sexual partners, it was also linked with inconsistent use and non-use of condoms and less decision-making power in a sexual relationship.11,19

The cultural value of machismo has both negative and positive ascriptions to male masculinity in the Hispanic culture. In one aspect, machismo expects men to be strong, apathetic, dominant, and the decision maker in a relationship.4,10,20 On the other hand, the traditional role expects men to demonstrate chivalry, bravery, and be a good provider of the family or caballerismo.21,22 It is possible that a strong identification with the traditional gender roles of marianismo and machismo may tilt relationship dynamics leading to unprotected sex.

Sexual Self-Efficacy

Sexual self-efficacy is described as a sense of self-control, self-regulation, and the ability to refuse a partner with engaging in risky sexual behaviors.23 It is defined as an individual’s assertiveness and confidence in communicating condom use and intentions to discuss condom use with a partner.24 Sexually self-efficient individuals are confident about their sexuality; they negotiate condom use and threaten to withhold sex on resisting partners.7 Insisting on condom use even to unwilling partners was found an effective negotiation strategy.8,9 Thus, sexual self-efficacy may mitigate the sexual risks among women who adhere to the ascribed Hispanic cultural gender role of marianismo. Sexual-self efficacy may be a crucial factor to curb the potential sexual risks associated with machismo. The literature indicates that individuals who engaged in frequent and direct communications about protected sex resulted in less resistance from partners, which in turn led to lowered perceptions of contracting HIV.9 On the contrary, individuals with low sexual self-efficacy experience difficulties in denying unprotected sex and therefore placing themselves at high risks.11

Acculturation

Acculturation refers to the changes in personal beliefs, behaviors, and ways of living because of adapting to the mainstream or host culture.25,26 The balancing act that occurs between maintaining true to one’s original culture and adapting to the host culture often results in acculturative stress.27 Depression was found associated with acculturative stress due to difficulties in navigating between the original and the host culture.28,29

Psychological stress and depression may develop as one begins to identify with the host culture but at the same time maintain expectations to remain true to the mores and values of the original culture. Risky behaviors were reported consequences from attempts to cope with psychological stress borne from the acculturation process.29 Alcohol and other forms of substance use were often used as means to cope with depression, acculturative stress, and identify confusion which in turn led to unprotected sex. While past investigations point to the association between acculturative stress and risky sexual behaviors,29,30 the role of sexual self-efficacy as it relates to protected sex has rarely been examined. It is possible that sexual self-efficacy may have a positive mitigating effect on risky behaviors associated with ineffective coping relating to acculturative stress. Sexual self-efficacy may be a protective factor against
risky sexual behaviors by way of self-inhibition and self-regulation which may influence safe sex behaviors.

**Attitudes Toward Risky Sex**

Attitudes pertain to one’s overall perceptions whether a behavior is favorable or unfavorable and therefore is endorsed or demonstrated. Attitudes toward risky sex behaviors are influenced by peers and one’s social network. Past investigations indicate that peer norms supporting safe sex were linked to consistent condom use, reduced number of sexual partners, and avoidance of risky behaviors. Support from family was associated with reduced risk of early sexual initiation.

In addition, personal attitudes against risky behaviors were predictive of protected sex. Past investigations showed that a positive personal attitude toward condom use were more predictive of greater intentions to use safe sex than peer norms. Others claimed that together with motivation, attitudes affect refusal skills against unprotected sex which in turn influence sexual behaviors. While past findings indicate the influence of social norms on attitudes regarding protected sex other studies claim that attitudes, self-efficacy, and motivation are more predictive of safe sex behaviors. It is possible that sexual self-efficacy may have a supporting effect on attitudes against risky sexual behaviors. In other words, self-regulation, and self-control in addition to personal attitudes against risky sexual behaviors could lead to protected sex.

**Method**

Part of a larger study, Hispanic college students aged 18 to 24 were recruited from a Hispanic-serving institution located in a U.S. southern border city. Socio-demographic variables such as age, gender, primary language spoken, and employment were collected to gain some understanding about the profile of the sample. Age was measured as a continuous variable while gender, language, and employment were treated as dichotomous/categorical variables. HIV knowledge was measured using the sum score of 5 questions pertaining to participants’ knowledge about HIV. Questions to assess participants HIV knowledge included: Only people who look sick can spread the HIV/AIDS virus; Only people who have sexual intercourse with gay (homosexual) people get HIV/AIDS; Birth control pills protect women from getting HIV/AIDS; There are drugs available to treat HIV that can lengthen the life of a person infected with the virus; There is no cure for AIDS.

The Marianismo Belief Scale (MBS) and the Machismo and Caballerismo Scale (MCS) were used to measure ascribed Hispanic traditional gender roles. The MBS is a 24-item instrument that was used to measure a traditional gender role for Hispanic females. The items were measured in a 4-point Likert scale ranging from 1 = strongly disagree to 4 = strongly agree; a total score was obtained; a high score indicates adherence to the Hispanic tradition’s female gender role.

The MCS is a 20-item instrument that was used to measure ascribed gender roles for Hispanic males. There are 2 constructs of machismo: one aspect relates strongly on masculinity (machismo) and the other aspect is about connection with the family and chivalry (caballerismo). To determine which question items belonged to which construct, principal components type factor analysis using varimax rotation was initially conducted on the MCS instrument using SPSS PROCESS. The analysis yielded a Kaiser-Myer Olkin (KMO) of 0.732 indicating sampling adequacy. The Bartlett’s test of sphericity was significant (χ²(91) = 1883.598, P ≤ .001 indicating there were significant large correlations among the question items. Factors with eigenvalues greater than 1.00 rule and factor loading greater than 0.30 were retained. A 2-factor solution was obtained, machismo and caballerismo. To increase the Cronbach’s alpha, question items with less than .30 correlation were removed (MCS items 12, 13, 15, 16, 19, 20). Cronbach’s alpha of the current study is .68. The total score for each construct, machismo and caballerismo, were used as predictors in the succeeding Pearson and logistic regression analyses.

ARMSA-II Scale 1 was used to measure acculturation; this instrument was specifically designed for the Mexican American population. The instrument has 30 items measured in a 5-point Likert scale ranging from 1 = not at all to 5 = almost/extremely often. The instrument has 13 question items pertaining to Anglo Orientation Subscale (AOS) and 17 question items pertaining to Mexican Orientation Subscale (MOS). To obtain the acculturation score, the sum of the AOS was divided by 13 to obtain the mean of the AOS subscale while the sum of the MOS was divided by 17 to obtain the mean of the MOS subscale. Then, the MOS mean was subtracted from the AOS mean to obtain the acculturation score—which is the individual’s score on the continuum of acculturation—from very true Mexican to very assimilated or Anglicized.

Attitudes toward risky sex was determined in 3 question items measured in a 4-point Likert scale ranging from 1 = no risk to 4 = great risk. The total score of these items were used in the analysis. Sexual self-efficacy was measured using the total score of 6 question items that were rated in a 4-point Likert scale ranging from 1 = not at all to 4 = very much. The outcome variable, protected sex, was measured as a dichotomous variable (1 = yes; 0 = no). Permission to use all instruments was obtained.

**Analysis**

Measures of central tendency and dispersion were examined prior to addressing the purpose of the study. Descriptive
statistics were conducted on analyzing the demographic profile of the participants. Pearson correlation was used to analyze continuous variables, scale, or interval data such as HIV knowledge, machismo, caballerismo, acculturation, attitudes toward risky sex, and sexual self-efficacy. Spearman rho was used to analyze binary, categorical, or dichotomous data such as "use or none use" of protected sex in correlation with the independent variables. Logistic regression was used to examine the mediating effect of sexual self-efficacy between protected sex and the predictors and their covariates. All analyses were conducted using SPSS PROCESS macro v3.5. The PROCESS macro provides estimates of the path coefficients in the mediation model with a bootstrapped 95% confidence interval. The PROCESS macro allows testing of direct and indirect effects of mediating variables.

### Results

One hundred percent of the participants (n=342) identified themselves as Hispanic; 69.9% of the participants were females while 30.1% were males. More than half of the participants or 62.3% were between 21 and 24 years of age. Fifty-eight percent spoke English while 42.4% were more proficient in Spanish language. More than half of the participant were full-time college students (Table 1). The mean acculturation score is −0.20 which indicates that the participants belonged to the “slightly Anglo oriented bicultural” or Level III (Table 2). This indicates that the sample had a slight acculturation toward the Anglo orientation.

The correlation analysis among the predictors revealed that machismo was negatively correlated with sexual self-efficacy ($r = −.237; P < .01$) while sexual self-efficacy was positively correlated with attitudes toward risky sex ($r = .119; P < .05$) (Table 3). Sexual self-efficacy had a positive correlation with protected sex ($r = .124; P < .05$). Using the correlation results, a preliminary path analysis was conceptualized. The preliminary path model was used to determine the closest model that could predict protected sexual practices (Figure 1).

Cognizant of the preliminary path analysis, 2 models (Model 1 and Model 2) were generated to determine the best model that predicted protected sex. In these path diagrams, we tested 2 models, the paths of machismo and attitudes toward risky sex or those paths that showed a significant correlation with protected sex in as shown in Figure 1. The aim was to examine whether mediation exists using path analysis (direct and indirect effects). Path Model 1 shows machismo, HIV knowledge, and marianismo as predictors of protected sex with sexual self-efficacy as a mediating variable (Figure 2). In this model machismo, HIV knowledge, and marianismo showed multicollinearity. In step 1 of Path Model 1, sexual self-efficacy was treated as an outcome variable while machismo and HIV knowledge were treated as predictors. A significant negative relationship was found between machismo sexual self-efficacy ($β = −.06, P < .001; R^2 = .057, P < .001$) while the rest of the predictors showed no significance (Table 4). In step 2 Path Model 1, sexual self-efficacy together with the other variables were treated as predictors of protected sex to test for mediation. A positive and significant positive relationship was found between sexual self-efficacy and protected sex ($β = .085; P < .05$; Model Summary $P = .050$) (Table 5). No significant direct effect was found between machismo on protected sex ($β = −.018, P = .192$). The results mean that the high sexual risks associated with machismo are attenuated by sexual self-efficacy which in turn relate to protected sex.

Path Model 2 represents attitude toward risky sex and acculturation as predictors for protected sex with sexual

### Table 1. Socio-Demographic Data.

| Socio-demographic parameters | Frequency | Percentage |
|-----------------------------|-----------|------------|
| Gender                      |           |            |
| 1 = Female                  | 239       | 69.9       |
| 0 = Male                    | 103       | 30.1       |
| N                           | 342       | 100.0      |
| Age                         |           |            |
| 21-24                       | 213       | 62.3       |
| 25-29                       | 129       | 37.7       |
| N                           | 342       | 100.0      |
| Language                    |           |            |
| 1 = English                 | 197       | 57.6       |
| 2 = Spanish                 | 145       | 42.4       |
| N                           | 342       | 100.0      |
| Employment                  |           |            |
| 1 = Employed full-time (35+ h/week) | 13 | 3.8 |
| 2 = Employed part-time      | 123       | 36.0       |
| 3 = Unemployed (full-time student) | 194 | 56.7 |
| 4 = Unemployed (other reason) | 12       | 3.5        |
| N                           | 342       | 100.0      |

### Table 2. Descriptive Results.

| Variables          | Min  | Max  | Mean | SD   |
|--------------------|------|------|------|------|
| Age                | 21   | 29   | 23.95| 1.92 |
| HIV knowledge      | 0    | 3    | 1.50 | 0.73 |
| Marianismo         | 1.08 | 6.042| 2.10 | 0.44 |
| Machismo           | 10   | 225  | 20.34| 14.72|
| Caballerismo       | 4    | 28   | 23.11| 4.22 |
| Acculturation      | −2.42| 2.68 | −0.20| 0.83 |
| Attitudes toward risky sex | 3 | 8    | 7.24 | 1.03 |
| Sexual self-efficacy| 6   | 24   | 21.61| 3.69 |
| Protected sex      | 0    | 1    | 0.32 | 0.47 |
self-efficacy as a mediating variable (Figure 3). In step 1 Path Model 2, sexual self-efficacy was treated as an outcome variable. Attitude toward risky sex was found a positive and significant predictor toward sexual self-efficacy ($\beta = .441$, $P < .05$) (Table 6). In step 2 Path Model 2, sexual self-efficacy was entered as a predictor together with the other variables. Sexual self-efficacy had a significant and positive relationship with use of protected sex ($\beta = .080$, $P < .05$; Table 7). No significant direct association was found between attitudes toward risky sex on protected sex ($\beta = .182$, $P = .15$).

The results indicate that sexual self-efficacy reinforces attitudes against risky sex which then leads to protected sex. Attitudes alone do not lead to protected sex; sexual self-efficacy drives one’s agency toward protected sex.

**Discussion**

This study found that sexual self-efficacy mediates the relationship between machismo and protected sex. Machismo had a significant direct inverse relationship with sexual self-efficacy and an indirect relationship with protected sex. The current study findings suggest that Hispanic males who
strongly identify with the culturally ascribed gender role of machismo are likely to practice unprotected sex unless one has developed a keen sense sexual-self efficacy. It is through sexual self-efficacy that one maintains self-control and self-regulation from engaging in risky behaviors.23 It appears that sexual self-efficacy mitigates the risky sexual behaviors associated with machismo. Such finding has implications toward the importance of developing of evidence-based interventions that emphasize on sexual self-efficacy skills for those who have a strong identification and adherence to the traditional gender role of machismo.

In addition, a significant mediating effect of sexual self-efficacy was found between attitudes against risky sexual behaviors and protected sex. Attitudes toward risky sexual behaviors had a significant direct positive relationship with sexual self-efficacy and an indirect positive relationship toward protected sex practices. Attitudes toward risky sex have no direct relationship with protected sex practices. The current findings suggest that attitudes against risky sexual behaviors may not necessarily translate into safe sex practices unless one has strong sexual self-efficacy skills. Sexual self-efficacy fortifies decisions for safe sex practices especially when these are based on strong psychological convictions and attitudes against risky sexual behaviors. It is through sexual self-efficacy that one develops confidence and self-regulation not to engage in risky sexual behaviors.8,9

The general literature describes individuals with low self-efficacy and low self-confidence will not persist in executing a desired action in the face of obstacles47 for example, convincing a resistant partner to use a condom.8,9 Sexual self-efficacy enables an individual to negotiate and navigate a relationship with a partner to use protection even if the latter is resistant, and even the power balance in a relationship. The current findings

Table 4. Machismo, HIV knowledge, and Marianismo predicting sexual self-efficacy.

| Variables     | Coefficient | SE  | t     | P    |
|---------------|-------------|-----|-------|------|
| Constant      | 22.854      | 1.041 | 21.948 | .000 |
| Machismo      | -0.06       | 0.014 | -4.387 | .000*** |
| HIV knowledge | 0.097       | 0.271 | 0.359 | .720 |
| Marianismo    | -0.084      | 0.448 | -0.188 | .851 |

***P < .001.

Table 5. Logistic Regression Results: Sexual Self-Efficacy Mediating the Relationship Between Machismo, HIV Knowledge, Marianismo, and Protected Sex.

| Variable           | Coefficient | SE  | Z     | P   |
|--------------------|-------------|-----|-------|-----|
| Constant           | -3.385      | 1.142 | -2.964 | .003 |
| Machismo           | -0.18       | 0.014 | -1.303 | .192 |
| Sexual self-efficacy | 0.085    | 0.04 | 2.124 | .034* |
| HIV knowledge      | 0.503       | 0.164 | 0.326 | .744 |
| Marianismo         | 0.503       | 0.303 | 1.661 | .097 |

*P < .05.
support past investigations citing sexual self-efficacy as a key factor in predicting perceived personal behavior control. The current study findings have significant implications toward the promotion and development evidence-based interventions geared toward the development of sexual self-efficacy skills. Interventions to enhance confidence, self-regulation, and refusal skills could be emphasized in these interventions. Self-efficacy could be learned through vicarious experiences such as group sessions implemented among the Hispanic youth. Role-playing in group sessions to enhance self-confidence to refuse unprotected sex could be implemented. In group sessions, individuals can gain knowledge and skills from peers who model confidence in engaging sexual communication with their partners. Greater confidence to use condoms was gained through interactions with peers who encouraged, discussed, and practiced safe sex. Role-playing targeting on how to assert the use of protection with a resistant partner can be practiced in group sessions to gain mastery of skills. Likewise, making condoms freely available in college campuses yet discretely through condom dispensers could increase self-confidence in partner negotiation especially when the device is available at hand. Embarrassment and stigma were reported among women who purchased condoms at grocery store counters. It is recommended that institutions of education implement interventions that promote self-efficacy relating to sexual behavior early at the high school level.

Findings from investigations conducted in countries wherein machismo is embedded within the culture indicate that male partner involvement in promoting sexual and reproductive health led to positive gender role transformations and positive health and social care outcomes not only for themselves but also for their female partners in Sub-Saharan Africa. Men who participated in HIV and STI interventions improved in their sense of self-efficacy and condom use; they were more willing to get tested for HIV which resulted to increased uptake of HIV counseling. Involving male partners in reproductive health programs reduced the harmful effects of gender norms in these countries leading to improved women’s autonomy in terms of spousal communication and shared decision making. Similarly, a program in the Philippines that emphasized on male responsibility in contraception, which is typically relegated to females in a relationship, was...
linked to sustained condom use and therefore preventing unintended pregnancies and STIs/HIV. Actively engaging men in interventions promote self-efficacy and gender equity within the context of sexual and reproductive health.52

Verbal persuasion is one way to develop self-efficacy49; therefore, reproductive health education from nurses and other health care providers need to target parents at each well-child visit. Familismo, in the context of the Hispanic culture, has a strong influence on decision making especially if such advice is coming from parents and wise elders in the community. Latino youth who received support from their families on safe sex showed favorable attitudes toward safe sex15,53; better parent-child communication about sex was associated with youth’s intentions to practice safe sex.54

Contrary to past findings, the current study did not find HIV knowledge a significant predictor of safe sexual practices.11,55 Although HIV knowledge is particularly high among college students, recognition of the known risks of unprotected sex does not translate into safe sexual behaviors.16,55 Bandura47 theorized that knowledge alone is not enough, an individual must have the confidence to execute the desired behavior effectively.

The traditional gender role of marinismo and caballerismo were not found significant predictors of protected sex. Although the participants in this investigation were geographically close to their families in Mexico and may be aware of these ascribed traditional gender roles, these may not necessarily have any influence into sexual decision making. One study indicated that Hispanics are aware of cultural norms however these do not necessarily dictate sexual behaviors.4 Contrary to past studies no significant association was found between acculturation and risky sexual behaviors.29,56 It is possible that other facets of acculturation were not captured with the instrument used in this investigation. Acculturation is a fluid process; the instrument used may not have captured other important aspects of the concept.

Conclusion

Sexual self-efficacy is a significant mitigating factor against sexual risks associated with ascribed cultural gender roles as well as a positive reinforcing element on attitudes toward protected sex. Self-regulation and self-control in sexual self-efficacy mitigate the risks associated with machismo. Protected sex is achieved when attitudes toward safe sex are fortified with sexual self-efficacy skills. The findings of this study are significant because it adds information regarding the attenuating effect of sexual self-efficacy on sexual risks borne from culturally ascribed gender roles. Likewise, the reinforcing effect sexual self-efficacy on attitudes against risky sexual behaviors help explain the mechanism toward protected sex adding information to the current knowledge on this topic. However, the generalizability of the study findings is limited to similar populations who adhere to similar traditional gender roles. Also, the results of this investigation may be influenced by sampling bias and the limitations of the instruments used in the study. Longitudinal research designs are recommended in future studies to examine sexual self-efficacy, attitudes toward risky sexual behaviors, and adherence to traditional gender roles in the continuum of acculturation and how these evolve over time and influence safe sex behaviors.

Author Contributions

All authors approve the content of this manuscript, and had equal contribution in the planning, data analysis, and writing of this manuscript.

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Ethical Approval

Institutional Review Board approval (# 2016-01-20-R) and informed consent from participants were obtained prior to data collection.

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References

1. Centers for Disease Control and Prevention [CDC]. HIV among Hispanic/Latinos. Published 2018. Accessed January 3, 2022. https://www.cdc.gov/hiv/group/racialethnic/hispanic-latinos/index.html
2. Centers for Disease Control and Prevention. HIV and Hispanic and Latino People in the U.S. 2022. https://www. cdc.gov/nchhstp/newsroom/fact-sheets/hiv/hispanic-latino-factsheet.html
3. Guijalamo-Ramos V, Thimm-Kaiser M, Benzekri A, et al. The invisible US Hispanic/Latino HIV crisis: addressing gaps in the National Response. Am J Public Health. 2020;110(1):27-31.
4. Perrote JK, Bibriescas N, Wainwright K, Garza RT, Baumann MR. A bidimensional examination of machismo in relation to risky sexual cognitions and behavior among Latino college men. J Am Coll Health. 2020;68(2):115-118.
5. Adebayo OW, Gonzalez-Guarda RM. Factors associated with HIV testing in youth in the United States: an integrative review. J Assoc Nurses AIDS Care. 2017;28(3):342-362.
6. Wang SC, Lui JHL, Vega G, Waldrop M, Garris J. The moderating effect of alcohol use on protective and risky sex behaviors among college students in the Southeast United States. *J Am Coll Health*. 2018;66(7):546-552.

7. Addoh O, Sng E, Loprinzi PD. Safe sex self-efficacy and safe sex practice in a Southern United States College. *Health Promot Perspect*. 2017;7(2):74-79.

8. Closson K, Dietrich JJ, Lachowsky NJ, et al. Gender, sexual self-efficacy and consistent condom use among adolescents living in the HIV hyper-endemic setting of Soweto, South Africa. *AIDS Behav*. 2018;22(2):671-680.

9. Palacios-Delgado JR, Ortego-García N. Differences in sexual negotiation styles and sexual efficacy in use of condom among university men and women of Queretaro, Mexico, 2018. *Rev Colomb Obstet Ginecol*. 2020;71(1):9-20.

10. Barral RL, Cartujano B, Perales J, et al. Knowledge, beliefs, and attitudes about contraception among rural Latino adolescents and young adults. *J Rural Health*. 2020;36(1):38-47.

11. Ibañez GE, Whitt E, Avent T, et al. ‘Love and trust, you can be blinded’: HIV risk within relationships among Latina women in Miami, Florida. *Ethn Health*. 2017;22(5):510-527.

12. Rhodes SD, Alonzo J, Mann L, et al. Small-group randomized controlled trial to increase condom use and HIV testing among Hispanic/Latino gay, bisexual, and other men who have sex with men. *Am J Public Health*. 2017;107(6):969-976.

13. Rodrigues VCDC, Lopes GF, Silveira GEL, et al. Factors associated with the knowledge and attitude of adolescents regarding male condom use. *Rev Bras Enferm*. 2021;74:1-6.

14. Painter TM, Song EY, Mullins MM, et al. Social support and other factors associated with HIV testing by Hispanic/Latino gay, bisexual, and other men who have sex with men in the U.S. South. *AIDS Behav*. 2019;23:251-265.

15. Sheinfel AZ, Giguerre R, Dolezal C, et al. Information and motivation prediction HIV-Serostatus among a population of high-risk men and transgender women who have sex with men. *AIDS Behav*. 2020;24(10):2863-2871.

16. Patrício ACFA, Bezerra VP, Nogueira JA, Moreira MASP, Camargo BV, Santos JS. Knowledge of sex workers about HIV/AIDS and its influence on sexual practices. *Rev Bras Enferm*. 2019;72(5):1311-1317.

17. Cunha-Oliveira ACGDPP, Camarneiro APF, Xavier BDO, Moreira da Silva MANGM, Simões IMH, Cardoso IMMM. Attitudes and embarrassment about condoms in nursing students. *Acta Paul Enfermagem*. 2021;34(4):1-7.

18. Gause NK, Brown JL, Welge J, Northern N. Meta-analyses of HIV prevention interventions targeting improved partner communication: effects on partner communication and condom use frequency outcomes. *J Behav Med*. 2018;41(4):423-440.

19. Fava NM, Sanchez M, Wuyke G, et al. Associations between sexual trauma and sexual relationship power among Latina Immigrant Farmworkers: the moderating role of gender norms. *J Trauma Stress*. 2020;33(6):1093-1101.

20. Priestley S, Lipps G, Anderson P. The impact of masculinity ideologies and conjugal involvement on sexual risk-taking among young Jamaican males. *Int J Mens Health*. 2017;16(1):49-65.

21. Arciniega GM, Anderson TC, Tovar-Blank ZG, Tracey TJG. Toward a fuller conception of machismo: development of a traditional machismo and caballerismo scale. *J Couns Psychol*. 2008;55(1):19-33.

22. Nuñez A, González P, Talavera GA, et al. Machismo, mari-anism, and negative cognitive-emotional factors: findings from the Hispanic Community Health Study/Study of Latinos sociocultural ancillary study. *J Lat Psychol*. 2016;4(4):202-217.

23. Serier KN, Venner KL, Hernandez-Vallant A. The condom use self-efficacy scale in substance use disorder treatment-seeking American Indian adults. *Subst Use Misuse*. 2021;56(13):2066-2073.

24. Goldenberg T, Stephenson R, Bauermeister J. Cognitive and emotional factors associated with sexual risk-taking behaviors among young men who have sex with men. *Arch Sex Behav*. 2019;48(4):1127-1136.

25. Yan J, Sim L, Schwartz SJ, Shen Y, Parra-Medina D, Kim SY. Longitudinal profiles of acculturation and developmental outcomes among Mexican-origin adolescents from immigrant families. *New Dir Child Adolesc Dev*. 2021;2021(176):205-225.

26. Lee TK, Meca A, Unger JB, et al. Dynamic transition patterns in acculturation among Hispanic adolescents. *Child Dev*. 2020;91(1):78-95.

27. Wong CCY, Correa A, Robinson K, Lu Q. The roles of acculturative stress and social constraints on psychological distress in Hispanic/Latino and Asian immigrant college students. *Cultur Divers Ethnic Minor Psychol*. 2017;23(3):398-406.

28. Piña-Watson B, Cox K, Neduvelil A. Mexican descent college student risky sexual behaviors and alcohol use: the role of general and cultural based coping with discrimination. *J Am Coll Health*. 2021;69(1):82-89.

29. Perrotte JK, Baumann MR, Garza RT, Hale WJ. The combined relations of gender, enculturation, and depressive symptoms with health risk behaviors in Mexican-Americans: a moderated mediation analysis. *Ethn Health*. 2020;25(1):47-64.

30. Cheng HL, Mallinckrodt B. Racial/ethnic discrimination, posttraumatic stress symptoms, and alcohol problems in a longitudinal study of Hispanic/Latino college students. *J Couns Psychol*. 2015;62(1):38-49.

31. Catalano HP, Knowlden AP, Birch DA, Leeper JD, Paschal AM, Usdan SL. Using the theory of planned behavior to predict HPV vaccination intentions of college men. *J Am Coll Health*. 2017;65(3):197-207.

32. Bhochhibhoya A, Branscum P. The application of the theory of planned behavior and the integrative behavioral model towards predicting and understanding alcohol-related behaviors: a systematic review. *J Alcohol Drug Educ*. 2018;62(2):39-63.

33. De Torres RQ. Facilitators and barriers to condom use among Filipinos: a systematic review of literature. *Health Promot Perspect*. 2020;10(4):306-315.

34. Espinoza L, Richardson JL, Ferguson K, Chou CP, Raezconde-Garbanati L, Stacy AW. Intrapersonal and interpersonal correlates of condom use among young adults from continuation high schools. *Calif J Health Promot*. 2017;15(3):1-14.

35. Coleman-Minahan K, Samari G. ‘He supported me 100%’: Mexican-immigrant fathers, daughters, and adolescent sexual health. *Ethn Health*. 2020;25(4):560-579.
36. Steele ME, Simons LG, Sutton TE, Gibbons FX. Family context and adolescent risky sexual behavior: an examination of the influence of family structure, family transitions and parenting. *J Youth Adolesc.* 2020;49(6):1179-1194.

37. Joshua TG, Williams WO, Benton S, Uhl G. Evaluation of an HIV prevention intervention for women living with HIV. *AIDS Care.* 2020;32(7):835-842.

38. Bennett P, Bozionelos G. The theory of planned behaviour as predictor of condom use: a narrative review. *Psychol Health Med.* 2000;5(3):307-326.

39. Center for Substance Abuse Prevention [CSAP]. National minority SA/HIV prevention initiative: Adult Questionnaire. Published 2016. Accessed January 1, 2022. https://www.samhsa.gov/sites/default/files/youth-questionnaire.pdf

40. Castillo LG, Perez FV, Castillo R, Ghosheh MR. Construction and initial validation of the Marianismo beliefs scale. *Couns Psychol Q.* 2010;23(2):163-175.

41. Pett M, Lackey N, Sullivan J. *Making Sense of Factor Analysis.* SAGE Publications; 2003.

42. Field A. *Discovering Statistics Using SPSS,* 3rd ed. SAGE Publications; 2009.

43. Cuellar I, Arnold B, Maldonado R. Acculturation rating scale for Mexican Americans-II: a revision of the original ARSMA scale. *Hisp J Behav Sci.* 1995;17(3):275-304.

44. Martinez CR, Schwartz SJ, Thier M, McClure HH. A tale of two measures: concordance between the ARSMA-II and the BIQ acculturation scales among Latino immigrant families. *Psychol Assess.* 2018;30(4):459-473.

45. Diaz Garcia L, Savundranayagam MY, Kloseck M, Fitzsimmons D. The role of cultural and family values on social connectedness and loneliness among ethnic minority elders. *Clinical Gerontologist.* 2019;42(1):114-126.

46. Hayes A. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach,* 2nd ed. The Guilford Press; 2018.

47. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev.* 1977;84(2):191-215.

48. Rosenstock S, Chambers R, Lee A, Goklish N, Larzelere F, Tingey L. Self-efficacy and response-efficacy: critical components of sexual and reproductive health interventions targeting condom use intention among American Indian adolescents. *AIDS Care.* 2020;32(3):379-385.

49. Choi EPH, Fong DYT, Wong JYH. The use of the multidimensional condom attitude scale in Chinese young adults. *Health Qual Life Outcomes.* 2020;18(1):331.

50. Chereni A, Nyathi N, Mbizo J. Male partner involvement in health interventions: a systematic review of best practices in Sub-Saharan Africa. *J Pract Teach Learn.* 2022;19(1/2):87-113.

51. Nkwonta CA, Messias DKH. Male participation in reproductive health interventions in Sub-Saharan Africa: a scoping review. *Int Perspect Sex Reprod Health.* 2019;45(1):71-85.

52. Biton SJA. Advancing sexual and reproductive health and rights: an overview of the best practices in the Philippines. *Asian J Womens Stud.* 2020;26(1):114-127.

53. Lozano A, Estrada Y, Tapia MI, et al. Development of a family-based preventive intervention for Latinx sexual minority youth and their parents. *Cultur Divers Ethnic Minor Psychol.* 2022;28(2):227-239.

54. Tseng Y, Cheng C, Kuo S, Hou W, Chan T, Chou F. Safe sexual behaviors intention among female youth: the construction on extended theory of planned behavior. *J Adv Nurs.* 2020;76(3):814-823.

55. Damasceno CKCS, Santos FTG, Silva DMF, Monte Guimarães NL, de Moura Feitosa Veras J. Vulnerability of women to HIV infection. *J Nurs UFPE/Revista de Enfermagem UFPE.* 2017;3:1320-1325.

56. Ertl MM, Dillon FR, Tineo Cabrera YA, Verile M, Jurkowski JM, De La Rosa M. Sexual risk during initial months in US among Latina young adults. *AIDS Care.* 2018;30(3):353-360.