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Predictors of HIV enacted stigma among Chilean women

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Abstract

Aims and objectives—To investigate if socio-demographic factors, religiosity, HIV-related knowledge, Marianismo, history of having been tested for HIV, knowing someone who died of AIDS and HIV risk perception were predictive factors to HIV enacted stigma predictors among Chilean women.

Background—HIV infection is the number one cause of death among women during their reproductive years. In Chile, studies with people living with HIV demonstrate the existence of HIV-related stigma. However, limited evidence is available about the underlying causes of HIV enacted stigma that results in stigmatisation and discrimination.

Design—The current cross-sectional study is a secondary analysis of data collected to assess the impact of an HIV prevention intervention (Mano a Mano-Mujer) designed for Chilean women. A quasi-experimental design was used in the original study.

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Disclosure

The authors have confirmed that all authors meet the ICMJE criteria for authorship credit (www.icmje.org/ethical_1author.html): (1) substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, and (3) final approval of the version to be published.

Conflict of interest

The authors report no real or perceived vested interests that relate to this article that could be construed as a conflict of interest.

Methods—This study was conducted in two communities in Santiago, Chile. The sample for this study consisted of 496 Chileans between ages 18–49. Descriptive statistics and multiple regression were used for the analysis.

Results—Participants in the study reported high levels (77.8%) of HIV enacted stigma. Higher levels of HIV-related knowledge were associated with lower levels of HIV enacted stigma. Women with higher education had lower levels of HIV enacted stigma than women with elementary education. In addition, greater levels of *marianismo* (cultural belief that women should be passive, faithful, and devoted to family) were associated with higher HIV enacted stigma scores.

Conclusions—The findings reflected the presence of HIV enacted stigma among Chilean women. Identifying the significant predictors of HIV enacted stigma can help the nursing community to design HIV prevention interventions that include the reduction in HIV enacted stigma. HIV evidence-based prevention interventions should incorporate contents related to stigma to contribute to prevent HIV enacted stigma at individual and community levels in accordance with the bioecological model.

Relevance to clinical practice—The results of this study could serve to develop HIV prevention interventions that target the reduction in HIV enacted stigma.

Keywords

HIV; nursing; prevention; stigma; women

Introduction and background

Globally, at the end of 2012, the number of people living with HIV/AIDS (PLWHA) was approximately 35 million (UNAIDS 2013). The adult global HIV prevalence by the end of 2012 was 0.8%, with approximately 2.3 million new infections. Overall, the HIV-related death rate has decreased by 30% since 2005; however, globally, HIV continues to be one of the leading causes of death (Kaiser Family Foundation 2013). Currently, in Latin American and Caribbean nations there are 1.6 million of PLWHA, which represents more than 4% of the total number of people infected globally (UNAIDS 2013). In Chile, a country located on the western coast of Latin America, the number of PLWHA near the end of 2012 was around 69,860, which accounts for 0.4% of the total population of Chile (UNICEF 2013). The highest prevalence of HIV in Chile is among people between 20–29 years of age, with sexual contact representing the most common mode of HIV transmission. Heterosexual transmission of HIV in Chile has practically doubled in the last five years and now accounts for 93% of the transmission among women (UNAIDS 2012).

Worldwide, around 50% of all PLWHA are women (UNAIDS 2011). HIV infection is the number one cause of death among women during their reproductive years (Kaiser Family Foundation 2013). Some risk factors for HIV infection among women around the world include poor access to health services, gender inequalities, cultural factors and biological vulnerabilities that predispose women to HIV (Kaiser Family Foundation 2013). In Chile, roughly 5400 women over the age of 15 are infected with HIV (UNICEF 2013), with cultural factors and gender equality playing an important role in HIV transmission among

women (Cianelli *et al.* 2008). The pervasive aspects of gender inequalities and cultural factors are contributors to another important issue related to HIV in Chile: HIV enacted stigma (HES). The concept of stigma was introduced in 1963 by Goffman, who defined stigma as ‘undesired differentness’ (p. 5). A person labelled with a stigma is someone who is assumed to ‘be not quite human,’ and upon this ‘assumption we exercise varieties of discrimination, to which we effectively, if often, unthinkingly reduce his life chance’ (Goffman 1963, p. 6).

There are two main forms of stigma: felt and enacted (Bogart *et al.* 2008). Felt stigma is intrapersonal and results from the perception and fear of others’ reactions to the disease condition. Felt stigma is experienced by PLWHA (Herek 2007). For example, felt stigma is one of the reasons that PLWHA are very concerned about protecting their personal and health-related information (Alder *et al.* 2009). HIV enacted stigma is a real interpersonal experience and results in stigmatisation and discrimination (Alder *et al.* 2009). It is directed towards PLWHA and includes: discrimination; verbal, psychological, and physical aggression; isolation; and exclusion perpetrated by people from the community, members of the family, colleagues and friends, which is manifested in the form of avoidant behaviours (Herek 2007, Bogart *et al.* 2008). In other words, felt stigma is internal and is also called self-stigmatisation, while enacted stigma is external and also called discrimination (Gray 2002).

Predictors of HIV enacted stigma

Recent literature has suggested that HES could be associated with a series of factors, including the following: (1) HIV-related knowledge (Valencia-Garcia *et al.* 2008, Cianelli *et al.* 2011, Ugarte *et al.* 2013), (2) religiosity (Muturi & An 2010, Coleman *et al.* 2012), (3) self-care or history of having been tested for HIV (Pulerwitz *et al.* 2008), (4) knowing someone who died of AIDS (Holzemer *et al.* 2007, Sullivan *et al.* 2010), (5) educational level (Sullivan *et al.* 2010), (6) *marianismo* (Valencia-Garcia *et al.* 2008), and (7) HIV risk perception (Ugarte *et al.* 2013).

HIV-related knowledge—Overall, people who have less knowledge about HIV transmission modes, antiretroviral medications, and HIV prevention tend to be more likely to stigmatise those affected with the virus (Valencia-Garcia *et al.* 2008, Ugarte *et al.* 2013). A similar relationship was found in a sample of health care workers (Cianelli *et al.* 2011).

Religiosity—People who claim to have strong religious beliefs are more likely to stigmatise PLWHA (Coleman *et al.* 2012). Studies have also shown that these people believe that HIV is sent by God as punishment for ‘bad actions’ (Coleman *et al.* 2012).

History of having been tested for HIV—People who have never tested for HIV tend to show more negative attitudes towards PLWHA than people who have been tested for HIV (Pulerwitz *et al.* 2008, Genberg *et al.* 2009). One possible explanation is that people who have gone through the often highly stigmatising process of testing have become more sensitive towards those that are affected by the virus (Genberg *et al.* 2009).

Knowing someone who died of AIDS—Research has shown that people who know someone with HIV/AIDS have less tendency to stigmatise PLWHA. These people are usually more knowledgeable about HIV and therefore may have a more appropriate understanding about the concerns and fears of those affected by the virus (Sullivan *et al.* 2010).

Educational level—Lower education level has been associated with stigmatising behaviours towards those affected with HIV. This has been the case in studies done recently with general populations in South Africa, adolescent females in India, Iranians living in Australia and Chinese health care providers (Sullivan *et al.* 2010).

Marianismo—This is a dominant cultural value in Latin countries, which indicates that a woman should be passive, faithful and devoted to her husband and family. In addition, *marianas* are to be naïve regarding issues related to sex. Therefore, women who are believed to be good *marianas* show higher levels/rates of stigmatisation towards other women affected with the virus, adding to the misconception of infidelity being the cause of HIV infection (Cianelli *et al.* 2008, Valencia-Garcia *et al.* 2008).

HIV risk perception—People who have an elevated self-perception of HIV risk reported greater stigmatisation and discrimination towards PLWHA (Ugarte *et al.* 2013).

We hypothesised that the predictors mentioned above (socio-demographic factors, religiosity, HIV-related knowledge, Marianismo, history of having been tested for HIV and knowing someone who died of AIDS, and HIV risk perception) were predictive factors for HES among Chilean women.

Conceptual framework

In order to better understand the complexity of HES, an ecological model that explains the multiple levels associated with HES will serve as the conceptual framework. Ecological models contain levels which explore the interdependence among the individual, societal norms and community structure. Brofenbrenner's bioecological model will be used as a framework to discuss how specific predictors fall into each level and collectively impact HES towards PLWHA (Brofenbrenner 1979). This model depicts levels (or spheres), which are interconnected. The spheres are organised as concentric circles to illustrate the influence that factors at different levels can have on an outcome, such as HES. Change in one level may produce a change in the others, causing ecological transitions that shape human behaviours (Brofenbrenner 1979).

When evaluating the predictors of HES among Chilean women, the predictors of HIV-related knowledge, religiosity, history of having been tested for HIV, knowing someone who died of AIDS, educational level, *marianismo* and HIV risk perception fall into the four different levels of Brofenbrenner's bioecological model. The first level contains the individual or microsystem and is located within the centre. Predictors that are intrinsic to the individual can be found in this level (Mmari *et al.* 2009). Among the participants in this study, educational level and religiosity are factors intrinsic to an individual that may play a role in HES.

The second level is the mesosystem, which consists of interpersonal relationships with families and peers (Bronfenbrenner 1979, Mmari *et al.* 2009), as well as with schools and neighborhoods (Perrino *et al.* 2000). Given that a woman will need to interact with other people and other environments to know someone with HIV, this predictor falls into the mesosystem level. HIV risk perception refers to how an individual's perceived risk relates to behaviour and actual HIV infection (Napper, Fisher, & Reynolds, 2012). An individual might think that he/she may be at risk for HIV infection if engaged in risky behaviours or interaction with other individuals. Therefore, HIV risk perception falls into the mesosystem, where two or more microsystem environments have connected. HIV risk perception refers to how an individual's perceived risk relates to behaviour and actual HIV infection (Napper, Fisher, & Reynolds, 2012). An individual might think that he/she may be at risk for HIV infection, if engaged in risky behaviours or interaction with other individuals. Therefore, HIV risk perception falls into the mesosystem, where two or more microsystem environments have connected. The third level is the exosystem, which explores influences at the community level, such as the neighbourhood and school with which the individual is associated (Bronfenbrenner 1979, Mmari *et al.* 2009, Crosby *et al.* 2013). Among Chilean women, the predictors of HIV-related knowledge and having been tested for HIV belong in this level of the model. Women residing in the southeast areas of Santiago, Chile, obtain HIV-related information about topics such as transmission and prevention from health care workers, teachers and the media. These women may be dependant on community factors such electricity, transportation, access to schools and health care facilities, to gain such knowledge and get tested for HIV.

The last level of the bioecological model also refers to the macrosystem; however, Bronfenbrenner sought to examine beyond the community to explain the influence of larger social structures. This level examines national customs, values, resources, or laws (Bronfenbrenner 1979, Mmari *et al.* 2009, Crosby *et al.* 2013). Among Chilean women, *marianismo* appears in this level because it is a fundamental component of Latin culture and values.

The aim of the study

To investigate if socio-demographic factors, religiosity, HIV-related knowledge, Marianismo, history of having been tested for HIV, Knowing someone who died of AIDS and HIV risk perception were predictive factors to HES predictors among Chilean women.

Methods

A quasi-experimental design was used to test the impact of *Mano a Mano-Mujer* (RO1 TW006977 PI Cianelli), an HIV prevention intervention designed for Chilean women. The current study is a secondary analysis of data collected to test the impact of *Mano a Mano-Mujer*. Secondary analysis of data is the further analysis of an existing data set to address a different research question from which the dataset was originally collected, generating new interpretations and conclusions (Hewson 2006). Some advantages in using secondary analysis of data include the following: (1) saves time to the researchers that would otherwise be spent collecting data; (2) decreases research cost; (3) decreases errors and biases that

have been noted and rectified in previous analysis, thus increasing the data quality; (4) provides a larger sample than those that can be obtained or afforded by undertaking primary data collection (Goodwin 2012). For this study, baseline results will be reported. Other outcomes of the original study are in Cianelli *et al.* (2012).

The study was conducted in Santiago, Chile, specifically in two communities located in the southeast area of Santiago's metropolitan region. This region, together with Arica-Parinacota, Tarapacá and Valparaíso, has a large concentration of people living with HIV in Chile (Departamento de Epidemiología Ministerio de Salud de Chile 2013). The southeast area is one of the most affected by HIV infection in the Region Metropolitana (Chilean Ministry of Health, 2009). Considering their similar socioeconomic status, their high-risk profiles and the potential benefits for the community that their participation could offer, these communities were invited to participate in the study.

The sample for this study consisted of 496 women from two communities. In Mano a Mano, the two participating communities were randomised to the intervention or the delayed-intervention control condition. Individual-level randomisation was not used to avoid contamination between intervention and control groups. This was of special concern because the women lived within their communities where they frequently participated in other organisations and met informally to discuss what was happening in the community. Eligibility criteria were as follows: (1) Chilean woman from 18–49 years old, (2) living in one of the selected communities, and (3) reporting sexual activity within the six months prior to participation in the project. The recruitment was conducted by the research team in the two selected communities (e.g. community health centres, community events and community organisations). Face to face interviews were conducted to collect the data.

The questionnaire for the interviews contains close-ended items to assess: (1) socio-demographic factors (e.g. age, marital status, education), (2) Religiosity, (3) HIV-related knowledge, (4) attitudes (e.g. positive attitudes towards PLWHA, self-efficacy for HIV prevention behaviours), (5) HIV risk reduction behaviours (e.g. partner communication, condom use), and (6) mental health resources (e.g. self-esteem, the presence of depressive symptoms). The questions and scales contained in the questionnaire had been used in other studies with Hispanic women (Cianelli 2003, Peragallo *et al.* 2005). In this paper, the demographic and stigma measures collected at the baseline assessment will be presented.

Measurements

Sociodemographic factors—The collected demographic information included age, living with a partner, education, religion, employment and health insurance. The demographic questionnaire was adapted from a previous studies with Chilean and Hispanic women (Cianelli 2003, Peragallo *et al.* 2005).

Religiosity—This variable was measured using the question 'how important is religion for you?' Answers were: not important = 1, somewhat important = 2, very important = 3. The variable was dichotomised for the analysis (1 = very important and 0 = somewhat important/not important). This question was adapted from a previous study with Hispanic women (Peragallo *et al.* 2005).

HIV-related knowledge—This variable was measured using a 12-item scale, created by Heckman *et al.* (1996), that included questions about HIV transmission, prevention and consequences, plus three questions specific for Chileans used previously with Chilean populations (Cianelli *et al.* 2012). Each correct answer was given one point, resulting in a range of 0–15. Higher scores in the knowledge assessment represented higher level of HIV-related knowledge ($\alpha = 0.75$).

Marianismo—The Submissive Femininity scale pertaining to the Femininity and Masculinity scale (IMAFE) was used to measure the female stereotype of *marianismo*, defined as a ‘self-sacrificing’ woman characterised by dependence, submission and passive attitudes (Laracantu 1989, Martinez-Gomez *et al.* 2012). The scale includes 15 items that measure ‘self-sacrificing women’ personality traits (e.g. passive, unable to make plans, dependent, shy, resigned). For each item, women needed to self-describe their personality by answering how often they perceived the presence of a specific personality trait on a 7-point Likert scale (1 = never or almost never, 2 = few times, 3 = sometimes, 4 = half of the time, 5 = often, 6 = several times, to 7 = always). The total score is created by averaging the scores across all 15 items. A higher score represented ‘self-sacrificing women’ personality traits, culturally associated with *marianismo*. This instrument has been used in prior studies with Hispanic women, $\alpha = 0.74$.

History of having been tested for HIV—Participants were asked: have you ever had an HIV test? Responses were dichotomous yes or no. This question was adapted from a previous study with Hispanic women (Peragallo *et al.* 2005).

Knowing someone who died of AIDS—The following question was used to measure this variable: have you ever had a close friend or family member die of a drug overdose, gang violence, murder or any violent way, HIV/AIDS, or suicide? Participants answered yes or no. Only the HIV/AIDS-related deaths were reported in this publication. This question was adapted from a previous study with Hispanic women (Peragallo *et al.* 2005).

HIV risk perception—This variable was measured with the following question: How worried are you about getting HIV? Scores ranged from 1–3 (not worried = 1; somewhat worried = 2; very worried = 3). This question was adapted from a previous study with Hispanic women (Peragallo *et al.* 2005).

HIV enacted stigma—This variable was measured using a 7-item scale created by the research team of Cianelli (2003) to assess stigma attitudes towards people living with HIV, which was used previously with Chilean populations. Participants had three answer options (agree = 2, do not know = 1, and disagree = 0). Scores ranged from 0–14, and a higher score represented higher levels of HES. This variable was adapted from a previous study with Chilean women (Cianelli 2003).

Ethical considerations

The Institutional Review Board (IRB) of the Pontificia Universidad Católica de Chile approved this study. Informed consent was obtained from all participants prior to the

collection of data. All questions were answered appropriately. Participation in the study was voluntary. Participants could withdraw at any point during the study.

Statistical analysis

The data analysis was conducted using SPSS version 19.0; descriptive statistics and simultaneous multiple regression were used. To analyse the relationship between of the outcome variable (HES) and a group of independent variables or predictors, multiple regression analysis was conducted. In the analysis, HIV-related knowledge and *marianismo* were the independent continuous variables, and history of having been tested for HIV, knowing someone who died of AIDS, and religiosity were the independent dichotomous variables.

The dummy coded variables were educational level and HIV risk perception. All variables met the assumptions for the test. Statistical tests for collinearity were conducted to assess the quality of the linear relationships among the predictor variables. Tolerance and variance inflation factor analysis was conducted, demonstrating no multicollinearity among the predictors (tolerance ranged from 0.961–0.984 and a variance inflation factor ranged from 1.025–1.639).

Results

Demographics

Participants' demographic information are presented in Table 1. Most of the women were between ages 18–49 ($M = 32.32$, $SD = 9.11$). The average family monthly income was \$ 458, $SD = 29.1$ (range = \$0–\$2400). The majority of the women were housewives (52.9%), and 27.02% were employed. Around 72.2% of the Chilean women were living with their partner. The majority of the women (57.9%) self identified as Catholic, and 21% identified as evangelic. The majority of the women (60.8%) considered religion as very important, and only 39.2% mentioned that religion was somewhat or not important. The vast majority have health insurance coverage (88.5%). About 61.6% of the women had high school education, 24.2% had elementary school education and 14.2% had college or vocational education.

HIV-related knowledge

The mean score for HIV-related knowledge about HIV transmission, prevention and consequences was $M = 8.9$, $SD = 2.5$ (range 1–15). Forty percent (40%) of the women scored 8 points or less on this scale. The following questions obtained the lowest percentage of correct answers: Most of the people who carry the AIDS virus look and feel healthy (21.9%), condoms cause pain/less pleasure for the men (24.4%), and latex is the best material that a condom can be made of for protection against AIDS virus (27.7%). The majority of the women answered correctly to the statements that cleaning injection needles with water is enough to kill the AIDS virus (96.0%) and birth control pills can protect against the AIDS virus (88.5%).

Marianismo

The mean score for *marianismo* (submissive femininity) was 3.2 with a standard deviation of 0.93 (range 1–6). More than forty seven percent (47.4%) of the Chilean women scored 3 points or less on this scale. The majority of the participants mentioned that submissive femininity includes the personality characteristics: simplistic (51.1%), passive (48.8%), and hesitant (46%). The least mentioned characteristics were unable to plan (16.9%) and coward (23%). Women mentioned that these characteristics were present between half of the time and always or almost always.

History of having been tested for HIV—Participants (55.8%) mentioned that they had been tested for HIV. Forty three percent (43.8%) mentioned that they had not been tested for HIV and only two women (0.4%) did not know if they have been tested for HIV. Of the women who have been tested, the majority (53.46%) has been tested once in their lives.

Knowing someone who died of AIDS—Sixty three (12.7%) women mentioned that they knew someone who died from AIDS. Only four women (0.8%) knew more than one person who died of AIDS.

HIV risk perception—Almost a third of the women (29.6%) mentioned that they were very worried about getting HIV/AIDS. Only 37.7% mentioned that they were somewhat worried, and 32.7% mentioned that they were not worried about getting HIV/ AIDS.

HIV enacted stigma—The mean score for HES was 4.06 (SD = 1.97) (range 0–12). Only 36.4% of the women had 3 points or less on this scale.

Predictors of enacted HIV-related stigma

A simultaneous linear multiple regression analysis was used for this analysis. Six predictor variables were included in the model to establish the correlates of HES (Table 2). The predictors – religiosity, education, HIV-related knowledge, history of having been tested for HIV, knowing someone who died of AIDS, marianismo and HIV risk perception – were entered simultaneously into the model. Due to missing data, 38 cases were excluded from the analysis; a total of 458 cases were included in the analysis.

The multiple regression analysis showed that the omnibus test was statistically significant, $R^2 = 0.126$, $F(9, 448) = 7.145$, $p < 0.001$. The six explanatory variables together accounted for 12.6% of the variance in HES. According to Cohen's criteria (Cohen 1988), the model explains a moderate percentage of variance in HES. After controlling for the other predictors in the model, higher levels of HIV-related knowledge were associated with lower levels of HES ($b = -0.099$, $p = 0.011$). In addition, women with high education had lower levels of HES than women with only elementary school education ($b = -0.995$, $p < 0.001$ and $b = -1.476$, $p < 0.001$, respectively). Furthermore, greater levels of *marianismo* were associated with higher HES scores ($b = 0.201$, $p = 0.042$).

Religiosity—($b = -0.066$, $p = 0.714$), history of having been tested for HIV ($b = -0.022$, $p = 0.900$) and knowing someone who died of AIDS ($b = -0.111$, $p = 0.680$) were not

significant predictors of HES. In terms of HIV risk perception, there were no statistically significant differences in HES scores between women who were not worried about getting HIV and women who were very worried ($b = 0.136$, $p = 0.539$) and somewhat worried ($b = -0.044$, $p = 0.834$).

Educational level—(high school and more than high school education) had a medium effect on HES ($\beta = -0.224$ and $\beta = -0.262$ respectively). Once the effect of other variables were controlled in the model, HIV-related knowledge ($\beta = -0.124$) and *marianismo* ($\beta = 0.094$) had small effects on HES. The rest of the predictors' effects (religiosity, history of having been tested for HIV, knowing someone who died of AIDS and HIV risk perception) were not significant.

Discussion

HIV enacted stigma

Chilean women that participated in this research reported HES (77.8%). This finding is important because it means that HES is still an issue in Chile (Vidal *et al.* 2005). Stigma has deep negative role in HIV prevention and treatment. For instance, stigma as noted by Katz *et al.* (2013) can constitute an obstacle for HIV testing and treatment adherence among HIV positive people. In addition, high levels of HES could encourage negative reactions towards people living with HIV (e.g. discrimination, rejection, verbal aggression and insults) (Bogart *et al.* 2008). Three of the predictor variables proposed in this study (*marianismo*, HIV-related knowledge and level of education) were significant predictors of HES. These variables should be taken into consideration to develop nursing prevention interventions designed to decrease HES, thus facilitating HIV prevention and treatment.

HIV-related knowledge

Despite widespread media attention on HIV, in this study Chilean women reported low HIV-related knowledge. Of the women sampled, 40% scored 8 points or less on HIV-related knowledge (range of 1–15). HIV-related knowledge, in this study, was a significant predictor of HES. Several studies have found HIV-related knowledge as an important factor to be taken into consideration in design interventions to decrease HES. High HIV-related knowledge is considered the first steps in HIV prevention, and high levels of HIV-related knowledge are correlated with a decrease in HES (Valencia-Garcia *et al.* 2008, Ugarte *et al.* 2013).

Increasing public knowledge, effective education within the community, and schools that increase HIV-related knowledge are aspects to which nurses can contribute to reduce HES. This is congruent with Bronfenbrenner's model (1979) in which HIV-related knowledge is part of the third level, referred to as the exosystem, which is at the community level, such as the neighbourhoods and schools where nurses are present. This is a probable representation of the first place where people can learn about HIV and can also represent the first level of nursing action to initiate the fight against HES.

Marianismo

For women, the role of *mariana* in some cases provides social recognition and respect in the Hispanic community. For these women, gender expectations develop along the course of lives in which endorsing promiscuity or being accused of it invites socially sanctioned lack of respect and is related with stigma and discrimination (Valencia-Garcia *et al.* 2008). Women are recognised as good *marianas* when they remain sexually naïve and passive in their relationships. As noted by Valencia-Garcia *et al.* (2008), *marianas* often stigmatise women living with HIV, both due to the lack of knowledge about sexuality, sexually transmitted diseases, and HIV, and because *marianas* need to keep a distance from women who may represent a threat to the position that they have in the society.

According to this study, women with high levels of *marianismo* would have high levels of HES. This is also congruent with Bronfenbrenner's model (1979) in which *marianismo* is part of the last level referred to as macrosystem and where cultural values such as *marianismo* are located (Bronfenbrenner 1979, Mmari *et al.* 2009, Crosby *et al.* 2013).

Educational level

In this study, educational level was a significant predictor for HES. This finding is congruent with prior research that found an association between lower education and HES (Sullivan *et al.* 2010). In the bioecological model, educational level is part of the microsystem or first level, which is located within the centre of the model. Factors that affect the individual directly are located here (Mmari *et al.* 2009).

The analysis of the Bronfenbrenner's bioecological model helps to understand the complexity and multidimensionality of HES. In this study, significant HES' predictors are educational level (microsystem), HIV-related knowledge (exosystem) and marianismo (macrosystem). These findings demonstrate the interconnection between the significant predictors in the model. Consequently, a multidimensional approach that considers the interconnection of the Bronfenbrenner's levels should be used to design and implement effective strategies to prevent HES.

Other potential predictors

In this study, history of having been tested for HIV, knowing someone who died of AIDS, and HIV risk perception were not found to be significant predictors of HES. Further investigations of these variables need to be conducted to explore HES in the Chilean culture.

Limitations

One study limitation is the cross-sectional design of this study. In addition, women in the study were from low-income communities that can affect generalisability to other groups in Chile, and that data was collected using women's self-reports.

Relevance to clinical practice

The outcomes of this research contribute to clinical practice by examining predictors of HES among women. Identifying the significant predictors of HES can help the nursing

community to design HIV prevention interventions that reduce HES. In addition the use of the bioecological model explains where each of the significant predictors are located in the multiple levels of the model and the interaction that may exist among them.

Understanding cultural patterns is an important component of nursing clinical practice and research. This study illuminates a complex aspect of the Latin American culture regarding the endorsement of HES related to the cultural value of *marianismo*. The recognition of *marianismo* as a predictor of HES has important implications for HIV prevention programmes specifically seeking to decrease HES and increase the empowerment of women and change stereotypes about feminism in the Latino culture. Findings from this study can offer a starting point to encourage nurses to conduct further research in other regions of Latin America to investigate HES and to develop clinical interventions culturally tailored to prevent this issue in other countries.

Nurses must aim to contribute to the decrease in HES to reduce the incidence of HIV and assist with treatment compliance of PLWHA. Measures that diminish HES help promote HIV prevention and treatment. This is relevant because HES constitutes a barrier to implement HIV prevention and increase HIV treatment adherence among PLWHA.

Conclusions

More research is needed to explore in depth other variables that could be present in the mesosystem of the bioecological model (e.g. knowing someone who died of AIDS and HIV risk perception). Decreasing stigma is a vital aspect to take into consideration when attempting to decrease HIV infections.

HIV evidence-based prevention intervention should incorporate content related to stigma to contribute to prevent HES at individual and community levels in accordance with the bioecological model. In addition, it is critical for nursing to take the steps recommended by the United Nations Economic and Social Council (2010): (1) connect intervention activities to the domains of stigma; (2) consistently evaluate stigma in community and clinical settings; and (3) connect stigma reduction with HIV prevention, treatment, and care in different settings. All these activities can increase the scientific knowledge about nursing evidence-based intervention to reduce HES at the national and international levels.

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What does this paper contribute to the wider global clinical community?

- The findings of this research show that HIV enacted stigma continues to be an issue.
- This study finds that *marianismo*, HIV-related knowledge, and level of education are significant predictors of HIV enacted stigma.
- The results of this study could serve to develop HIV prevention interventions that target the reduction in HIV enacted stigma.

Table 1

Characteristics of Chilean women in the study (n = 496)

Variables	M (SD)	n	%
Age	32.32 (9.11)	–	–
Level of education*			
Elementary	–	119	24.2
High school	–	303	61.6
More than high school (college and vocational education)	–	70	14.2
Relationship status			
Not living with a partner	–	138	27.8
Living with partner	–	358	72.2
Employed [†]	–	134	27.02
Family income <\$400/month (\$210,000 Chilean pesos)	–	299	60.3
Religiosity			
Very religious	–	296	60.8
Somewhat or not religious	–	191	39.2
Health insurance	–	439	88.5

Frequency (%) for positive answers shown for dichotomous variables.

* Valid responses (percentages) were reported.

[†] Includes sporadic and stable jobs.

Table 2

Simultaneous multiple regression analysis for variables predicting HIV enacted stigma ($n = 496$)

Predictors	Partial correlations	B	SE	β	p
HIV-related knowledge	-0.119	-0.124	0.612	-0.099	0.011*
Religiosity	-0.017	-0.016	0.180	-0.066	0.714
History of having been tested for HIV	-0.006	-0.006	0.179	-0.022	0.900
Knowing someone who died of AIDS	-0.020	-0.018	0.268	-0.111	0.680
High school education [†]	-0.203	-0.244	0.227	-0.995	<0.001*
More than high school education [†]	-0.213	-0.262	0.319	-0.1476	<0.001*
<i>Marianismo</i>	0.096	0.094	0.099	0.201	0.042*
HIV risk perception: somewhat worried about getting HIV [‡]	-0.010	-0.011	0.211	-0.044	0.834
HIV risk perception: very worried about getting HIV [‡]	0.029	0.032	0.221	0.136	0.539

* $p < 0.05$.

[†] Elementary education as reference or comparison group.

[‡] not worried about getting HIV as reference or comparison group.