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Santa Barbara

Bisexuals living in Chinese cultures: Characteristics, internalized stigma, and psychosocial health risks

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Counseling, Clinical and School Psychology

by

Chongzheng Wei

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ABSTRACT

Bisexuals living in Chinese cultures: Characteristics, internalized stigma, and psychosocial health risks

by

Chongzheng Wei

Objectives: This dissertation includes two studies. Study one aims to uncover sexual identity development and examine the differences in psychosocial health outcomes across various age, gender, and regional groups. Additionally, study two explores distinctive internalized stigma profiles that impact bisexual people's psychosocial health outcomes and inspect the moderating effect of the latent classes of internalized stigma on the relationship between demographic characteristics of Chinese bisexuals (e.g., region, gender, age) and their health outcomes.

Methods: An internet-based survey was administered to 685 respondents, from June to August 2021, reached primarily via lesbian, gay, bisexual, and transgender community organizations and professional networks. Participants reported their a battery of measures such as demographics, identity milestones, internalized stigma, and psychiatric symptoms.

Results: Study one found that significant gender, and regional differences were observed regarding bisexual identity milestones. Individuals who were older, transgender and nonbinary identifying, and based in Taiwan disclosed their sexual identity more. Alarmingly, all respondents reported clinically elevated depression and anxiety symptoms, with a majority experiencing moderately severe depression (60%) and moderate or severe anxiety

(80%). Approximately half of respondents contemplated suicide in the past year. Transgender and nonbinary bisexual individuals faced a higher risk of psychiatric symptoms and reduced subjective well-being compared to cisgender respondents, but having enhanced self-esteem served as a significant protective factor.

In study two, latent profile analysis identified three bisexual subgroups: *Self-appreciating* (85.83%), *Self-doubting* (7.56%), and *Self-dissonant* (6.61%). Cisgender men, transgender and non-binary persons were significantly more likely than cisgender women to be in *Self-doubting* relative to *Self-appreciating*. Religious respondents were significantly more likely to be in *Self-doubting* relative to *Self-appreciating*. Respondents based in Taiwan were less likely to be in *Self-doubting* relative to *Self-appreciating*, compared to those based in mainland China. *Self-appreciating* individuals reported the lowest levels of depression, and the greatest levels of subjective well-being, and outness. The *Self-doubting* group reported significantly higher levels of outness than *Self-dissonant*. There were no significant group differences for LGBTQ community connectedness. Additionally, greater levels of IB, but not IH, was correlated with reduced well-being and more anxiety, depression, and suicidal ideation (r = -.22 to .08). Finally, internalized stigma latent classes influenced the relation between depression and region. Residing in Hong Kong was beneficial to *Self-doubting* and *Self-dissonant* participants since their depression levels did not increase compared to the *Self-appreciating* group, as those who lived in mainland China did. There were no significant moderating effects of community connectedness.

Implications for future research, clinical interventions, and public health policies were discussed.

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Chapter 1 Rationale

Population-based research has consistently found that over half of lesbian, gay, and bisexual (LGB) people identify as bisexual (Kann et al., 2016; Richters et al., 2014; Zaza et al., 2016b). Nationwide, 8% of American youths and 4% of American adults identify as bisexual (Human Rights Campaign Foundation, 2021; Redfield et al., 2017). As China is the most populated country in the world, it is likely to also have the largest bisexual population in the world. One study found the prevalence of bisexuality in a stratified random sample of secondary students in Hong Kong was 2.6% in boys and 3.7% in girls, respectively (Zhang et al., 2017), which is nearly half of the percentages in American youths (i.e., 8%). Given that there are no population-based studies that estimated the size of LGB adults in Chinese regions, we use half of its percentage among American adults (i.e., 4%) to have a conservative estimation of the size of bisexual individuals in China. Extrapolating this percentage (i.e., 2%) to China's population of over 1.4 billion, we estimate that around 30 million bisexuals are living in China.

Despite being the majority of LGB communities, this vast number of bisexual individuals is significantly understudied and underserved in the West (Bieschke et al., 2007; Israel, 2018; Kan & Wallace, 2020). Admittedly, even less research and services are available about bisexual communities living in Chinese cultures, although there are significantly more bisexual people.

Research evidence has confirmed that bisexual individuals experience the greatest risks for psychological problems, including depression, anxiety, and suicidality, compared to other sexual orientations (Blosnich et al., 2016; Bostwick et al., 2010; Feinstein & Dyar, 2017). Bisexual people also have elevated risks for physical health conditions, such as

arthritis and obesity (Dyar et al., 2019; Katz-Wise et al., 2017). Furthermore, bisexual people experience heightened risks of encountering interpersonal violence, contracting sexually transmitted infections, and engaging in substance misuse (Feinstein & Dodge, 2020; Snyder et al., 2018; Whitfield et al., 2021; Zhang et al., 2017). Chinese bisexual individuals, compared with lesbians and gay men, were more likely to report identity uncertainty, conceal their sexual orientation, and have a weaker sense of connection to the LGBT community, which were in turn associated with greater affective symptoms and poorer mental well-being (Chan et al., 2020).

These health disparities facing bisexual communities are likely due, in part, to external discrimination and psychological mechanisms. Bisexual people experience sexual orientation-based discrimination from both straight and lesbian/gay communities, bisexual invisibility/erasure, and a lack of bisexual-affirmative support (Brewster & Moradi, 2010; Dyar & London, 2018; GLAAD Media Institute, 2022; Ross et al., 2018). Living with insufficient support and visibility, bisexual people inevitably feel certain levels of loneliness, which mediated the associations between minority stressors (Meyer, 2003), psychological distress, and their heightened risks of suicidality (Mereish et al., 2017). In addition to external types of discrimination, two psychological mechanisms may contribute to these health disparities: internalized stigma (IS) and community connectedness. These two psychological mechanisms are important to be investigated because they are possible points of intervention to address bisexual health disparities.

Bisexual people experience two aspects of internalized stigma, i.e., internalized homonegativity (IH) and internalized binegativity (IB), which contribute to their health disparities. IH derives from living in a heteronormative world where sexual and romantic

desires toward the same gender are stigmatized, discouraged, and prohibited by many legal and religious entities. Consequently, bisexual people can internalize this sense of homonegativity that is associated with heightened risks of anxiety, depression, low self-esteem, relationship problems, and substance misuse (Igartua et al., 2003; Ritsher et al., 2003; Szymanski & Kashubeck-West, 2008; Wang et al., 2021). Furthermore, IB reflects the acceptance of negative views about bisexuals as people who have an illegitimate sexual identity or are regarded as morally intolerable (Mohr & Rochlen, 1999). This sense of immorality is also applicable to lesbians and gay men, while bisexual people often deal with more accusations related to the illegitimacy of their sexual identity from both straight and lesbian/gay communities. Brewster and Moradi (2010) conceptualized anti-bisexual experiences within three broad domains of prejudicial treatment from heterosexual, lesbian, and gay people: (1) sexual orientation instability (e.g., "*people have addressed my bisexuality as if it means that I am simply confused about my sexual orientation*"); (2) sexual irresponsibility (e.g., "*people have treated me as if I am obsessed with sex because I am bisexual*"); and (3) interpersonal hostility (e.g., "*people have not wanted to be my friend because I am bisexual*").

Living in a society filled with these anti-bisexual experiences, bisexual people unavoidably develop a certain degree of internalized binegavity that is associated with elevated depression and psychological distress, risky behaviors, decreased psychosocial well-being, low self-esteem, and relationship dissatisfaction (Brewster & Moradi, 2010; Lambe et al., 2017; Paul et al., 2014; Taylor et al., 2019; Wei & Israel, 2023). Although both IH and IB have been found associated with bisexual people's worse psychosocial health outcomes, it remains unclear how each of these contributes to bisexual health disparities and how they

interact with each other. In order to design effective clinical interventions, it is vitally important to better understand these mechanisms.

Despite facing stigmas and discrimination, bisexual individuals exhibit various ways of coping and establishing social support. At the individual level, stigma awareness and self-esteem buffered the negative impact of sexual orientation-related discrimination on subjective well-being among LGB individuals (Douglass et al., 2017). Some researchers found that disclosure of one's sexuality can be a protective factor for LGB communities, which is associated with greater psychological well-being (Brownfield & Brown, 2022; Roberts & Christens, 2021), and less internalized sexual stigma (Sommantico et al., 2018). However, being more open about one's sexual orientation can also have negative consequences for bisexual individuals but not for gay/lesbian individuals (Feinstein et al., 2019). At the minority group level, LGBTQ community connectedness, especially within the bisexual community, can be protective to curtail the harmful effects of anti-bisexual stigma (Lambe et al., 2017; Mason et al., 2015). Nonetheless, participation in and connection with the LGBT community were also found significantly associated with increased substance use involvement among sexual minorities (Demant et al., 2018). Additionally, some bisexual individuals use coping strategies that can have negative impacts on their physical and mental health, such as substance use (Demant et al., 2018) and risky sexual behaviors (Jeffries IV, 2014). It is important to develop a strong understanding of bisexual people's coping strategies and resources in order to serve these marginalized populations.

Despite progress to uncover bisexual health disparities in Western countries, little is known about bisexual experiences with internalized stigma and psychosocial risks in Eastern countries, especially in Chinese cultures. In my dissertation, I use the term "Chinese

bisexuals" to include bisexual people living in Chinese cultures which encompass three regions - Mainland China, Hong Kong, and Taiwan. While social and geopolitical differences exist among these three regions, they share the same ancient Chinese history and Chinese cultural values, such as Confucianism and filial piety, as well as similar queer cultures in LGBTQ communities. For example, the term *tongzhi*, a gender- and status-neutral form of addressing people in Communist China, is commonly used in these three regions to describe same-sex love and the LGBTQ communities (Lau et al., 2017). When it comes to social acceptance of LGBTQ populations, however, these three Chinese regions hold different stances, given their specific social and political contexts. Globally, Mainland China is ranked at 100 out of 175 countries and geographic locations, whereas 32 for Hong Kong, and 42 for Taiwan (Flores, 2021). Same-sex marriage was legalized in Taiwan in 2019, whereas similar legal protections are not yet available in Hong Kong and Mainland China. Owing to differences in institutional policies and social acceptance, the development and availability of bisexual community resources also vary across three regions, which significantly impact bisexual people's coping strategies and resources. Studies have shown that structural stigma (e.g., discriminatory laws, policies, and community attitudes) toward LGBT individuals predicts low life satisfaction, lower life expectancy, and adverse health outcomes among LGBT people (Bränström & Pachankis, 2021; Hatzenbuehler, 2014, 2017). Nonetheless, to date, no research has investigated regional differences regarding bisexual health, even though this evidence is essential to inform public health policies, clinical services, and LGBTQ community movements.

Bisexual people experience unique challenges in Chinese cultures. LGBT people in China experience rejection and discrimination most frequently from family, followed by

school and workplace (UNDP, 2016). Given the grave burden to fulfill heterosexual expectations and filial piety from family and society, many Chinese gay men and lesbians marry heterosexual partners and do not disclose their sexual orientation (Ren et al., 2019), and a large number of them maintain the cultural performances of *xinghun* (形婚), or contract marriage between a gay man and a lesbian (Huang & Brouwer, 2018). Identity disclosure can be a risk factor for family violence in China, as a study found that Chinese gay men and lesbians who disclosed their sexual orientation were 1.77 times more likely to experience family violence (Suen et al., 2019). Furthermore, even though negative experiences and harmful stigmas bisexuals encounter are different from that of gay men and lesbians, the measurement of internalized stigma in China has solely focused on internalized homophobia (Ren & Hood, 2018). Wei & Israel (2023) developed the Chinese Internalized Binegativity Scale (CIBS) that revealed six salient factors of IB: a) *illegitimacy*, bisexual people's doubts about the validity of bisexuality (e.g., "bisexuality is just a phase"); b) *Monosexism,* bisexuals' self-invalidating feelings regarding their attraction towards more than one gender (e.g., "*It's a burden that I am attracted to people of more than one gender"*); c) *Aversion,* feelings of guilt and degradation related to bisexuality which can be exacerbated in cultures with rigid gender roles and heteronormativity (e.g., "*I think I am filthy because I am attracted to people of different genders*"); d) *Irresponsibility,* the stigma that bisexuals are promiscuous and untrustworthy in relationships and the LGBTQ community at large (e.g., "*bisexuals cannot be loyal to only one partner*"); e) *Identity Affirmation*, self-acceptance, and pride in one's bisexuality. Finally, this measure unveils a culturally salient factor that has not been identified in Western studies about IB - *Family Shame,* which captures the impact of familism on bisexuals' attitudes toward their sexual identity (e.g., "*Being bisexual brings*

shame to my family"). This measure captured both common stigmas for LGB persons (e.g., *Immorality, Family Shame*) and struggles unique to bisexuals (i.e., *Monosexism*, *Irresponsibility*).

Building on what we know from studies conducted in the U.S., and this understanding of Chinese cultures, I aim to develop a robust understanding of Chinese bisexuals' challenges and strengths. To the best of my knowledge, no study has described the characteristics of Chinese bisexuals across three Chinese regions, and very limited evidence is available about their psychosocial challenges and coping resources. Shedding light into this vast and invisible community of Chinese bisexuals is an instrumental step in combatting stigma and informing clinical interventions.

Research Questions

This dissertation project intends to describe the characteristics of Chinese bisexuals, study the impact of internalized stigma on mental health risks (e.g., depression), and understand their community connectedness, at the intersection of culture, gender, and sexual identity. I plan to examine the differences in psychosocial health outcomes across various age, gender, and regional groups. Exploratory analysis will investigate differences in psychosocial health and coping mechanisms in terms of gender and age. In addition:

1) Given the relatively high social acceptance and legal protections for LGBT people in Taiwan, I hypothesize that bisexual people living in Taiwan with more societal acceptance and legal protections may have better psychosocial health outcomes (e.g., less depression, anxiety) than those living in Mainland China;
2) I hypothesize that bisexual individuals living in Taiwan may have higher levels of community connectedness than those living in Mainland China.

While consistent research evidence has confirmed the correlation between negative health outcomes and internalized stigma experienced by bisexual individuals, research has traditionally examined IH and IB in isolation. In addition, no research has uncovered the unique and complex nuances regarding the extent to which bisexuals internalize both homonegativity and binegativity in the context of Chinese cultures. This study aims to fill in this gap by exploring if different components of IB and IH interact and create distinctive internalized stigma profiles that impact psychosocial health outcomes among Chinese bisexuals, such as depression, anxiety, and self-esteem. Based on the minority stress model (Meyer, 2003) and prior research, I hypothesize that different configurations of internalized stigma profiles will emerge. Given the dearth of studies examining the interactions between IB and IH in Chinese cultures, explicit hypotheses are not warranted. More broadly, it is hypothesized that low levels of IS will be associated with fewer psychosocial health risks and more resilience, while high levels of IS will be related to more psychosocial health risks and less resilience. Furthermore, this research project aims to inspect the moderating effect of the latent classes of internalized stigma on the relationship between demographic characteristics of Chinese bisexuals (e.g., region, gender, age) and their health outcomes.

Finally, this study aims to discern how Chinese bisexuals' community connectedness impacts the relationship between various profiles of internalized stigma and psychosocial health outcomes (i.e., depression and anxiety), with a hypothesis that LGBT community connectedness moderates the correlation between IB and psychosocial health outcomes.

Chapter 2 Literature Review

What Is Bisexuality?

Bisexuality defies a binary system of sexuality and attraction. As defined by prominent bisexual activist Robin Ochs, bisexuality is "the potential to be attracted—romantically and/or sexually—to people of more than one sex and/or gender, not necessarily at the same time, not necessarily in the same way, and not necessarily to the same degree" (Ochs, 2005, p. 8). This definition is widely accepted for its diversity and inclusiveness. In addition, the term "bisexual umbrella" is commonly used to include a variety of non-monosexual identities (e.g., pansexual, queer), sexual behaviors, and forms of attraction (Flanders, 2017).

Bisexuals outnumber lesbians and gay men combined. Based on the 2015 National Youth Risk Behavior Surveys (YRBS) conducted in the U.S., 2.0% identified as gay or lesbian, 6.0% identified as bisexual, and 3.2% were not sure of their sexual identity (Kann et al., 2016). As such, there are an estimated 321,000 high school students who are gay or lesbian, 964,000 students that are bisexual, and 514,000 students who are unsure of their sexual identity in the U.S. (Zaza et al., 2016a). Among American adults, 4% identify as bisexual in a national household probability survey (Human Rights Campaign Foundation, 2021). Furthermore, in the Australian Study of Health and Relationships, bisexual identity was reported by 1.3% of men and 2.2% of women, while 5.8% of males and 14.2% of females reported non-monosexual attraction. By contrast, only 2.1 % of males and 1.4% of females reported predominant or exclusive homosexual attraction (Richters et al., 2014). In a study with a stratified random sample of secondary school students in Hong Kong, the

prevalence of bisexuality was 2.6% in boys and 3.7% in girls, and the prevalence of homosexuality was 1.5% in boys and 1.8% in girls (Zhang et al., 2017).

Studies also found that women are more likely than men to report any non-heterosexual identity, experience, and attraction (Richters et al., 2014). As well, young people are more likely to adopt a non-heterosexual identity which has increased by 41.4% between 2015 (8.3%) and 2019 (11.7%) among youths in the U.S., with a more pronounced increase in girls than boys (Rapoport et al., 2021).

Social and Historical Contexts regarding Bisexuality in Chinese Cultures

Only in recent years has bisexuality in Chinese societies gained slightly more visibility in LGBTQ communities, thanks to volunteer-based grassroots organizations' efforts. Similar to a long history of same-sex eroticism in Ancient Greece and Imperial Rome, same-gender love has long been documented in Chinese cultures, especially the male homosexual traditions (Chiang, 2014). For instance, almost all the emperors of the last two centuries B.C. had "male favorites." (Long, 2015; Seymour, 1992). The widespread euphemism "the passion of the cut sleeve" is used to refer to same-gender love after Emperor Ai in Han Dynasty (202 B.C. – 220 A.D.) sliced his shirt rather than wake the lover who was lying on it. However, Emperor Ai was not described as bisexual, since he also had many wives and concubines, which illustrates the erasure of bisexuality. In ancient Chinese history, homosexuality and heterosexuality exist in parallel to fulfill responsibilities and expectations for Chinese family values (Cheng, 2018). Bisexual men's homosexuality is tolerated so long as they can produce offspring with their wives. Additionally, different from modern Western cultures, which classify people into homo-hetero binarism, the Chinese sexual world was constructed predominantly along hierarchical class lines (Chou, 2001). Typically, the upper-

class adult male with wealth and power could sexually dominate social inferiors, women or men, without carrying severe social stigmas of being a homo/bisexual.

Romantic and sexual relationships between women were also depicted in Chinese literature, art, and relics, dating back to as early as the Former Han (200 B.C.), although most ancient texts illustrate male-male relationships rather than same-gender relationships for women or transgender people's experiences (Long, 2015). Polygamy was a common practice in Chinese history, especially for men from higher social classes. Living in a patriarchal society, men dominated important social roles, and women were expected to carry out their gender roles as wives and mothers, obey their fathers, husbands, and sons, and be modest and moral in their actions and speech, according to traditional Confucian concepts of "three obediences" (*san cong*) and "four virtues" (*si de*). Besides, sexual acts between women do not threaten procreation, and intimacy between women was tolerated tacitly by their husbands in order to maintain domestic harmony and preserve their sexual energies which cultivate longevity according to Taoist theory (Cheng, 2018). Furthermore, the criminalization of homosexuality in modern China mostly referred to sodomy or sexual acts between men, there have never been laws governing female homosexual conduct in Mainland China and Hong Kong (Kong et al., 2021), which reflects the ignorance of female homosexuality in Chinese cultures.

While social and geopolitical differences exist between Mainland China, Hong Kong, and Taiwan, these three regions share the same ancient Chinese history and Chinese cultural values, such as Confucianism and filial piety, as well as similar queer cultures in LGBTQ communities. In Chinese queer theory, the "Chinese" is not limited by geographical location but refers to "the capacity of queer theory to engage questions of Chineseness" in the context

of sexuality, gender, and the quandary of the political standoff (Liu, 2015, p. 41). In fact, modern queer history in these three Chinese cultural regions has intimate connections. The term *tongzhi* was used by Edward Lam, curator of the first Hong Kong Lesbian and Gay Film Festival in 1989 to signify same-sex love (Lau et al., 2017), which was soon popularized among the LGBT communities in Hong Kong and Taiwan, and later flourished in Mainland China. Originally, *tongzhi* was a gender- and status-neutral form of addressing people in Communist China, also can be translated as comrade. Additionally, *Tong* is exact the same character as *tongxinglian*, homosexuality. This appropriation by the Chinese LGBT communities is analogous to "the parodic resignification of the insult 'queer' into a means of self-empowerment in US history." (Liu, 2015, p. 41). Additionally, although the Western imported term LGBT is commonly used, the LGBT communities can be referred to as *tongzhi* communities in the Chinese context. Furthermore, *lala*, a popular term that stands for lesbians in Mainland China was imported from Taiwan in the 1990s. *Lala* originated from a critically acclaimed novel *The Crocodile's Journal* which has a lesbian character named *lazi* (Liu, 2015).

When it comes to social acceptance of LGBTI populations, however, these three Chinese regions have different stances, given their respective social and political contexts. Globally, Mainland China is ranked at 100 out of 175 countries and geographic locations, whereas 32 for Hong Kong, and 42 for Taiwan (Flores, 2021). LGBTQ communities' everyday lives are significantly impacted by the attitudes and beliefs of those around them. China remains less accepting of LGBT individuals than many other countries, while Hong Kong and Taiwan are more accepting than most geographical locations. Low levels of societal acceptance were found related to the prevalence of bullying and violence, physical

and mental health problems, discrimination in employment, and underrepresentation in positions of civic leadership (Flores, 2021). Below, I briefly recount the social, historical, and political context that constitutes distinct environments where bisexuals are living, since a detailed description of queer history in these three regions is beyond the scope of my dissertation.

Mainland China

Contrary to ancient China's obliviousness to co-existing heterosexuality and homosexuality, modern China holds more hostility to homosexuality and bisexuality. Although LGBTQ political movements have made significant progress in recent years, particularly, the decriminalization of homosexuality in 1997 and its depathologization in 2001 according to the Chinese Classification of Mental Disorders, third edition (CCMD-3), social and political obstacles persist for *tongzhi* communities' route to gaining full societal acceptance. Overall, the general population still holds negative attitudes toward same-sex attraction and behavior, with males reporting more negative attitudes than females among young university students (Chi & Hawk, 2016). As a result, conversion therapy, or efforts to "cure" one's deviation from heteronormativity, is still practiced in mental health agencies in Mainland China. About six percent of Chinese LGB people reported being recommended, coaxed into, or provided conversion therapy for sexual orientation, gender identity, or gender expression when accessing mental health care services (Suen & Chan, 2020). Furthermore, as mentioned above, Chinese *tongzhi* communities face significant pressure to conform to heteronormative societal pressure with respect to marriage and childbearing. As a result of China's one-child policy, introduced in the 1980s and formally ended in 2016, members of this generation who hail from urban settings are often only children who experience not only

intense parental expectations for marriage and reproduction but also heavy responsibility to look after their parents. Many resort to *xinghun*, or contract marriages, to appease parents and access assisted reproductive technologies within China where legal access is restricted to heterosexual married couples (Kong et al., 2021). Politically, *tongzhi*-focused NGOs have encountered significant obstacles in recent years, due to tightened censorship, lack of funding, and government crackdowns. For example, the NGO LGBT Rights Advocacy China, the first and only NGO that focuses on legal issues for the Chinese LGBT communities, was formally closed in 2021 (Associated Press News, 2021). Longitudinal survey results have revealed, after the mid-2000s, a marked decline in social acceptance toward the LGBTQ communities in China (Flores, 2019, 2021).

Economically, China's fast development has influenced social attitudes toward LGBTQ communities. Globally, countries that offer more rights to LGB people enjoy significantly higher per capita GDP than those who trail in LGB equality, while nations cause substantial harm to their economies when they exclude LGB people who contribute to their societies as equally valuable citizens (Badgett et al., 2019). The Chinese economy has grown exponentially in the past 30 years since the economic reforms in the 1990s and becomes the second largest economy in the world. In Mainland China, a higher level of economic development in provinces was found associated with a decrease in discrimination, and every 100 thousand Chinese Yuan (around 15 thousand USD) increase in per capita GDP lead to a 6.4% decrease in discriminatory events perpetrated by heterosexuals (Wang et al., 2020).

In terms of bisexual community formation, bisexual groups first gained an online presence in 2007 on *Douban,* a social network website that allows users to create artistic events and activities in Chinese cities, and later in 2011 on Weibo, the Chinese version of

Twitter. These online platforms helped raise awareness of bisexuality, offered resources, and facilitated offline in-person community events. In 2012, the first LGBT conference in Mainland China was hosted in Beijing. Soon after that, the first grassroots bisexual group *r&B* was established, which has nurtured the development of several local bisexual groups in big cities such as Beijing and Guangzhou. Since then, r&B has provided invaluable information, community resources, and online support groups to Chinese bisexual individuals. In 2021, r&B published the first Chinese-language handbook on bisexuality (r&B, 2021).

Hong Kong

Economic development and intimate cosmopolitan connections in numerous facets may have facilitated the better social acceptance of LGBTQ individuals in Hong Kong. Since the colonization of the British began in 1842, Hong Kong developed a global reputation for its free economic market, free speech, as well as its democratic political structure for a long time. In recent years, the societal visibility of LGBT communities is mounting. Hong Kong has been hosting an annual *tongzhi* march since 2008 which has been invaluable for both community building and political advocacy. The city was also announced to be the first Asian city to host the 11th Gay Games in 2022, a nine-day-long international diversity festival with sports, arts, and cultural events organized by the LGBTQ+ communities. However, scholars have also noted that sexual prejudice against sexual minorities continues to exist not only among the general public but also among educators and mental health professionals in Hong Kong, under the unique cultural influence of both traditional Chinese values (e.g., filial piety) and conventional Christian thoughts (Kwok & Wu, 2015).

Historically, a significant milestone for Hong Kong is its transition from British to China's governance in 1997, following the "one country, two systems" policy that allows the city to maintain its independent economic and political structures for 50 years. However, there is heightened political tension between Beijing and Hong Kong since the anti-extradition bill protests broke out in Hong Kong (2019-2020) which LGBT individuals were actively involved. Legally, in terms of protecting LGBT rights, consensual same-sex sexual behavior was decriminalized in 1991; equal age of consent for homosexuals and heterosexuals was established in 2005; same-sex couples are included in the 2009 Domestic and Cohabitation Relationships Violence Ordinance; name change for transgender residents on ID cards and passports is allowed; a 2013 ruling legitimatized marriage between a trans woman and her boyfriend; a 2018 verdict deemed the denial of a lesbian expatriate's spousal visa on the basis of marital status as unlawful discrimination; a 2019 legal battle allowed a gay civil servant's British husband to qualify for spousal benefits (Kong et al., 2021; Yue & Leung, 2017). Despite all the progress in terms of these policies, there is an absence of same-sex marriage or civil partnership rights, as well as anti-discrimination laws based on sexual orientation in Hong Kong.

Regarding community development, bisexual groups have only come to formation very recently in Hong Kong. Although the annual *tongzhi* march has begun in 2008, which indicated vigorous movements from the LGBT communities during that time, the first bisexual group 愛無界 Love Unbounded was not founded until 2016, which is so far the only grassroots group that focuses on issues related to bisexuality in Hong Kong. Love Unbounded has offered bi-affirming information and resources on social media platforms to its members. Furthermore, it has organized social events to discuss bisexual-related issues

and cultivate solidarity with the broad *tongzhi* community, such as joining the annual *tongzhi* march as a bisexual group.

Taiwan

Taiwan, among these three regions, has the most visible civil society activism, community formation, and legal protections for *tongzhi* communities (Kong et al., 2021). Historically, Taiwan was colonized by Japan from 1894 until the end of the Second World War in 1945. After the Chinese Civil War, the Chinese communist party took control of Mainland China, and the Kuomintan (KMT) retreated to Taiwan following its defeat in 1949. KMT retained its authoritarian rule over Taiwan until democratic reforms were enacted in the 1990s. Since then, the social status of *tongzhi* has rapidly improved. The first LGBT NGO, Taiwan Tongzhi Hotline Association was established in 1998 and offers peer counseling, community support networks, and resources. Following active LGBT civil society activism and feminist movements in the 1990s, the Gender Equality Employment Law was established in 2001. Furthermore, the Gender Equity Education Act was passed in 2004 (Liu, 2015, p. 73), partially pushed forward by activists, educators, and legislators because of the tragic death of an adolescent boy Yongzhi Ye who was bullied severely by peers at school due to his feminine gender expression. This landmark educational legislation mandates gender equality education for all primary schools and secondary schools to provide gender equality education that integrates contents pertaining to sexual orientation, gender identity, and expression, which is fundamental in nourishing societal acceptance toward *tongzhi* communities. Concurrently, Taiwan Gender Equality Education Association was founded in 2002 which provides educational resources and teacher training. In 2015, *Gaoxiong* became the first Taiwanese city to issue same-sex civil partnerships. In 2019, Taiwan became the first

Asian region to legalize same-sex marriage, which is the culmination of many years of community building and legal advocacy.

Additionally, Taiwan has the most vibrant bisexual community groups. Similar to Mainland China and Hong Kong, bisexual people found each other in online spaces before creating affinity groups and organizations. A bisexual-specific chatting room first appeared on PPT, a social network website, in 2003. Subsequently, Bi the Way·拜坊, the first bisexual group in Taiwan was established in 2007. Since then, bisexual groups burgeoned in many cities throughout Taiwan, such as Taipei and Gaoxiong. Bi the Way has organized numerous community events, diversity training workshops, and participated in significant political movements, including marriage equality campaigns. Moreover, another vital signal of bisexual visibility in Taiwan is the presence of bisexual subgroups in many LGBT organizations in Taiwan. For example, Taiwan Tongzhi Hotline Association first invited Bi the Way to offer educational training about bisexual-related issues to their hotline counselors, then gradually formed its own bisexual subgroup.

Minority Stress facing Chinese Bisexual Communities

The minority stress model (Meyer, 2003) identified unique challenges experienced by LGB individuals, which included the distal process, such as prejudice events (e.g., school bullying), and the proximal process, involving concealment and internalized homophobia. Moreover, this model pinpointed the relationship between these minority stress processes and mental health outcomes, as well as the protective role of coping and social support, both at the community and individual levels. However, given that this model aimed to capture global minority stress processes for LGB communities, the impact of IH on mental health outcomes was illustrated for LGB individuals as a large group without considering the harmful costs of

IB on the well-being of bisexuals specifically. Regardless, this model has laid critical theoretical foundations for researchers to further investigate specific stressors and strengths of bisexual communities.

It is worthwhile to acknowledge that studies related to the minority stress model have primarily been conducted in Western cultures and published in English, especially in the U.S., although there is emerging evidence coming from Asian countries including China, in recent years. Therefore, the literature review largely consists of evidence derived from Western contexts, and studies conducted in Chinese contexts are incorporated whenever possible and available. In addition, much more research evidence is available regarding the assessment and impact of internalized homonegativity rather than IB. In the Chinese cultural context, to the best of my knowledge, no study has examined the impact of IB on the psychosocial health outcomes of bisexuals.

Distal Minority Stress Processes

Distal minority stressors are conceptualized as objective environmental conditions that are discriminatory and oppressive against bisexual people, which are not dependent on an individual's perceptions or appraisals (Meyer, 2003). Building on the social, legal, and historical contexts regarding bisexuality in Chinese cultures, as aforementioned, there are many distal minority stressors facing Chinese bisexuals documented by extant literature.

Two systems of oppressive forces, heterosexism, and monosexism, pose stigmas, stressors, and challenges to bisexual people's everyday life. Heterosexism refers to a system of attitudes, bias, and discrimination in favor of heterosexuals that operates on individual, institutional, and cultural levels to stigmatize, deny, and denigrate any non-heterosexual way of being (Szymanski et al., 2008). Heterosexism has been conceptualized as homophobia and

homonegativity (Berg et al., 2016; Ren & Hood, 2018). Some assumptions derived from heterosexism are, “everyone is heterosexual” and “being heterosexual is better” than being lesbian, gay, asexual, or bisexual. Similarly, monosexism describes an ideological system that promotes exclusively heterosexual or homosexual attractions and behaviors, thereby inhibiting the thriving of non-monosexual individuals including bisexual people (Goldberg, 2016). Monosexism manifests as a form of biphobia and binegavitity (Hoang et al., 2011; Paul et al., 2014; Wei & Israel, 2023), as it assumes that “people are either gay or straight” and “people are only attracted to one gender.”

A lifespan perspective can be utilized to better understand a bisexual person’s experience with distal minority stress. First of all, bisexuals are born into a world where social and institutional structures hold both heteronormative and binary views of sexuality, without much consideration of bisexuality, or the spectrum between gay and straight (Achyldurdyyeva et al., 2021; Flanders et al., 2016). Growing up, bisexual individuals are taught by peers, parents, teachers, textbooks, and the media that they need to be straight and be attracted to only one gender. Secondly, bisexuals rarely see images and identities related to bisexuality being reflected in media coverage and/or educational materials. Compared to lesbian and gay men, there is less publicity and visibility of bisexual public figures as well as a misrepresentation of bisexuality, such as portraying bisexuality as an unstable identity (GLAAD Media Institute, 2022). Thirdly, bisexual children lack sufficient support from the formal education system to accept and affirm their sexuality due to the limited availability of comprehensive sexuality education about LGBT issues. In schools, bisexual students are also more likely to be subject to various forms of bullying and violence on the basis of their sexuality and gender expression compared to their heterosexual counterparts (GLSEN, 2018;

Zhang et al., 2017). When bisexuals have graduated from school to enter the workforce, they encounter discrimination and rejection, when applying for employment, housing, and in the workplace (Achyldurdyyeva et al., 2021; Tweedy & Yescavage, 2014). When they are in marriage and/or intimate relationships, either with a same-gender partner or a different-gender partner, they are misperceived as either gay/lesbian or straight, depending on the gender of their partner (Sarno et al., 2020; Vencill & Israel, 2018). Furthermore, bisexuals experience misunderstanding and microaggressions while receiving healthcare and therapy services (Page, 2013; Suen & Chan, 2020). When they become elders, there are very few long-term care, housing, and community-based services to serve the unique needs of LGBTQ elders (Espinoza, 2016). Finally, despite mounting financial support for LGBTQ organizations in the United States, bisexual people receive less than 1% of funding, significantly less than lesbians (3%) and gay men (8%) in 2018 (Kan & Wallace, 2020).

Family, in China, has been found as the place with the most frequent rejection and discrimination, followed by schools and workplaces for LGBT individuals (United Nations Development Programme, 2016). Partially due to the severe burden to meet societal and familial expectations to maintain heterosexual relationships/marriages and produce offspring, 54% of Chinese gay men and lesbians reported having encountered negative treatment from their family members based on their sexual orientation and/or gender expression. Although Chinese lesbians experience less family pressure than gay men to get married and have children (i.e., 62% vs. 72%), they report having experienced more negative treatment from their family members than gay men (i.e., 76% vs. 50%) (Suen et al., 2019). Additionally, being male, older, living in rural areas, and having less income predicted greater levels of

family pressure of getting married and having children among Chinese lesbians and gay men (Suen et al., 2019).

Proximal Minority Stress Processes

Compared to distal minority stressors, proximal minority stress is more subjective and related to how one experiences the social and personal meanings attached to their sexual identity and the subjective stress it entails (Meyer, 2003), which include expectations of being rejected, concealment of sexual identity, and internalized stigma such as IB. My dissertation focuses on examining the impacts of IB on Chinese bisexuals' psychosocial health.

Given the limited studies available on IB, extant studies on IH can provide essential details and contexts for the current research project. First, numerous studies have confirmed the association between higher levels of IH and worse psychosocial outcomes, such as a sense of shame (Chow & Cheng, 2010), low self-esteem (Ritsher et al., 2003), relationship problems (Frost & Meyer, 2009), psychological distress (Szymanski & Kashubeck-West, 2008; Xu et al., 2017), as well as depression and anxiety (Igartua et al., 2003; Wang et al., 2021; Yolaç & Meriç, 2021). Besides, the relationship between IH and internalizing mental health problems was stronger in studies with a higher mean age, which reflected higher levels of discrimination and oppression against same-gender attraction experienced by older generations (Newcomb & Mustanski, 2010). When gay and bisexual men were able to reject the negativity of IH, they reported significantly higher odds of positive health outcomes compared to those who did not (Herrick et al., 2013).

While research has consistently linked IH and negative psychosocial outcomes, there are inconsistent findings on the relationship between IH and risky sexual behaviors. Some

studies have found a positive correlation between IH and risky sexual behaviors among men who have sex with men (MSM) (Chow et al., 2011; Kashubeck-West & Szymanski, 2008; Xu et al., 2017), but a meta-analysis of 16 studies revealed that this relationship only exhibits a small overall effect size and the correlation between these two variables has decreased over time (Newcomb & Mustanski, 2011). Therefore, the authors suggested focusing on more consistent predictors when studying risky sexual behaviors for the MSM population such as drug use. However, very limited studies have investigated the role of IB as a potential mechanism or predictor of risky sex in MSM, partially due to a lack of valid measures of IB.

When it comes to psychosocial health outcomes, evidence has revealed the correlation between higher levels of IB and elevated depression and psychological distress, risky behaviors, decreased psychosocial well-being, self-esteem, and relationship satisfaction (Brewster & Moradi, 2010; Lambe et al., 2017; Paul et al., 2014; Taylor et al., 2019; Wei & Israel, 2023). These health disparities facing bisexuals have been posited to derive, in part, from the unique "double discrimination" experienced by bisexual individuals from both straight and gay/lesbian individuals (Brewster et al., 2013; Friedman et al., 2014; Israel, 2018). Experiencing more frequent anti-bisexual experiences, such as being assumed as actually gay or straight, or hearing negative remarks about bisexuals, predicted subsequent increases in IB and sexual identity uncertainty, which were associated with increased concealment of their bisexuality, depression, and anxiety (Dyar & London, 2018). Furthermore, using the Bisexual Identity Inventory (Paul et al., 2014), Choi et al. (2019) discovered three distinct bisexual subgroups: Affirmative (e.g., having a positive orientation towards one's bisexuality), Vigilant (e.g., being significantly concerned about others' reactions to one's bisexuality), and Ambivalent (e.g., endorsing mixed but generally negative

attitudes and beliefs about one's bisexuality). These three bisexual subgroups displayed different mental health constellations, with Vigilant bisexuals reporting the poorest mental health outcomes. These findings demonstrated the diverse experiences of internalized stigma and self-acceptance within bisexual communities and highlighted the importance of investigating bisexual subgroup differences.

In addition to "double discrimination", scholars have attempted to uncover specific cultural challenges facing Chinese bisexuals. Family Shame, was adopted by Chinese bisexuals as a salient factor in the Chinese Internalized Binegativity Scale (CIBS), which was associated with more depression and lower self-esteem. Gender also has an impact on bisexuals' experience with IB (Wei & Israel, 2023). Moreover, filial piety, an essential Confucian value, poses significant pressure on Chinese gay and bisexual men to embrace their sexuality. Filial piety was found associated with negative LGB identity among young Chinese (Hu & Wang, 2013). Huang et al. (2020) discovered that IH positively mediated the correlation between filial piety, conceptualized as compassionate reverence toward parents, and depressive symptoms among gay and bisexual men in Taiwan. While both IB and IH contribute to health disparities experienced by bisexuals, the ways in which they impact bisexuals in tandem remain unclear.

Finally, bisexuals of various genders have markedly different experiences regarding their sexual identity and IB. Among limited studies that measured levels of IB, bisexual men reported higher levels of IB when compared to women (Paul et al., 2014; C. Wei & Israel, 2023) and gender non-binary folks (Wei & Israel, 2023). Several reasons could have contributed to this gender discrepancy, including more negative attitudes toward bisexual men in the general population than bisexual women, and non-bisexual men (Dodge et al.,

2016), the influence of sexism (e.g., microaggression against women) intersecting with stigmas against homosexuality and bisexuality (Szymanski, 2005), and cultural values such as filial piety in Chinese cultures (Y. T. Huang et al., 2020). Due to the limited availability of research, little is known about the levels of IB among transgenders and non-binary folks who identify as bisexual.

Coping and social support

Despite facing significant challenges in a discriminatory and oppressive society, literature has consistently asserted the resilience and strengths of LGBT individuals, which manifest in their various ways of coping and establishing social support. Meyer (2003) emphasized a distinction between personal resources, which vary individually (e.g., personality traits), and group resources that are available to all minority members (e.g., an LGBT Resource Center).

At the individual level, previous studies have identified stigma awareness, self-esteem, and social support as effective coping resources. First of all, stigma awareness and self-esteem buffered the negative impact of sexual orientation-related discrimination on subjective well-being among LGB individuals (Douglass et al., 2017). In addition, enhanced self-esteem was found associated with greater social support, higher subjective well-being, and fewer suicidal thoughts among Chinese LGBTQ students (Wei & Liu, 2019). Furthermore, self-esteem and social support fully mediated the relationship between internalized heterosexism and psychological distress among lesbians and bisexual women (Szymanski & Kashubeck-West, 2008).

Research has also shown that disclosure of one's sexuality can be a protective factor for LGB communities, which is associated with greater psychological well-being

(Brownfield & Brown, 2022; Roberts & Christens, 2021), and less internalized sexual stigma (Sommantico et al., 2018). However, being more open about one's sexual orientation can have negative consequences for bisexual individuals but not for gay/lesbian individuals (Feinstein et al., 2019). In Chinese cultures, it is challenging for Chinese bisexuals to come out to their family members. Wei & Liu (2019) found that although more than 90% of Chinese LGBT students had come out to at least a friend, the majority of them remain closeted with their siblings (65%), parents (73%), relatives (81%), and schoolteachers (77%). Moreover, it is crucial to recognize the social context in which one discloses their sexual identity and its subsequent experiences and consequences. Evidence has shown that disclosure was not associated with more positive well-being in controlling contexts with limited autonomy support for LGB individuals (Legate et al., 2012). In fact, identity disclosure can be a risk factor for family violence in China, as a study found that Chinese gay men and lesbians who disclosed their sexual orientation were 1.77 times more likely to experience family violence (Suen et al., 2019). Similarly, the protective mechanism of outness on LGBT individuals' well-being was found only among non-Hispanic White participants as opposed to non-Hispanic Black and Latinx/Hispanic individuals (Roberts & Christens, 2021) living in the US and Puerto Rico.

At the minority group level, LGBTQ community connectedness, especially within the bisexual community, can be protective to curtail the harmful effects of anti-bisexual stigmas. Even though more lifetime experiences with heterosexist harassment, rejection, and discrimination are associated with higher levels of internalized heterosexism among LGB individuals (Szymanski et al., 2008), these negative effects of external heterosexism can be lessened by having more opportunities to talk about stressors with LGB friends and greater

connection with the LGB community (Mason et al., 2015). Similarly, having access to participate in a bisexual-specific community buffered the negative impact of IB on depressive symptoms (Lambe et al., 2017). Given the microaggressions bisexuals experience in lesbian and gay communities, it is necessary to highlight the importance of group solidarity and cohesiveness that protect bisexuals and provide in-group validations (Meyer, 2003). Nonetheless, LGBT community resources are scarce and absent in Chinese societies, especially in China, compared to Western countries, posing stark challenges for in-person bisexual community formation and opportunities to find online affinity groups.

Finally, there are gender differences among bisexuals when it comes to seeking social support and LGBT community connectedness. Frost et al. (2016) found that gay and bisexual men may rely on "chosen families" more than lesbian and bisexual women. More specifically, both heterosexuals and LGBs relied on friends and coworkers of the same sexual orientation and race/ethnicity for everyday social support (e.g., recreational and social activities). When seeking major support (e.g., borrowing large sums of money), heterosexual men and women along with lesbian and bisexual women relied primarily on their families, but gay and bisexual men relied primarily on other LGB individuals.

Psychosocial Health Risks among Bisexuals

Literature has provided robust evidence to pinpoint the elevated behavioral and psychological health risks among bisexuals. Both nationally representative data and meta-analysis have found that bisexuals experience the highest odds of any mood or anxiety disorder, such as depression and anxiety, for both males and females, compared to lesbian, gay, and heterosexual counterparts (Bostwick et al., 2010; Chan et al., 2020; Ross et al., 2018). Chinese bisexuals, compared with lesbians and gay men, are more likely to report

identity uncertainty, conceal their sexual orientation, and have a weaker sense of connection to the LGBT community, which were in turn associated with greater affective symptoms and poorer mental well-being (Chan et al., 2020). Several reasons could underpin these health disparities, including experiences of sexual orientation-based discrimination, bisexual invisibility/erasure, and lack of bisexual-affirmative support (Dyar & London, 2018; Ross et al., 2018).

Research has also found that LGBT individuals are at higher risk for experiencing physical, emotional, and sexual interpersonal violence compared to their heterosexual cisgender counterparts (Snyder et al., 2018), especially bisexual and transgender people (Whitfield et al., 2021). Non-monosexual women are more likely to experience sexual identity-based violence at the hands of their male partners than monosexual women (Coston, 2021). They are also more likely to report verbal coercion, which was associated with higher levels of anti-bisexual experience from heterosexual people, and bisexual stigma is a significant predictor of lifetime sexual violence (Flanders et al., 2019).

While bisexual men experience heightened risks for sexually transmitted infections (STI) including HIV, they are less likely to utilize HIV/STI prevention services than gay men (Feinstein & Dodge, 2020). Research evidence, including a meta-analysis of 49 studies, found that Chinese men who have sex with both men and women (MSMW) have increased HIV infection risks (Chow et al., 2011; Yun et al., 2011). Some underlying factors that affect their sexual health are unprotected sex, early sexual debut, forced sexual encounters, increased numbers of sexual partners, substance use, exchange sex, risk behaviors of their male and female partners, and pregnancy-related considerations (Jeffries IV, 2014; Malebranche et al., 2010). Social and cultural underpinnings also shape MSMW's

vulnerability to HIV/STIs and other sexual health problems, which encompass anti-bisexual sentiment, socioeconomic marginalization, culturally specific masculine ideologies, and sexual identity (Jeffries IV, 2014).

Compared to their heterosexual counterparts, bisexual boys and girls are more likely to engage in smoking and be sexually victimized, and bisexual boys are also more likely to report frequent drinking and sexually transmitted diseases (Zhang et al., 2017). Substance use problems were found as a significant partial mediator between LGBT-based victimization and suicidal ideation as well as between LGBT-based victimization and suicide attempts for sexual and gender minorities (Mereish et al., 2014). Being exposed to stigma, specifically heterosexism, elicits negative mood and alcohol craving among sexual minority young adults who are heavy drinkers (Mereish & Miranda, 2019). Marginalization, discrimination, and poor mental health were perceived as important reasons for substance use disparities (Demant et al., 2018).

Chapter 3 Method

Participants

Following IRB approval, a total of 856 individuals accessed the online survey, while 110 respondents (13%) dropped out (71 did not complete demographic questions, 27 completed demographics but not items regarding IB, 12 completed items regarding IB but not other scales essential for measure validation). Of 746 respondents these exclusion criteria were applied to remove 61 respondents who: resided outside of the three target regions (n = 22); were younger than 18 (n = 23); self-identified as gay or heterosexual with attractions only toward a similar gender (n =16). Therefore, the final sample included 685 respondents who were required to answer all essential survey questions.

The final sample consisted of 685 respondents, aged 18 to 49 (M = 24.49, SD = 5.25) who resided in Mainland China (69.2%, n = 474), Taiwan (17.2%, n = 118), and Hong Kong (13.6%, n = 93). Most participants reported living in urban settings (84.6%, n = 579), with 11.7% (n = 80) living in suburban and 3.7% (n = 25) in rural areas. Participants reported their gender identity as women (65.3%, n = 447), men (10.8%, n = 74), gender non-binary (20.4%, n = 140), transgender (1.3%, n = 9), and other (2.2%, n =15). Participants reported their sex assigned at birth as female (86.4%, n = 592), male (13.4%, n = 92), and intersex (.1%, n = 1). Participants reported their highest diploma/degree as high school or less (23.2%, n = 159), bachelor's degree (52.4%, n = 359), graduate degree (21.6%, n = 148), and other (2.8%, n = 19). Most participants were non-religious (82.9%, n = 568), followed by Buddhist (5.3%, n = 36), Catholic (2.3%, n = 16), Christian (1.6%, n = 11), and other religions (7.5%, n = 51). Participants' subjective socioeconomic status (SSES; Adler et al., 2000) ranged from 2 to 10 (M = 5.62; SD = 1.48) on a scale from 1 to 10 representing "where people stand in society,"

where 10 is “people who are best off, have the most money, most education, and the best jobs,” and 1 is the opposite.

Measures

All items were provided in Chinese, with simplified characters for respondents based in Mainland China, and traditional characters for Hong Kong, and Taiwan.

Demographic information. Participants were asked to provide their age, sexual orientation, sex assigned at birth, gender identity, highest educational degree, social-economic status (SES), and religion. Based on the broad definition of bisexuality (Ochs, 2005, p. 8), respondents were identified as bisexual in this study if they: (a) self-identified as bisexual or pansexual, or (b) reported being sexually and/or romantically attracted to more than one gender. For subsequent analyses, three categories age groups were created: young (18 to 24), medium (25 to 34), and mature (35 and above). SES was dichotomized with two levels- low (i.e., lower than average) and high (i.e., greater or equal to average).

Sexuality and Relationships. Participants were asked to report their levels of sexual attraction and romantic attraction on a 7-point scale, from 1 “similar gender” to 7 “different gender”. Additionally, participants were asked to rate how often they feel their sexual desire, on a 7-point scale, from 1 “Never” to 7 “Always”. Moreover, participants reported their current relationship status (e.g., single, partnered with a different-gender partner), and marital status (e.g., single, heterosexual marriage, divorced).

Identity trajectory. To understand participants’ identity trajectory and important milestones, they were asked to indicate the number of years that passed since they (a) first noticed having romantic–erotic attractions to more than one gender, (b) first wondered

whether they might be bisexual, and (c) first considered themselves as bisexual (Mohr & Kendra, 2011).

Chinese Internalized Binegativity Scale (CIBS). The CIBS (Wei & Israel, 2023) was used to measure IB. The measure consists of 25 items on a 7-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*) that included six subscales: illegitimacy (4 items, e.g., "Bisexuality is just a phase"), Monosexism (4 items, e.g., "*I wish I could be attracted to only one gender*"), Aversion (4 items, e.g., "I feel ashamed that I am bisexual"), Irresponsibility (5 items, e.g., "Bisexuals cannot be loyal to only one partner"), Family Shame (3 items, e.g., "*Being bisexual brings shame to my family*"), and Identity Affirmation (5 items, e.g., "I like myself as a bisexual"). The Cronbach's Alpha was .79 for the full scale, .78 for the *Illegitimacy* subscale, .87 for the *Monosexism* subscale, .86 for the *Aversion* subscale, .88 for the *Irresponsibility* subscale, .85 for the *Family Shame* subscale, and .89 for the *Identity Affirmation* subscale.

Chinese Internalized Homophobia Scale (CIHS). Seven items were used from the CIHS which had a coefficient alpha of .84 (Ren & Hood, 2018)**.** Three items were from the *Internalized Heteronormativity* (IH) subscale (e.g., *"If possible, I would prefer to be a heterosexual.").* A 7-point response scale was provided, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). One item was reversely scored, and total scores were calculated. Higher scores indicate higher levels of IH. Cronbach's alpha for these three items with the current sample was .72.

Nebraska Outness Scale. Outness was assessed by the five-item *Disclosure* subscale and the five-item *Concealment* subscale from the Nebraska Outness Scale (Meidlinger & Hope, 2014) that reported a Cronbach's alpha of .82, and .80, respectively.

Participants were asked to indicate the percentage of people who are aware of their sexual orientation and with whom they avoid talking about their sexual orientation, including their immediate family, extended family, friends, people at work or school, and strangers. All responses were given on 11-point Likert-type scales, from 0% "*None*" to 100% "*All*." The total scores for each subscale were calculated, with higher scores indicating greater levels of concealment and outness. Cronbach's alpha in the current study was .75 for the *Disclosure* subscale, and .78 for the *Concealment* subscale.

LGBT community connectedness was assessed by four items. Three items were adapted from the LGBT community connectedness scale (Frost & Meyer, 2012), which were customized in a previous study on LGBT adults: "I feel connected to my local LGBT community," "I feel that the problems faced by the LGBT community are also my problems," and "I feel a bond with other LGBT people", which were rated along with a seven-point Likert-type scale racing from 1 (*Strong disagree*) to 7 (*Strongly agree*). The coefficient alpha was .76 for these three items in the previous study (Roberts & Christens, 2021) and .76 the current study. The fourth item was added, "Do you know if there is an LGBT community where you live?" Response options were yes or no.

General Anxiety Disorder (GAD-7). The Chinese version of the 7-item General Anxiety Disorder (Spitzer et al., 2006) was used to examine participants' anxiety in the past 2 weeks. One example item is: "*Not being able to stop or control worrying*." Response options included "*not at all*", "*several days*", "*more than half the days*", and "*nearly every day.*" High scores indicate high levels of general anxiety. Cronbach's alpha was .92 (Spitzer et al., 2006) in the original study and .93 in the current study.

Patient Health Questionnaire (PHQ-9). Depression was assessed by the Chinese version of the 9-item Patient Health Questionnaire (Kroenke et al., 2001), which had a Cronbach's alpha of .89. It assessed participants' emotions over the past 2 weeks. One example item is: "*Feeling down, depressed, or hopeless*." Response options included "*not at all*", "*several days*", "*more than half the days*", and "*nearly every day.*" Higher scores indicate higher levels of depression. Cronbach's alpha was .91 in the current study.

Suicidality was assessed by two items: "Before last year, I had seriously considered committing suicide"; "During last year, I had seriously considered committing suicide: (a) never; (b) rarely; (c) sometimes; (d) often; (e) always." These two items have been used in a study on Chinese LGBTQ students (Wei & Liu, 2019). Cronbach's alpha was .83 in the current study.

Rosenberg Self-esteem Scale. The Chinese version of the widely used 10-item Self-esteem Scale (Rosenberg, 1979) was used to measure participants' self-esteem, on a 4-point scale, from 1 "*strongly agree*" to 4 "*strongly disagree*". One example item is: "*I am able to do things as well as most other people.*" Higher scores indicate higher levels of self-esteem. Cronbach's alpha was .92 in a study with LGBT individuals (Vosvick & Stem, 2019) and .92 in the current study.

Tobacco and alcohol use was assessed by three items adapted from the Tobacco, Alcohol, Prescription medication, and other substance use (TAPS) tool (McNeely et al., 2016). Participants were asked to report how often they used any tobacco product, alcohol, and drugs (e.g., cocaine, crystal meth) in the past 30 days. Alcohols use specifically asked how often participants had four or more drinks containing alcohol (a standard drink is about 1 small glass of wine (5 oz) or 1 beer (12 oz)). Response options are "Daily or almost daily",

"weekly", "monthly", "less than monthly" or "never. Tobacco use and alcohol use were asked among all participants; however, the third item (i.e., drug use) was only asked in the simplified Chinese version due to an error by the researcher. Cronbach's alpha was .61 for the two items in the current study. Therefore, the total score was not calculated, and alcohol use was used for subsequent analyses in that it had more variability.

Risky sexual behaviors. Although research has assessed risky sexual behaviors among Chinese bisexuals, the items used tend to be gender-specific (Xu et al., 2017). In order to address gender-specificities of risky sexual behaviors among bisexual people, the author's research team developed three items to examine respondents' self-protection behaviors during sex (e.g., using condoms, PREP, or contraceptives), transactional sex, and sex under influence (i.e., alcohol or drugs). Five responses were provided, "never, rarely, sometimes, often, and always." Three indicators exhibited poor internal reliability (Cronbach's Alpha = .15) in the current study. Therefore, the total score was these two items were calculated and sex under influence was used as the indicator for risky sex in subsequent analyses because it had more variability.

Subjective well-being was measured with the five-item Satisfaction with Life Scale (Diener et al., 1985). The items asked participants to rate their life satisfaction (e.g., "The conditions of my life are excellent") on a 7-point scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The obtained coefficient alpha for a study among Chinese gay and bisexual individuals was .84 (Wen & Zheng, 2019) and .85 in the current study.

Procedures

Following IRB approval from UCSB (protocol number: 52-21-0431), the survey was distributed from June to August 2021 on Qualtrics in Hong Kong and Taiwan with traditional

Chinese characters, and on Wenjuanxing (a similar online survey platform widely used in academic studies) in Mainland China with simplified Chinese characters, because Qualtrics is not accessible in Mainland China. Participants were recruited through social media platforms of LGBTQ organizations, and email listservs of professional organizations (e.g., Taiwan Gender Equity Education Association). Efforts were made to reach bisexuals outside of LGBTQ organizations, such as in parent networks (e.g., Hong Kong BGCA Project Touch), and the researcher's personal contacts based in Mainland China, Hong Kong, and Taiwan. Recruitment messages encouraged respondents to share the survey with other bisexual people they know.

Additionally, participants were provided informed consent which highlighted the need for a safe and private environment if they had not come out to others who were in their immediate environment. All participants gave their consent electronically. At the end of the survey, a list of mental health resources was provided to participants who could then be entered into a drawing for one of ten gift cards approximately valued at 15 US dollars. Respondents were required to answer all survey questions, except for their sex assigned at birth, marital status, and geographical area (i.e., urban or rural). Missing data was found for a few variables caused by survey platform glitches, including age and three identity trajectory variables. Respondents submitted their survey responses successfully with missing responses although these questions were required. Therefore, this missing pattern was deemed missing completely at random (MCAR). Missing responses for age and identity trajectory variables were 4.2% and 7.2%, respectively, which were replaced by variable means.

Research Design and Analytic Plan

This project was a cross-sectional survey design using an existing dataset that was collected by the author from June to August 2021, as an online survey distributed to Chinese bisexual communities, in association with a measure development study for the CIBS. The variables included in the present study were not analyzed beyond measurement validation as part of the prior project.

Data analyses were conducted using SPSS 27.0. and R Studio with MplusAutomation. M*plus* version 8.8 was used. A detailed data analysis plan is included in Appendix A, which consists of research questions, hypotheses, and methods utilized in data analyses. Following the appendix, three model diagrams were provided to illustrate the structural equation models used for Study Two.

In study one, descriptive analyses were conducted to describe the characteristics of Chinese bisexuals, in terms of their sexuality and relationships, including relationship status (e.g., single, married), identity trajectory, and relationship style, as well as their sexual and romantic attractions. Second, analyses were computed to determine the prevalence of depression, anxiety, suicidal ideation, tobacco use, and alcohol use across three Chinese regions. Third, bivariate associations were conducted to discern correlations among psychosocial health outcomes. Finally, multiple regression modeling was utilized to examine the relationship between the demographic characteristics of bisexuals (e.g., age, gender, region) and their psychosocial health outcomes and coping mechanisms. The interaction effects between gender and region were also inspected. Given the large number of exploratory testing necessary to test the relationship between demographic variables and eight dimensions of psychosocial health, the Benjamini-Hochberg procedure for adjusted

significance tests was utilized to manage the false discovery rate (FDR, Benjamini & Hochberg, 1995).

In study two, latent profile analysis (LPA) was conducted to distinguish subgroups of Chinese bisexuals based on seven indicators, including six facets of the Chinese Internalized Binegativity Scale (CIBS): *Illegitimacy*, *Monosexism*, *Aversion*, *Irresponsibility*, *Family Shame*, and *Identity Affirmation*, as well as *Internalized Heteronormativity* from the Chinese Internalized Homophobia Scale (CIHS). Models were specified using mean scores of the seven subscales. The term "classes" is used to refer to the emergent latent groups or profiles. In LPA, classes can vary with respect to their indicator means, indicator variances, and covariances between indicators. In this research project, four model structures were examined to estimate one to four latent classes: (a) Model 1 in which indicator variances are freely estimated but constrained to be equal across classes (i.e., class-invariant) with no within-class indicator covariances (i.e., diagonal); (b) Model 2 in which indicator variances are freely estimated and are not constrained to be equal across classes (i.e., class-varying) with no within-class indicator covariances (i.e., diagonal); (c) Model 3 in which indicator variances are freely estimated but constrained to be equal across classes (i.e., class-invariant) with within-class indicator covariances (i.e., non-diagonal) and (d) Model 4 in which indicator variances are freely estimated and are not constrained to be equal across classes (i.e., class-varying) with within-class indicator covariances (i.e., non-diagonal).

To decide on the LPA model, the model-building process requires fitting possible LPAs across four models and then comparing the model fit information, substantive interpretation of each model, and sample size of the smallest class in order to determine which is the most appropriate and parsimonious when fit indexes are not all in congruence

(Muthén, 2003; Nylund et al., 2007). The model judged to capture the sample's heterogeneity most adequately and most interpretably was selected as the best-fitting model for each LPA. Commonly accepted fit statistics were used for the LPA (Masyn, 2013), including the Bayesian Information Criteria (BIC), Adjusted BIC (aBIC), and approximate weight of evidence criterion (AWE), where lower values indicate better fit. Bootstrap Likelihood Ratio Test (BLRT) provided *p* values to compare models with a model that has one less class. The Bayes Factor (BF) is a pairwise comparison of relative fit between two adjacent models, where a ratio of the probability of each model being true is computed. Specifically, $1 < BF < 3$ is considered weak evidence for the model with fewer classes, $3 < BF < 10$ is moderate evidence, and $BF > 10$ is strong evidence. The Correct Model Probability (cmP) estimates the probability that each of the models is correct, assuming the "true" model is among those considered. The model with the largest cmP value is chosen. The accuracy of classification of individuals to latent classes within a given model was examined based upon estimates of posterior class probability (i.e., the likelihood of each individual's membership in a given class, based upon their pattern of responses) and relative entropy with values closer to 1 indicating superior classification precision. Each of the above criteria was evaluated in selecting and interpreting all models.

Once the preferred model without covariates and distal outcomes was chosen, the three-step maximum likelihood (ML) procedure was utilized to include covariates and distal outcomes (Asparouhov & Muthén, 2014; Vermunt, 2010). Figure 3 provides a conceptual diagram of the model. The covariates of age, gender, region, and SES were included using multinomial logistic regression. In logistic regression analyses, a reference class was chosen to compare the likelihood that a person with a given characteristic (e.g., man vs. woman) will

be classified into a given class relative to the reference class. Mean estimates of the distal outcomes, including anxiety, depression, self-esteem, and subjective well-being, were estimated for each latent class, and compared.

Furthermore, mixture modeling was utilized to explore the moderating effect of the latent class variable on the relationship between the demographic characteristics of bisexuals (e.g., gender) and their health outcomes (Arch, 2021). To interpret a mixture regression moderation, an overall test of equivalence of the regression of distal outcomes on demographic variables (i.e., age, gender, region, and SES) across the three latent classes was conducted using the omnibus Wald test. Based on the exploratory results from multiple regression in study 1, demographic variables that significantly predicted depression and anxiety were selected. Self-esteem was also controlled in the moderation model because it showed the strongest correlations with both depression and anxiety in study one.

Finally, regression modeling was conducted to examine whether bisexuals' community connectedness moderates the relationship between IS classes and psychosocial health outcomes (i.e., depression, anxiety).

Chapter 4 Results

The findings from study one are presented first to describe characteristics of Chinese bisexual respondents across Mainland China, Hong Kong, and Taiwan. Notably, given the way in which the data was collected, this is likely not a representative sample of Chinese bisexual people. Subsequently, the prevalence of depression, anxiety, suicidal ideation, tobacco and alcohol use were reported, followed by associations among psychosocial health outcomes. Additionally, multiple regression results convey the relationships between the demographic characteristics of bisexuals (e.g., age, gender, region) and their psychosocial health outcomes and coping mechanisms.

Results for study one

Table 1 presents the demographic characteristics of three Chinese regions as well as between-group comparisons. Significant group differences were found for age (Taiwanese respondents being the eldest), religion (Taiwanese respondents being most religious), the availability of local LGBT community (Hong Kong and Taiwan more than Mainland China), and educational degree. There were no significant group differences regarding SES, sex assigned at birth, gender identity, and home residence (i.e., urban vs. rural) across the three regions.

Sexuality and relationships

Participants reported a wide range of relational and marital statuses, with the majority being single and unmarried. Relationship status was single (61.6%), in a mixed-gender relationship (16.5%), in a same-gender relationship (15.5%), in a polyamory relationship with mix-gender partners (2.8%), or same-gender partners (1.6%), and others (2%). Regarding marital status, participants were single (80.7%), unmarried with a cohabiting

partner(s) (9.6%), in mixed-gender marriage (2.2%), divorced (1.2%), same-gender partnership/civic union (.9%), mix-gender contract marriage (.7%), same-gender marriage (.6%), or others (3.8%).

As for sexual identity development, respondents had realized their sexual and/or romantic attractions towards more than one gender on average for 7.72 years (*SD* = 5.49; range = 0 – 31; mode = 5). Respondents had realized that they may be bisexual on average for 6.18 years (*SD* = 4.59; range = 0 – 25; mode = 5). Respondents had been identifying themselves as bisexual for 4.54 years (*SD* = 4.12; range = 0 – 25; mode = 1). Not surprisingly, being older was significantly associated with having passed these three bisexual identity development milestones for longer periods of time (r = .47 to .61, $p < .001$).

Participants' actual ages for these three identity milestones were calculated to conduct regional and gender comparisons, and results are presented in Table 2. Significant gender differences were found for respondents' first time realizing they may be bisexual (identity awareness). Men were significantly older (about two years) than both non-binary ($p < .01$). However, there were no gender differences for another two identity milestones. Regarding regional differences, bisexual respondents based in Taiwan reported a significantly older age (about one and a half years) in their bisexual identity formation, compared to those in Mainland China ($p < .05$) and Hong Kong ($p < .05$).

Participants also reported their sexual/romantic attractions. As shown in Figure 1, bisexual participants reported a wide range of sexual and romantic attractions toward people of different genders. First, on a scale of 1 ("similar gender only") to 7 ("different gender only"), participants' average level of sexual attraction was 3.37 (range = 1 to 7, *SD* = 1.49), and their average level of romantic attraction was 3.39 (range = 1 to 7, *SD* = 1.34).

Furthermore, although around 35% of participants' sexual and romantic attractions remained in the exact center of the range, more than 60% of participants were spread on the spectrum from one to seven, with around 40% of participants being more attracted by a similar gender. In addition, overall, participants' romantic attractions toward a similar gender appeared slightly higher than their sexual attractions toward a similar gender, whereas their sexual attractions toward a different gender appeared slightly higher than their romantic attraction.

The vast majority of respondents (94%) had never given or received money, objectives, and services to exchange sex, while 4.8% answered seldom or sometimes, and 1.2% answered often or always. As for using alcohol or drugs when having sex, 75% of respondents reported never, with 23.2% reporting seldom or sometimes, and 2.7% often or always.

Psychiatric symptoms and substance use

Table 3 presents the prevalence rates of psychosocial health outcomes among participants across three regions. Regarding depression, all 685 participants had clinically elevated depressive symptoms. However, there were no reported severe depression symptoms. Across all three regions, the prevalence of moderately severe depression was the highest compared to moderate and mild depression. Sixty-five percent of Taiwanese respondents reported moderately severe depression symptoms, followed by Mainland China (62.2%) and Hong Kong (60.2%). As for anxiety symptoms, all participants had clinically elevated anxiety symptoms. Around 40% reported moderate levels of anxiety in all three Chinese regions. Thirty-eight percent of Taiwanese respondents reported severe anxiety symptoms, followed by Hong Kong (36.6%) and Mainland China (33.3%).

Concerning suicidal ideation, around 70% of respondents experienced suicidal ideation prior to last year in all three regions. Additionally, over 50% of bisexual people in Taiwan and Mainland China reported suicidal ideation in the past year prior to answering the survey, with 45.2% in Hong Kong.

Regarding tobacco use, around 80% of respondents never used it in the last 30 days prior to answering the survey, with 11.6% daily tobacco users in Taiwan, and 6.5% and 8.5% in Hong Kong and Mainland China, respectively. Regarding alcohol use, close to 60% of participants in Mainland China and Taiwan never used it in the last 30 days, with 46% reporting never in Hong Kong. Close to 20% of participants reported consuming four or more drinks every week. Less than 5% of participants were daily users.

Correlations among psychosocial health outcomes

Table 4 presents the results of bivariate associations among psychosocial health outcomes, along with their means, standard deviations, and ranges. First, two indicators of internalized stigma showed associations with several psychosocial health outcomes with small effect sizes, according to Cohen's (1992) guidelines for interpreting effect sizes: small (r = .10), medium (r = .30), and large (r = .50). Higher levels of IB and IH were both significantly correlated with lowers levels of outness and community connectedness (r = -.15 to -.28), whereas only greater IB was correlated with enhanced self-esteem and subjective well-being as well as more anxiety, depression, and suicidal ideation (r = -.22 to .08). Additionally, alcohol use and risky sex were both significantly associated with more anxiety, depression, and suicidal ideation with small effect sizes (r = .08 to .11). Greater community connectedness was significantly associated with enhanced self-esteem and subjective well-being with small effect sizes (r = .11 to .14). Finally, greater levels of self-esteem and

subjective well-being were significantly correlated with lower levels of anxiety, depression, and suicidal ideation with medium to large effect sizes (r = -.35 to -.58).

Correlations between demographics and psychosocial health outcomes

Table 5 presents the results of multiple regression analyses to explore relationships between demographic variables (e.g., age, gender, region) and psychosocial health outcomes (e.g., depression, alcohol use). Several significant relationships were found. First, older age significantly predicted lower levels of depression and anxiety. Compared to nonbinary individuals, identifying as a woman was significantly associated with lower levels of depression, but no significant relationship was found for men. Compared to respondents living in Taiwan, those residing in Mainland China and Hong Kong were significantly associated with lower levels of depression. The significance value for the interaction effect between gender and region for depression were below .05, although it was deemed insignificant after adjusting for false discovery rate. Additionally, higher levels of socioeconomic status were significantly associated with enhanced self-esteem but also more alcohol use and risky sexual behaviors. Moreover, having identified as bisexual for a longer period was significantly associated with less IB, whereas being religious predicted higher levers of IB compared with being non-religious.

Finally, three demographic variables did not significantly predict psychosocial health outcomes, including sex assigned at birth, home residence (urban vs. suburban or rural), and educational achievement.

Results for study two

Study two findings center around the latent classes of internalized stigma that emerged from the latent profile analysis. After identifying the three latent classes, differences

in demographic variables and psychosocial health outcomes were compared across the three classes. Furthermore, the moderating effect of internalized stigma classes was explored between demographic variables and depression and anxiety, based on the results from exploratory multiple regressions in study one.

Latent profile analysis: Identification of Internalized Stigma Classes

Table 6 presents the information used to evaluate each model, including fit statistics and entropy values. Model 1 and Model 3 results included converged one-class to four-class solutions, whereas Model 2 and Model 4 only provided the one-class solution. Examining the results, Model 3 with 4 classes exhibited the lowest values of log-likelihood, BIC, aBIC, and AWE. However, values for model fit indices for Model 3 with 3 classes were also very close. Therefore, these two models were compared to discern whether the fourth class provided substantive interpretability and practical utility. The smallest class in Model 3 with 4 classes was 1.95% (n = 13), smaller than the recommended absolute size of 25 in a simulation study (Spurk et al., 2020). Furthermore, after examining and comparing the two profile plots, this additional class did not provide substantial interpretability and separation from existing classes. Thus, the three-class solution within Model 3 was chosen as the best-fitting model.

Figure 3 presents the profile plot of the estimated mean values for seven dimensions of internalized stigma. This plot was used to visualize differences across classes and create labels for emergent latent classes. Class 1, denoted with a solid line and circle markers, had high values of identity affirmation, low values of IH, four aspects of IB, and medium values of family shame. Thus, this class was labeled *Self-appreciating*, which is the largest class and accounted for 85.83% of the sample. Class 2 (dashed line with triangle markers) had medium-level values across all seven indicators, accounting for 7.56% of the sample. Given

that Class 2 encompassed respondents with moderate levels of both negative self-evaluations and positive self-affirmations, it is labeled *Self-doubting*. Finally, Class 3 had low values of illegitimacy and irresponsibility, and moderate levels of identity affirmation, while high levels of monosexism, aversion, family shame, and internalized heterosexism. Cognitively, bisexual respondents in Class 3 did not believe that bisexuality is illegitimate and bisexual people are irresponsible. However, emotionally, they still wished they could focus on one gender and felt ashamed about their bisexuality. Given this group's cognitive and emotional dissonance, this class is labeled *Self-dissonant*, accounting for 6.61% of the sample.

Demographic differences across internalized stigma classes

Table 7 presents the results of covariate analyses from multinomial logistic regression models, regressing the latent class membership on various binary variables of age, gender, region, religion, and SES. Logistic regression estimates are provided in the form of odds ratios for ease of interpretability. There was one significant gender difference among the classes. Compared to women, men and TGNB folks were significantly more likely to be in *Self-doubting* relative to *Self-appreciating* (OR = 6.27, $p < .001$ for men; OR = 2.09, $p < .05$ for TGNB). Additionally, there were significant regional differences found among the classes. Compared to respondents based in Mainland China, Taiwanese respondents were significantly less likely to be in *Self-doubting* relative to *Self-appreciating* (OR = .32, $p < .05$). No significant differences were found between respondents based in Mainland China and Hong Kong. Finally, there were significant differences found in religion among the classes. Compared to the non-religious group, respondents who were religious were significantly more likely to be in the *Self-doubting* class relative to *Self-appreciating* (OR = 2.32, $p < .05$).

Differences in psychosocial health outcomes based on internalized stigma classes

Figure 4, and Figure 5 present the mean estimates of distal outcomes and their differences across three internalized stigma classes, using the 3-step ML approach and a series of Wald tests. Significant group differences were found for all four mental health outcomes. In terms of depression, *Self-dissonant* had the highest mean scores, which were significantly higher than *Self-appreciating* ($p < .001$) but not *Self-doubting* ($p = .052$). *Self-doubting* was significantly higher than *Self-appreciating* ($p < .05$). For anxiety, *Self-dissonant* had the highest mean scores, which were significantly higher than *Self-appreciating* ($p < .001$) but not *Self-doubting*. Regarding self-esteem, *Self-dissonant* had the lowest mean scores, which were significantly lower than both *Self-doubting* ($p < .001$) and *Self-appreciating* ($p < .01$). *Self-doubting* was significantly lower than *Self-appreciating* ($p < .05$). As for subjective well-being, *Self-dissonant* had the lowest mean scores, which were significantly lower than *Self-appreciating* ($p < .01$) but not *Self-doubting*.

Exploring the moderating effect of internalized stigma class variable

To explore a mixture regression moderation, a series of overall tests of equivalence of the regression of depression and anxiety on demographic variables across the three latent classes were conducted. Based on the results from study 1, anxiety was significantly predicted by age. Therefore, we examined the moderating effect of the latent class on the regression of anxiety on age, while accounting for gender, region, SES, and self-esteem. For depression, it was significantly predicted by age, gender, and region. Thus, we examined the moderating effect of the latent class variable on the regression of depression on these three demographic variables separately, while accounting for SES, self-esteem, and other two variables. Religion was controlled in these models as a covariate. Statistically significant results are reported below.

The results show that there were statistically different relations between depression and region (i.e., Hong Kong vs. Mainland China) across at least one pair of internalized stigma classes ($\chi^2(2) = 9.979$, $p = .007$). To further investigate which class-specific relations differ, pairwise comparisons of the regression slopes on depression were carried out. When examining the pairwise slope differences for depression regressed on Hong Kong, the *Self-appreciating* class was significantly different from *Self-doubting* class ($p < .05$) and *Self-dissonant* classes ($p < .01$). There were no other significant slope differences between *Self-doubting* and *Self-dissonant*.

Additionally, each regression between Hong Kong and depression was examined across three classes. The regression coefficients of Hong Kong for *Self-appreciating*, *Self-doubting, and Self-dissonant* were all significantly different from zero, *b*s = -1.108 ($p < .05$), -5.127 ($p < .01$), and -5.999 ($p < .01$), respectively. Figure 6 visually presents the depression

mean score of each class by region (Mainland China and Hong Kong). This implies that living in Hong Kong was associated with decreased levels of depression compared to living in Mainland China while accounting for participants' age, gender, religion, self-esteem, and socioeconomic status. In particular, residing in Hong Kong was beneficial to *Self-doubting* and *Self-dissonant* groups since their depression levels did not increase compared to the *Self-appreciating* group, as those who lived in Mainland China did.

Examining the moderating effect of community connectedness

Linear regression models were carried out to examine if there was evidence of a significant moderation of community connectedness on the relationship between distal health outcomes (i.e., depression and anxiety) and the internalized stigma latent variable. The results reveal that there were no significant moderating effects of community connectedness. In fact, regression coefficients for both the latent class variable and community connectedness were not significantly different from zero, which indicates that they did not show significant relationships with distal health outcomes.

Chapter 5 Discussion

To the best of my knowledge, this is the first study that examined the characteristics and psychosocial health outcomes across three Chinese regions, including Mainland China, Hong Kong, and Taiwan. As the country with the second largest population in the world (over 1.4 billion), China is likely to have a large number of bisexual people. Hence, the applicability of this study's findings to address the mental health and well-being of this vast yet underserved population is highly significant. Moreover, this research project, by assessing the Chinese culture-specific mechanism of internalized stigma for Chinese bisexuals and how it impacts their psychosocial health, aligns with the principles of Counseling Psychology in understanding cultural diversity and producing knowledge rooted in intricate social, historical, and political realities within the Chinese cultures.

This study revealed that most Chinese bisexual participants were self-appreciating, indicating a low level of self-stigma regarding their sexuality. However, participants reported concerning mental health outcomes, such as a high prevalence of clinically significant anxiety, depression, and suicidal ideation. According to the minority stress model (Meyer, 2003), there are multiple levels of stressors facing Chinese bisexuals. These results highlight the importance of attending to distal minority stress processes (e.g., discrimination) and general stressors (Meyer, 2003) that also contribute to the heightened mental health risks of Chinese bisexual people. Moreover, this study identified regional differences among participants from Mainland China, Hong Kong, and Taiwan. For Chinese bisexuals, living in Taiwan was associated with less self-stigma, and living in Hong Kong buffered the negative impact of internalized stigma on depression. These differences may suggest the potential

beneficial impact of LGBT community resources and societal acceptance on the well-being of bisexual individuals.

Research findings fill in a critical gap in the literature by capturing the characteristics of Chinese bisexual people based on a large online sample, primarily reached by LGBTQ organizations and professional groups in target regions. Descriptive analyses revealed that most bisexual respondents were single, unmarried, non-religious, college-educated, women, living in urban settings, having average socioeconomic status, and in their twenties. For reference, in 2022, 41% of the Chinese population aged between 20 to 49; 56% of people between the ages of 25 and 34 are college educated, and 65% of the Chinese population live in urban settings (Textor, 2023a, 2023b; Wikipedia contributors, 2023). Compared to the general public, this research sample had greater percentages of people who were in their twenties (71%), college-educated (74%), and living in urban settings (85%). Beyond that, although most participants were single and unmarried, some participants reported being in same-gender relationships, mixed-gender relationships, and/or polyamorous relationships. Results show that same-gender marriage among bisexual communities is still uncommon in these three Chinese regions, among which only Taiwan has it legalized, with 1.5% of bisexual participants reporting being in a same-gender marriage or partnership. Besides, Chinese bisexual respondents encompassed a broad spectrum of sexualities. Their diverse sexual and romantic attractions toward similar and different genders counteract the stereotype that bisexual people are equally attracted to men and women.

This study also uncovered Chinese bisexuals' identity development milestones and their potential implications for public health and clinical interventions. Bisexual participants reported that they realized their sexual and romantic attractions toward more than one gender

around 16 years old, became aware of their bisexual identity around 17.5 years old, and began identifying as bisexual around 19 years old. Considering the varying degrees of available LGBT communities in three Chinese regions, bisexual youths living in Mainland China may have the least LGBT community resources, compared to Hong Kong and Taiwan. During these formative years, Chinese bisexuals go through secondary school and college or start being employed. Given the discrimination and violence against bisexual individuals, as well as their heightened risks for depression and suicidality, it's vitally important to cultivate an inclusive school environment to support Chinese bisexual youths (Wei & Liu, 2019).

Consistent with the literature, this study revealed heightened psychosocial health risks among bisexual participants, higher than those of the general population. It is concerning that all participants reported clinically elevated levels of anxiety and depression, with Taiwanese bisexual people reporting the highest percentages. Furthermore, it is alarming that around half of bisexual participants reported suicidal ideation. The prevalence of depression and anxiety is consistent with existent research about bisexual health disparities in Mainland China and Hong Kong (Chan et al., 2020; Wei et al., 2020); however, the prevalence of suicidal ideation in the current sample is higher than that of the MSM population in China which is about 20% (Wei et al., 2020). Undoubtedly, people's mental health deteriorated during the COVID-19 pandemic when the data was collected. Regardless, these psychosocial health risks are still higher than those of the general population. Among Chinese participants, a meta-analysis study found that stress was the most prevalent (48.1%) mental health consequence of the COVID-19 pandemic, followed by depression (26.9%) and anxiety (21.8%) (Bareeqa et al., 2021). In Hong Kong, a population-based study found that the prevalence rates for depression and anxiety were 19.8% and 14.0%, respectively. The

prevalence rate of experiencing both depression and anxiety was 12.4% during the pandemic (Choi et al., 2020). In Taiwan, the prevalence of depression and anxiety were 5.66% and 3.48%, respectively (Huang et al., 2023). In addition to psychiatric symptoms, this study also found that around 20% of bisexual respondents consumed four or more drinks containing alcohol weekly or daily. In contrast, a population-based study conducted in China found a prevalence rate of 7.8% for alcohol use risks (Li et al., 2020).

The present study reveals that internalized binegativity (IB) significantly correlated to the mental health of bisexual individuals, as evidenced by higher levels of depression, anxiety, suicidal ideation, and lower levels of self-esteem and subjective well-being, which are consistent with previous studies (Lambe et al., 2017; Paul et al., 2014). In contrast, internalized heterosexism (IH) did not exhibit a significant relationship with these mental health outcomes. These findings suggest that IB may have a more detrimental effect on the mental health of bisexual individuals compared to IH. However, it is important to note that the difference in results could be attributed to variations in measurement tools, with IB being assessed more comprehensively than IH. IH was measured by a unidimensional measure with three items, whereas IB was measured more thoroughly by 25 items with six dimensions. Future research should incorporate multidimensional measures (e.g., affective, behavioral, and cognitive) of internalized stigma related to IH, such as the Chinese Self-Stigma Scale (Mak & Cheung, 2010), to gain a deeper understanding of bisexual individuals' experiences. Furthermore, the study highlights low associations between risky behaviors and mental health outcomes, necessitating further investigation into the complex interplay between risky behaviors, mental health, and bisexual individuals' well-being.

The study provided valuable insights into the sense of connection that bisexual individuals have with the LGBTQ community in Chinese cultures. Firstly, demographic variables were found to have no significant correlation with community connectedness. However, it was observed that in Taiwan and Hong Kong, there was a higher availability of the local LGBT community, with close to 80% of participants reporting access, compared to 55% in Mainland China. Notably, on May 15, 2023, the largest LGBT organization in China-Beijing LGBT Center announced its halted operation due to "unavoidable" and unexplained circumstances whilst Taiwan passed an amendment allowing same-sex couples to adopt (Shepherd & Chiang, 2023). In order to examine bisexual people's connection with LGBTQ communities as a coping mechanism, it is important to gather further information regarding the frequency of their community engagement and the availability of community spaces and events specific to bisexual people's needs. It is worth noting that the study did not differentiate between online and offline LGBTQ communities in this regard. Furthermore, community connectedness demonstrated positive correlations with self-esteem and subjective well-being, but no significant associations were found with depression, anxiety, and suicidal ideation. This lack of significant correlation may explain why community connectedness did not serve as a significant moderator for the relationship between depression and different levels of internalized stigma. Another explanation is that bisexuals may have mixed experiences with queer communities for some of them can experience discrimination from queer members who hold prejudices against bisexual people. Finally, both IB and IH were found to be linked to lower levels of outness and community connectedness. This suggests that individuals who experience IB or IH tend to have lower levels of openness about their sexual orientation and feel less connected to the LGBTQ community in Chinese cultures.

Overall, these findings shed light on the importance of community connectedness for the well-being of bisexual individuals and highlight the impact of internalized stigma on their outness and sense of belonging within the LGBTQ community.

Through latent profile analysis, this study discovered three distinct Chinese bisexual subgroups based on their response patterns of seven internalized stigma indicators, including both IB and IH. The selected three-profile solution was chosen based on statistical evidence and conceptual considerations. However, it is likely that these three profiles are not representative of Chinese bisexual people's diverse experience of internalized stigma – further research involving diverse samples is needed. This study primarily used two identity labels (i.e., bisexual and pansexual) in recruitment messages, but a different profile may emerge if people who are attracted to more than one gender but don't identify as bisexual were included. In future research, researchers are encouraged to use more comprehensive ways of defining bisexuality in recruitment messages including not only identity labels but also sexual/romantic attractions, and sexual behaviors. Additionally, different profiles may exist in three Chinese regions given their unique social, political, and legal circumstances, although this study did not have sufficient samples to conduct LPA for each region. Given the numerical dominance of the region, mainland China may have had an outsized impact on the classes. Moreover, these three distinct bisexual profiles share some similar characteristics discovered in previous research (Choi et al., 2019), such as having a self-affirming subgroup and an ambivalent subgroup endorsing mixed attitudes and beliefs about one's bisexuality. These findings perhaps corroborate the utility of using latent profile analysis to discover bisexual subgroups and explore their diverse mental health constellations.

Regarding the three profiles, most participants were in the *Self-appreciating* class, with low levels of negative self-evaluation and high levels of self-appreciation with regard to their sexuality. Not surprisingly, this group of bisexual participants reported better mental health outcomes than another two classes. This is consistent with previous research that bisexual people report enhanced health outcomes when they can reject internalized stigma (Herrick et al., 2013). However, as reported earlier, it is important to keep in mind that all bisexual respondents reported clinically elevated levels of depression and anxiety, including the self-appreciating bisexual respondents. Additionally, respondents in the second group, *Self-doubting*, endorsed moderate levels of all seven indicators, which indicates that bisexual identity formation is not a linear process because positive and negative feelings about bisexuality can coexist and continue to cause worse psychosocial health outcomes for Chinese bisexuals compared to the *Self-appreciating* class. Furthermore, the third group, *Self-dissonant* experienced conflicting thoughts and feelings that may have contributed to their worse mental health outcomes, compared to *Self-doubting*, and *Self-appreciating*. Cognitively, bisexual people in this group were able to debunk some common stigmas about bisexuality, such as "bisexuality is illegitimate" and "bisexual people are sexually irresponsible". However, emotionally, they still carried high levels of shameful and aversive feelings about their sexuality. The identification of the *Self-dissonant* group has significant implications for clinical interventions in that it may not be helpful or even harmful to only focus on debunking common stigmas for bisexual people while neglecting their shameful and guilty feelings toward their sexuality. Their negative thoughts need to be addressed hand in hand with their negative feelings.

Furthermore, both *Self-doubting* and *Self-dissonant* groups reported worse psychosocial health outcomes than *Self-appreciating,* which reported low levels of both IB and IH. It may be likely that the double internalized stigma- IB and IH- experienced by bisexual people contributed to their health disparities. Notably, the *Self-appreciating* group reported a mild sense of *Family Shame*, that is negative feelings about disappointing one's family, while *Self-doubting* and *Self-dissonant* adopted higher levels of Family Shame. These results reflect variations in bisexual people's experience related to family shame as well as actual stress to fulfill filial piety and maintain a mixed-gender marriage to continue the family line for Chinese bisexuals. Finally, although previous studies have found associations with small effect sizes between IB/IH and psychosocial health outcomes (Chan et al., 2020; Huang et al., 2020; Wen & Zheng, 2019), bisexual participants were lumped together as one homogeneous group. Results from this project suggest that it may be important for researchers and clinicians to consider subgroup differences among bisexual people, as *Self-dissonant* and *Self-doubting* groups reported significantly worse psychosocial health outcomes than the *Self-appreciating* group.

This study discovered significant gender differences among bisexual participants concerning their identity development and experiences of internalized stigma. Notably, there were significant gender differences related to the age at which individuals first realized they may be bisexual. Men, on average, experienced this realization approximately two years later than non-binary individuals, with statistical significance ($p < .01$). Another noteworthy finding was that women exhibited significantly lower levels of IB when controlling for other demographic variables, as compared to non-binary individuals. However, it is important to highlight the need for future research to include non-binary individuals to gain a

comprehensive understanding of their unique experiences and dynamics related to internalized stigma. Additionally, compared to women, men were more likely to be in the *Self-doubting* class relative to *Self-appreciating*. These gender differences can be partially explained by the presence of rigid gender norms in Chinese cultures, particularly for men. In patriarchal societies, men often face societal expectations to have offspring in order to carry forward the family name, which may contribute to greater internal conflict and self-doubt among bisexual men. Moreover, consistent with attitudes toward lesbians and gay men, there is a pattern of more negative attitudes toward bisexual men than bisexual women (Dodge et al., 2016). Population-based studies have shown that both heterosexual and gay/lesbian populations rate their feelings about bisexual men lower on a "feeling thermometer" compared to their feelings about bisexual women (Herek, 2002; Norton & Herek, 2013). This discrepancy in attitudes, coupled with strict cultural expectations for marriage, may contribute to the unique challenges faced by bisexual men in terms of internalized stigma and self-acceptance. Finally, regarding depression, there was an interaction effect between gender and region, significant at the .05 level, but after adjusting for the false discovery rate, this effect lost its statistical significance. Overall, non-significant findings related to gender may result from the sample size differential regarding gender identity, with only 11% of participants identifying as men, 65% as women, and 20% as non-binary. Thus, additional investigation is required to better understand the complex relationship between gender, region, and depression among bisexual individuals. To reiterate, this study highlights the significant gender differences observed in the identity development and experiences of internalized stigma among bisexual participants. These findings emphasize the need for greater attention to gender-specific challenges for Chinese bisexual people and the inclusion

of non-binary individuals in future research to better comprehend the diverse experiences within the bisexual community.

The findings of the study showed intriguing disparities among bisexual populations in Taiwan, Mainland China, and Hong Kong. Surprisingly, respondents in Mainland China and Hong Kong reported significantly lower levels of depression compared to those living in Taiwan, despite Taiwan's higher levels of societal acceptance towards LGBTQ communities. One possible explanation for this discrepancy is the influence of religious beliefs, which can impact self-acceptance and subsequently affect mental health. It was noted that a higher proportion of Taiwanese respondents identified as religious, encompassing various faiths such as Buddhism, Christianity, Confucianism, Taoism, and Taiwanese indigenous beliefs. In particular, 44.1% of bisexual Taiwanese respondents reported being religious, compared to 20.4% in Hong Kong and 9.7% in Mainland China. Additionally, the research highlighted significant regional differences in the age of bisexual identity formation. Taiwanese respondents reported approximately one and a half years later than those in Mainland China and Hong Kong. This is likely due to the age gap that existed in the sample, with Taiwanese participants being about two years older than those in Hong Kong and four years older than those in Mainland China.

Furthermore, the study found that bisexual individuals in Taiwan were less likely to be in the *Self-doubting* class, relative to *Self-appreciating*, as compared to their counterparts in Mainland China. This can be attributed to the greater presence of bisexual support groups in Taiwan and the resulting education and support that combats common stigmas about bisexuality, along with the higher levels of societal acceptance. The study also discovered that the internalized stigma latent variable played a moderating role in the relationship

between depression and region (Hong Kong vs. Mainland China). Lower levels of depression were observed among individuals living in Hong Kong compared to those in Mainland China, particularly among the *Self-dissonant* class. This can be related to greater societal acceptance of and legal protections for LGBTQ communities in Hong Kong. Nonetheless, to gain a comprehensive understanding of these regional variations, further research is needed to explore the multifaceted factors influencing depression and mental health outcomes among bisexual populations. Finally, there were no significant demographic differences found between *Self-appreciating* and *Self-dissonant* classes, which were unexpected given the significantly different mental health outcomes reported by these two classes. This may be a result of the small sample size (i.e., 6.6%) making up the *self-dissonant* class. Future studies should investigate non-significant findings that were not expected.

The study uncovered several noteworthy findings regarding the impact of age on mental health and identity development among bisexual individuals. Firstly, being older was found to be a significant predictor of lower levels of depression and anxiety. This may suggest that with age, individuals tend to acquire coping skills and resources that contribute to better mental health outcomes. This finding also underscores the importance of attending to the mental health concerns of young bisexual people. Additionally, the research revealed a significant association between age and the duration of identity development milestones. Older respondents reported longer periods of time for all three indicators of bisexual identity development. Moreover, the study demonstrated that the duration of bisexual identity formation predicted lower levels of IB. It is likely that individuals who have identified as bisexual for a longer period of time have encountered and overcome external discrimination and internal struggles related to bisexuality, leading to reduced levels of IB. Notably, no

significant generational differences were observed among the three identified internalized stigma classes, potentially due to the limited representation of middle-aged and senior bisexual respondents. In fact, the *Self-dissonant* class only consisted of people who were younger than 35. However, it is important for future research to include a more diverse sample that includes a larger number of older bisexual individuals to gain a comprehensive understanding of their experiences and challenges. The lack of representation of older bisexual respondents may also reflect the lack of community presence and resources for middle-aged and senior bisexual people in these three Chinese regions. Conducting qualitative research with a smaller number of middle-aged and senior Chinese bisexual individuals to understand their unique challenges and strengths might be an alternative when reaching a large sample is challenging.

The study also examined the impact of socioeconomic status (SES) on various aspects of the participants' lives. It was found that higher SES was associated with higher levels of self-esteem, suggesting that individuals with greater socioeconomic resources tend to have a more positive view of themselves. However, the research revealed that high SES does not always act as a protective factor. Respondents with high SES reported engaging in more frequent alcohol use and engaging in sexual activities under the influence of alcohol and drugs. These findings indicate that individuals with higher socioeconomic status may be more prone to engaging in risky behaviors, highlighting the need for comprehensive interventions and support systems to address the potential negative consequences associated with high SES.

Admittedly, this research has some limitations, some of which provide directions for future research. Firstly, as stated earlier, despite having a large bisexual sample, the research

results by no means are representative of bisexual people across three regions. In particular, there were low representations of bisexual people who were middle-aged and senior, living in rural areas, not connected with LGBTQ organizations, and are in intimate relationships or marriages. Secondly, measurement issues related to reliability and validity impacted the scope of our research questions. The differences in risky sexual behaviors across three internalized stigma classes were unexamined due to the low reliability of three unvalidated items. Additionally, although substance use was measured by a validated scale, one of the questions was only asked among participants based in Mainland China due to human error, thereby disallowing regional comparisons. Thirdly, behavioral indicators were not collected to measure bisexual people's community connectedness as a coping mechanism, such as individuals' frequency of attending community bi-specific events. This absence of data hinders a comprehensive understanding of how engagement in community activities may influence bisexual people's coping strategies and overall well-being. Furthermore, the study lacks information regarding the levels of social support received by respondents from various sources, including their family, friends, and LGBTQ community members. The absence of data on social support networks limits the examination of the potential impact of these relationships on individuals' mental health and resilience within the LGBTQ community. These limitations indicate areas for further exploration and highlight the need for future research endeavors to incorporate behavioral indicators and collect data on social support from multiple sources for bisexual people. By addressing these limitations, researchers can gain a more comprehensive understanding of Chinese bisexual people's psychosocial health risks, behavioral risks, coping mechanisms, and the role of social support in enhancing well-being within the LGBTQ community.

Despite these limitations, the findings of this study hold significant clinical implications for healthcare professionals working with bisexual clients. It is crucial for clinicians to be well-informed about the characteristics of bisexual populations and the diversity within bisexual communities to avoid making assumptions. Bisexual individuals encompass a wide range of sexual and romantic attractions, as well as diverse intimate relationship practices and preferences. Stereotypes or negative beliefs about bisexual people can create ruptures in therapeutic relationships with bisexual clients.

In addition, research highlights important distinctions in identity development, experiences of stigma, and psychosocial health risks among bisexual individuals across genders, regions, religious beliefs, and generations. During the intake session, it is essential to gather information on bisexual clients' demographic backgrounds (e.g., religion) to better understand their unique experiences and develop comprehensive case conceptualizations. For instance, when working with Chinese bisexual immigrants in the United States, clinicians should be cognizant of the diverse experiences and community engagement based on their regional backgrounds, whether from Mainland China, Hong Kong, or Taiwan. Each region has its own social, historical, and political contexts that shape the experiences of Chinese bisexual individuals. Furthermore, understanding the characteristics of the three different internalized stigma classes can inform treatment goals and clinical interventions. For self-appreciating Chinese bisexual clients who accept and value their sexuality, support may be needed in coping with pressure and stress from their families. When working with self-doubting and self-dissonant Chinese bisexual individuals, it is vital to affirm their bisexual identity and help them process negative beliefs and feelings about themselves. Simply focusing on addressing negative stereotypes through cognitive therapy may not be effective

for some bisexual individuals due to their unexpressed feelings of shame related to their bisexuality and family. Finally, the findings underscore the need for tailored clinical interventions to support bisexual individuals with religious beliefs who may experience higher levels of internalized stigma. Healthcare professionals should be equipped to address the unique challenges faced by this population in a sensitive and culturally competent manner. By incorporating these considerations into clinical practice, professionals can better support the mental health and well-being of bisexual individuals.

The findings from the current research project can also be utilized to inform public health interventions and policies to address bisexual health disparities in Chinese regions. To increase public awareness about bisexual people's unique challenges and health disparities, LGBTQ community organizations, educators, and media outlets should publicize and disseminate more information about bisexual people's experiences, such as the findings from this study. Moreover, the high prevalence of psychiatric symptoms highlights the need for more funding and training to equip healthcare professionals with sufficient knowledge and skills to service Chinese bisexual people. Finally, the lack of representation of rural, middle-aged, and senior bisexuals in the study underscores the need for community resources for these marginalized bisexual people to address their unique challenges, such as loneliness and disconnection from the bisexual community.

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Appendix A

Questions	Hypotheses	IV/ analyses	DV
Study 1			
Q1: What are the characteristics of Chinese bisexuals in terms of their demographics, minority identity, and psychosocial health?	Exploratory	Descriptive analysis for the entire sample (N = 685) Demographics: • Gender identity (categorical) • Region (categorical) • Age (continuous/ or categorical) • Education level (categorical) • SES (mean of a 10-point response scale) • Religion (categorical) • Sex assigned at birth (categorical) • Marriage status (categorical) Minority identity: • Identity milestones (continuous) • Physical attraction (mean of a 7-point response scale) • Romantic attraction (mean of a 7-point response scale) • Sexual desire (mean of a 7-point response scale and categorical) • Sexual relationships (mean of a 7-point response scale and categorical)	Psychosocial health: • Anxiety (mean of a 4-point response scale/ or categorical) • Depression (mean of a 4-point response scale/ or categorical) • Suicidality (mean of a 5-point response scale/ frequency or dichotomized) • Subjective well-being (mean of a 7-point response scale/ or categorical) • Self-esteem (mean of a 4-point response scale) • Tobacco/Alcohol/Drug use (mean of a 4-point response scale/ or categorical) • Risky sexual behaviors (continuous, mean of three 5-point questions and categorical) • Community connectedness (mean of a 7-point response scale and dichotomous) • Outness (mean of an 11-point response scale/ categorical frequency) Internalized stigma: • Internalized binegativity (mean of a 7-point response scale)

			• Internalized homophobia (mean of a 7-point response scale) • Concealment (mean of an 11-point response scale/ or categorical frequency)
Q2: Do different ages, gender, and region interact and create distinctive social/structural ecology that results in different psychosocial outcomes?	**H1**: Bisexual people living in Taiwan with more societal acceptance and legal protections may have better psychosocial health outcomes than those living in Mainland China; **H2**: Bisexual individuals living in Taiwan may have more adaptive coping mechanisms than those living in Mainland China; Exploratory analysis will investigate differences in psychosocial health and internalized stigma in terms of age, gender, region, and SES.	Multiple regression modeling for the entire sample (N = 685) IV • Gender identity (categorical) • Region (categorical) • Age (continuous or categorical) • Years of identity formation (how many years have you identified as a bisexual) Covariates • Education level (categorical) • SES (mean of a 10-point response scale) • Religion (categorical) • Rural/suburban/urban • Sex assigned at birth (categorical) Questions: Moderation: • Gender (3) * region (3) • Variables: woman, man, HK, China	Psychosocial health: • Anxiety (mean of a 4-point response scale/ or categorical) • Depression (mean of a 4-point response scale/ or categorical) • Self-esteem (mean of a 4-point response scale) • Substance use (mean of a 4-point response scale/ or categorical frequency) • Risky sexual behaviors (continuous, mean of three 5-point questions and categorical) • Community connectedness (mean of a 7-point response scale and dichotomous) Internalized stigma: • Internalized binegativity (mean of a 7-point response scale) • Internalized homophobia (mean of a 7-point response scale)
Study 2			
Q1 Do different components of	**H1**: Different configurations of IS profiles emerge.	LPA for classification, then moderation	Distal outcomes:

IB and IH interact and create distinctive internalized stigma profiles that impact health outcomes among Chinese bisexuals?	**H2**: Anxiety, depression, and risky sexual behaviors differ across IS profiles. Low levels of IS will be associated with less psychosocial health risks and more resilience, while high levels of IS will be related to more psychosocial health risks and less resilience. **Exploratory**: Do IS profiles moderate the association of bisexuals' age, gender, region with psychosocial health outcomes?	Profile indicators: • Monosexism (4 items) • Illegitimacy (4) • Aversion (5) • Irresponsibility (5) • Family Shame (3) • Identity Affirmation (5) • Internalized Heteronormativity (3) Covariates: • Gender identity (categorical) • Region (categorical) • Age (categorical, 18-24, 25-34, 35-49, Huang et al., 2020) • SES	• Anxiety (mean of a 4-point response scale/ or categorical) • Depression (mean of a 4-point response scale/ or categorical) • Self-esteem (mean of a 4-point response scale) • Subjective well-being (mean of a 7-point response scale/ or categorical)
Q2 How does bisexuals' community connectedness impact the relationship between IS and depression and anxiety?	**H1**: LGBT community connectedness moderates the correlation between IS profiles and depression, anxiety.	IV • Internalized stigma profile classes Moderators: • Community connectedness (mean of a 7-point response scale and dichotomous) Covariates: • Gender • Region • Age • SES	DV: • Anxiety (mean of a 4-point response scale/ or categorical) • Depression (mean of a 4-point response scale/ or categorical)

Tables and Figures

Table 1 *Sample demographic characteristics*

	Mainland China *N* (%) (n = 474)	**Hong Kong** *N* (%) (n = 93)	**Taiwan** *N* (%) (n = 118)	**P value**
Age, mean (*SD*)	23.62 (4.51)	25.05 (6.09)	27.52 (6.12)	<.001
SES, mean (*SD*)	5.60 (1.50)	5.42 (1.48)	5.84 (1.38)	.11
Sex assigned at birth				
Female	414 (87.3)	83 (89.2)	95 (80.5)	.16
Male	60 (12.7)	10 (10.8)	22 (18.6)	
Gender Identity				
Woman	312 (65.8)	62 (66.7)	73 (61.9)	.86
Man	52 (11.0)	11 (11.8)	11 (9.3)	
Nonbinary	97 (20.5)	16 (17.2)	27 (22.9)	
Edu. Degree				
High School	106 (22.4)	35 (37.6)	18 (15.3)	<.01
Bachelor's	247 (52.1)	43 (46.2)	69 (58.5)	
Graduate	102 (21.5)	15 (16.1)	31 (26.3)	
Religion				
Non-religious	428 (90.3)	74 (79.6)	66 (55.9)	<.001
Religious	46 (9.7)	19 (20.4)	52 (44.1)	
Home residence				
Urban	408 (86.1)	79 (84.9)	92 (78.0)	.08
Suburban/rural	65 (13.7)	14 (15.1)	26 (22.0)	
Local LGBT Community				
Yes	259 (54.6)	72 (77.4)	92 (78.0)	<.001
No	215 (45.4)	21 (22.6)	26 (22.0)	

Note. P value was determined using the Chi-square test comparing results across three regions.

Table 2 *Regional and gender differences of bisexual identity milestones in ages*

		Sexual/romantic attraction awareness	*p* value	Bisexual identity awareness	*p* value	Bisexual identity formation	*p* value
	N	M (*SD*)		M (*SD*)		M (*SD*)	
Gender							
1 = Woman	447	16.97 (4.13)		18.25 (4.03)		19.84 (4.32)	
2 = Man	74	16.35 (6.05)		19.32 (5.90)		20.97 (5.94)	
3 = Non-binary	140	15.99 (4.63)		17.65 (4.80)		19.48 (5.24)	
F		2.804	.061	3.406	**.034**	2.470	.085
Post hoc		1 > 3	.024	**2 > 3**	**.009**	2 > 3	.029
Region							
1 = Mainland China	474	16.74 (4.61)		18.16 (4.45)		19.75 (4.68)	
2 = Hong Kong	93	16.24 (4.69)		18.02 (5.24)		19.61 (5.42)	
3 = Taiwan	118	17.29 (4.65)		19.19 (4.41)		21.02 (4.95)	
F		1.367	.256	2.646	.072	3.547	**.029**
Post hoc				1 < 3	.028	**1 < 3**	**.037**
						2 < 3	**.035**

Figure 1 *Chinese bisexual people's sexual and romantic attraction*

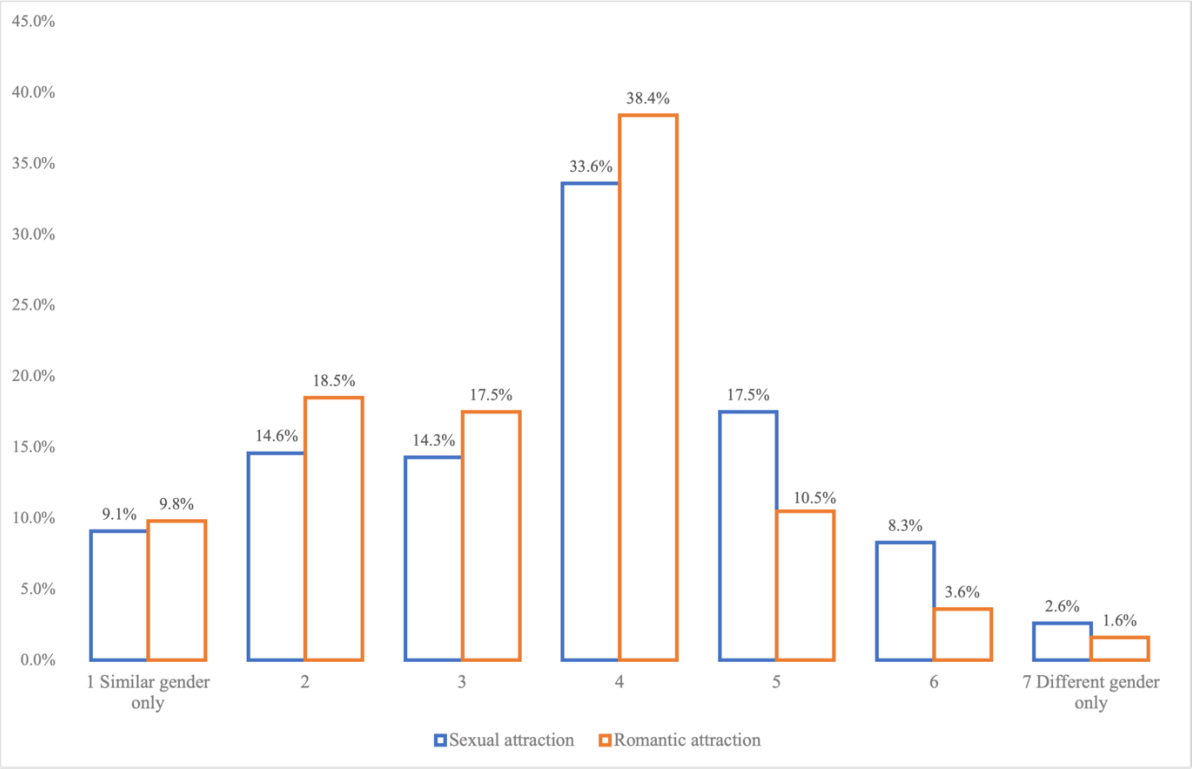


Table 3 *Psychiatric symptoms and substance use among bisexual participants*

Variable	**Mainland China** *N* (%) (n = 474)	**Hong Kong** *N* (%) (n = 93)	**Taiwan** *N* (%) (n = 118)
Depression, symptoms[a]			
None (0-4)	0	0	0
Mild (5-9)	40 (8.4)	8 (8.6)	6 (5.1)
Moderate (10-14)	139 (29.3)	29 (31.2)	35 (29.7)
Moderately severe (15-19)	295 (62.2)	56 (60.2)	77 (65.3)
Anxiety, symptoms[b]			
None (0-4)	0	0	0
Mild (5-9)	122 (25.7)	22 (23.7)	21 (17.8)
Moderate (10-14)	194 (40.9)	37 (39.8)	52 (44.1)
Severe (≥15)	158 (33.3)	34 (36.6)	45 (38.1)
Suicidal ideation[c]			
Last year, yes	247 (52.1)	42 (45.2)	61 (51.7)
Prior to last year, yes	327 (69.0)	66 (71.0)	85 (72.0)
Tobacco use[d]			
Never	366 (77.2)	77 (82.8)	100 (84.7)
Monthly	24 (5.1)	7 (7.5)	4 (3.4)
Weekly	29 (6.1)	3 (3.2)	4 (3.4)
Daily	55 (11.6)	6 (6.5)	10 (8.5)
Alcohol use[d]			
Never	277 (58.4)	43 (46.2)	68 (57.6)
Monthly	100 (21.1)	30 (32.3)	27 (22.9)
Weekly	82 (17.3)	16 (17.2)	21 (17.8)
Daily	15 (3.2)	4 (4.3)	2 (1.7)

Note. [a] scored using the Patient Health Questionnaire-9.

[b] scored using the Generalized Anxiety Disorder-7.

[c] scored using self-reported questions.

[d] scored using items from the Tobacco, Alcohol, Prescription medications, and other Substance Tool.

Table 4 *Correlation matrix for psychosocial health outcome variables*

	IB	CIH	Concealment	Outness	Alcohol use	Risky sex	Community connectedness	Self-esteem	Subjective well-being	Anxiety	Depression	Suicidal ideation
IB	-											
CIH	.53***	-										
Concealment	.01	.03	-									
Outness	-.28***	-.25***	-.11**	-								
Alcohol use	-.02	-.02	-.07	.16***	-							
Risky sex	.02	.01	-.08*	.16***	.40***	-						
Community connectedness	-.18***	-.15***	-.08*	.32***	.05	.06	-					
Self-esteem	-.22***	-.05	-.07	.07	.01	-.02	.11**	-				
Subjective well-being	-.16***	-.04	-.05	.15***	.03	.01	.14***	.59***	-			
Anxiety	.14***	.01	-.04	.07	.07	.08*	-.01	-.51***	-.37***	-		
Depression	.18***	.02	-.02	.34	.08*	.09*	-.03	-.58***	-.46***	.81***	-	
Suicidal ideation	.08*	-.02	-.02	.10**	.11**	.10*	.01	-.46***	-.35***	.51***	.59***	-
Mean	135.29	7.84	28.71	17.94	1.67	1.39	13.40	26.78	18.96	13.93	17.46	4.38
SD	44.99	4.65	13.89	9.68	.87	.78	4.49	6.23	6.42	5.43	6.25	2.21
Range	61 - 304	3 - 21	5 - 55	5 - 49	1 - 4	1 - 5	3 - 21	10 - 40	5 - 35	7 - 28	9 - 36	2 - 10

Note. *** $p < .001$, ** $p < .01$, * $p < .05$.

Table 5 *Summary of multiple regression analyses*

Variable	Depression		Anxiety	
	b	*p* value	b	*p* value
Age[a]	**-.21**	**<.001**	**-.16**	**.002**
Years of bisexual identity	.11	.014	.08	.066
SES	-.07	.064	-.06	.121
Female assigned at birth	.03	.659	-.03	.599
Religious	-.03	.430	-.02	.684
Suburban/Rural	.05	.191	.04	.335
Education				
High school or less[b]	-		-	
Bachelor's degree	-.04	.418	-.04	.427
Graduate degree	-.04	.494	-.04	.481
Gender				
NB[b]	-		-	
Woman	**-.34**	**.001**	-.21	.050
Man	-.18	.135	-.13	.283
Region				
Taiwan[b]	-		-	
Mainland China	**-.32**	**.001**	-.24	.021
Hong Kong	**-.32**	**.002**	-.21	.054
Woman * Mainland China	.27	.029	.14	.250
Woman * Hong Kong	.23	.028	.14	.173
Man * Mainland China	.12	.243	.02	.867
Man * Hong Kong	.03	.611	-.03	.650
Model				
F	3.77		2.62	
P value	<.001		<.001	
R^2	.09		.06	

Table 5 *Summary of multiple regression analyses (cont.)*

Variable	Internalized binegativity		Internalized heterosexism	
	b	*p* value	b	*p* value
Age[a]	-.02	.778	-.02	.732
Years of bisexual identity	**-.18**	**<.001**	-.12	.005
SES	-.11	.008	-.05	.165
Female assigned at birth	-.14	.020	-.12	.047
Religious	**.14**	**<.001**	.07	.076
Suburban/Rural	.04	.273	.04	.330
Education				
High school or less[b]	-		-	
Bachelor's degree	.01	.782	.04	.473
Graduate degree	.04	.487	.07	.180
Gender				
NB[b]	-		-	
Woman	.07	.476	.07	.525
Man	.13	.263	.10	.377
Region				
Taiwan[b]	-		-	
Mainland China	.16	.113	-.05	.609
Hong Kong	.11	.284	.18	.076
Woman * Mainland China	-.09	.494	.01	.959
Woman * Hong Kong	.01	.913	-.08	.453
Man * Mainland China	-.04	.674	.17	.100
Man * Hong Kong	.05	.468	-.06	.359
Model				
F	4.44		6.04	
P value	<.001		<.001	
R^2	.10		.13	

Table 5 *Summary of multiple regression analyses (cont.)*

Variable	Self-esteem		Alcohol use	
	b	*p* value	b	*p* value
Age[a]	.11	.028	.06	.261
Years of bisexual identity	.00	.968	.12	.009
SES	**.28**	**<.001**	**.12**	**.004**
Female assigned at birth	-.08	.172	.01	.893
Religious	.01	.772	.01	.775
Suburban/Rural	.01	.843	-.06	.135
Education				
High school or less[b]	-			
Bachelor's degree	.06	.180	-.01	.862
Graduate degree	.13	.019	-.04	.463
Gender				
NB[b]	-			
Woman	.04	.660	.07	.529
Man	-.00	.981	.24	.053
Region				
Taiwan[b]	-		-	
Mainland China	.24	.019	.13	.191
Hong Kong	.24	.020	.10	.348
Woman * Mainland China	-.02	.886	.00	.998
Woman * Hong Kong	-.19	.055	-.04	.681
Man * Mainland China	.01	.909	-.14	.198
Man * Hong Kong	-.05	.448	-.06	.412
Model				
F	8.06		2.48	
P value	<.001		<.001	
R^2	.17		.06	

Table 5 *Summary of multiple regression analyses (cont.)*

Variable	Risky sex		Community connectedness	
	b	*p* value	b	*p* value
Age[a]	.03	.549	-.05	.390
Years of bisexual identity	.02	.596	.02	.597
SES	**.12**	**.003**	.00	.998
Female assigned at birth	-.07	.268	-.03	.632
Religious	.04	.353	.08	.072
Suburban/Rural	-.04	.326	-.04	.305
Education				
High school or less[b]	-		-	
Bachelor's degree	.02	.645	-.07	.191
Graduate degree	.04	.531	.01	.925
Gender				
NB[b]	-		-	
Woman	.02	.636	-.03	.528
Man	-.02	.703	-.11	.074
Region				
Taiwan[b]	-		-	
Mainland China	-.04	.423	-.04	.524
Hong Kong	-.03	.541	-.06	.264
Woman * Mainland China				
Woman * Hong Kong				
Man * Mainland China				
Man * Hong Kong				
Model				
F	2.04		1.26	
P value	.019		.240	
R^2	.04		.02	

Note. [a] Mean centered. [b] reference group. b: standardized coefficient. Significant relations bolded indicates coefficients which met FDR-corrected significance level (0.004).

Table 6 *Summary of the model fit for converged LPA models*

	k	Log Likelihood	BIC	aBIC	AWE	BLRT *p* value	BF	cmP	Entropy
Model 1	1	-7997	16085	16040	16218	–	0	<0.001	1
	2	-7360	14863	14793	15073	<0.001	0	<0.001	0.94
	3	-7146	14487	14392	14773	<0.001	0	<0.001	0.93
	4	-7000	14247	14127	14609	<0.001	–	1	0.93
Model 2	1	-7997	16085	16040	16218	–	–	1	1
Model 3	1	-7339	14906	14794	15239	–	0	<0.001	1
	2	-7093	14467	14330	14877	<0.001	0	<0.001	0.95
	3	-6960	14252	14090	14738	<0.001	0	<0.001	0.93
	4	-6862	14110	13922	14672	<0.001	–	1	0.97
Model 4	1	-7339	14906	14794	15239	–	–	1	1

Note. k = number of classes; Par = Parameters; *LL* = model log likelihood; BIC = Bayesian information criterion; aBIC = sample size adjusted BIC; CAIC = consistent Akaike information criterion; AWE = approximate weight of evidence criterion; BLRT = bootstrapped likelihood ratio test p-value; VLMR = Vuong-Lo-Mendell-Rubin adjusted likelihood ratio test p-value; *cmPk* = approximate correct model probability.

Figure 2 *Conceptual diagram of the final three-class latent profile analysis model with covariates and distal outcomes.*

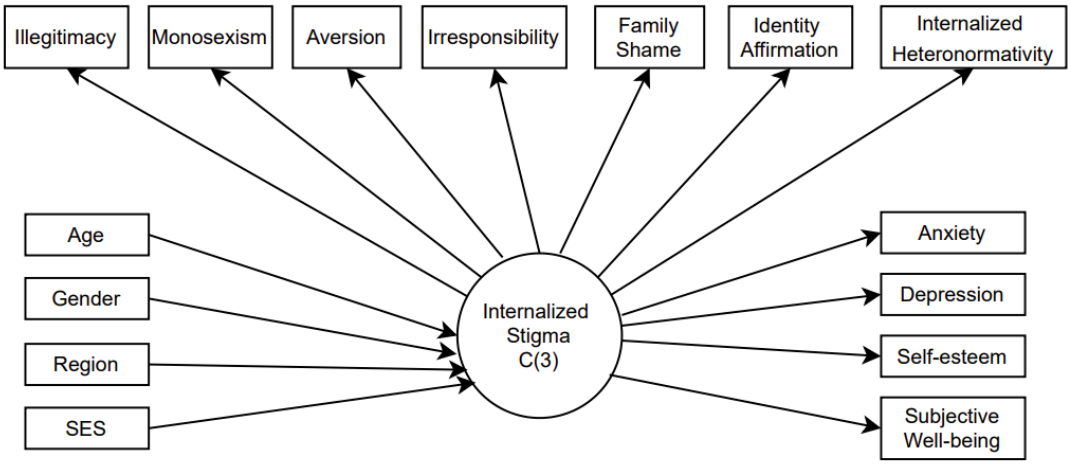
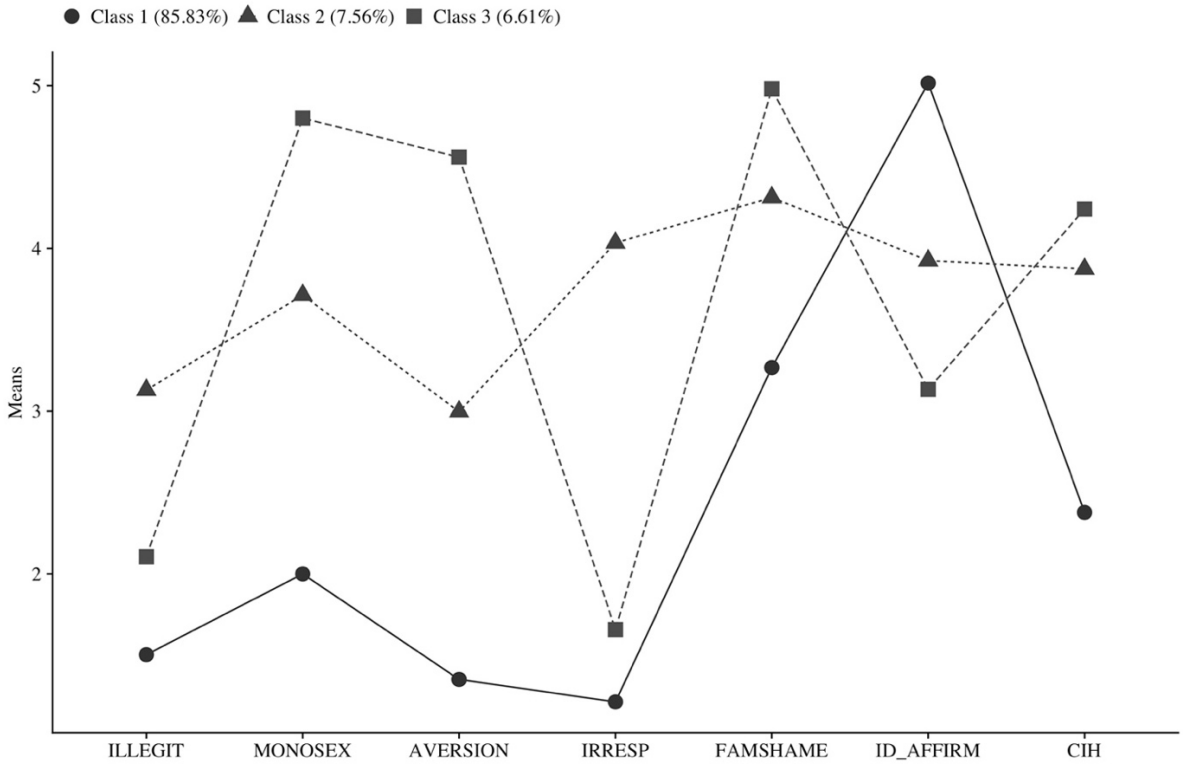


Figure 3 *Three-class model about internalized stigma from the latent profile analysis*



Note. ILLEGIT, MONOSEX, AVERSION, IRRESP, FAMSHAME, ID_AFFIRM represent the average score of the six subscales of the Chinese Internalized Binegativity Scale: *Illegitimacy*, *Monosexism*, *Aversion*, *Irresponsibility*, *Family Shame*, and *Identity Affirmation*, respectively. CIH represents the average score of the *Internalized Heteronomativity* subscale from the Chinese Internalized Homophobia Scale.

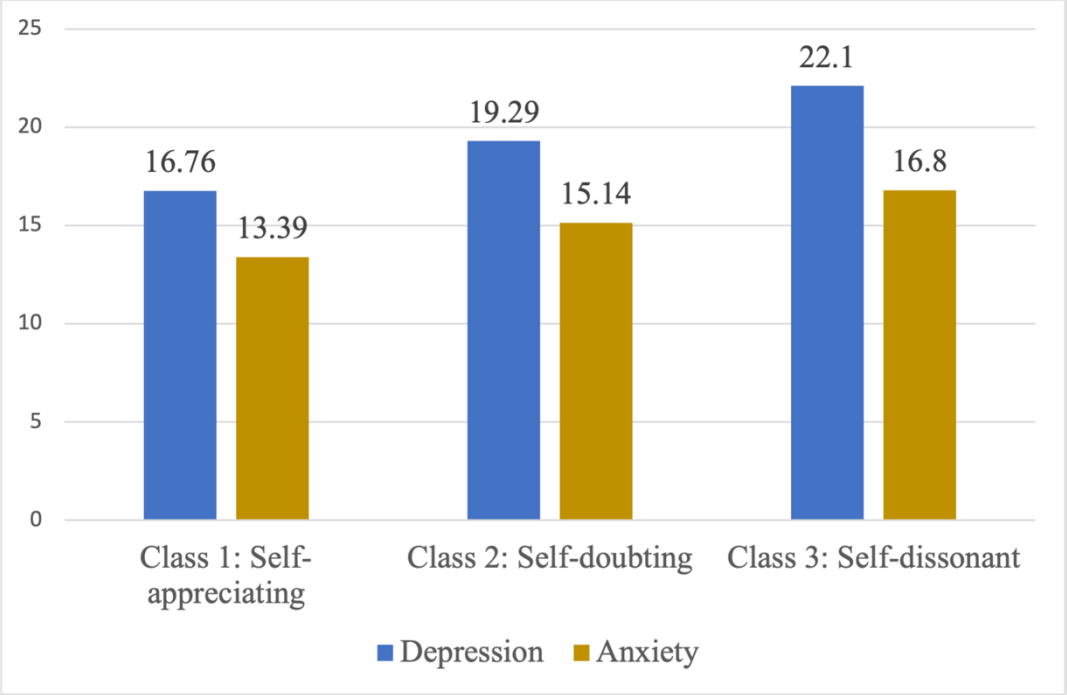
Table 7 *Adjusted odds ratio of the predictors of class membership*

	Class 2 (7.44%): Self-doubting n = 50		Class 3 (6.70%): Self-dissonant n = 45	
Covariate	aOR [95% CI]	*P* value	aOR [95% CI]	*P* value
Gender Identity				
Cisgender woman[a]				
Cisgender man	6.27 [2.80, 14.02]	**<.001**	2.18 [.76, 6.24]	.145
TGNB	2.09 [1.01, 4.30]	**.046**	1.26 [.59, 2.70]	.547
Age group				
Young: 18-24[a]				
Older: 25 and above	1.07 [.52, 2.20]	.865	.71 [.32, 1.59]	.407
Region				
Mainland China[a]				
Hong Kong	.52 [.18, 1.49]	.222	.86 [.33, 2.23]	.752
Taiwan	.32 [.11, .94]	**.038**	.78 [.29, 2.05]	.611
SES				
High[a]				
Low	1.06 [.57, 1.97]	.847	1.52 [.80, 2.90]	.200
Religion				
No[a]				
Yes	2.32 [1.09, 4.91]	**.028**	1.58 [.65, 3.82]	.311

Note. Class 1 (85.86%, Self-appreciating) is the reference class; 13 cases were excluded due to missing values on demographic variables.

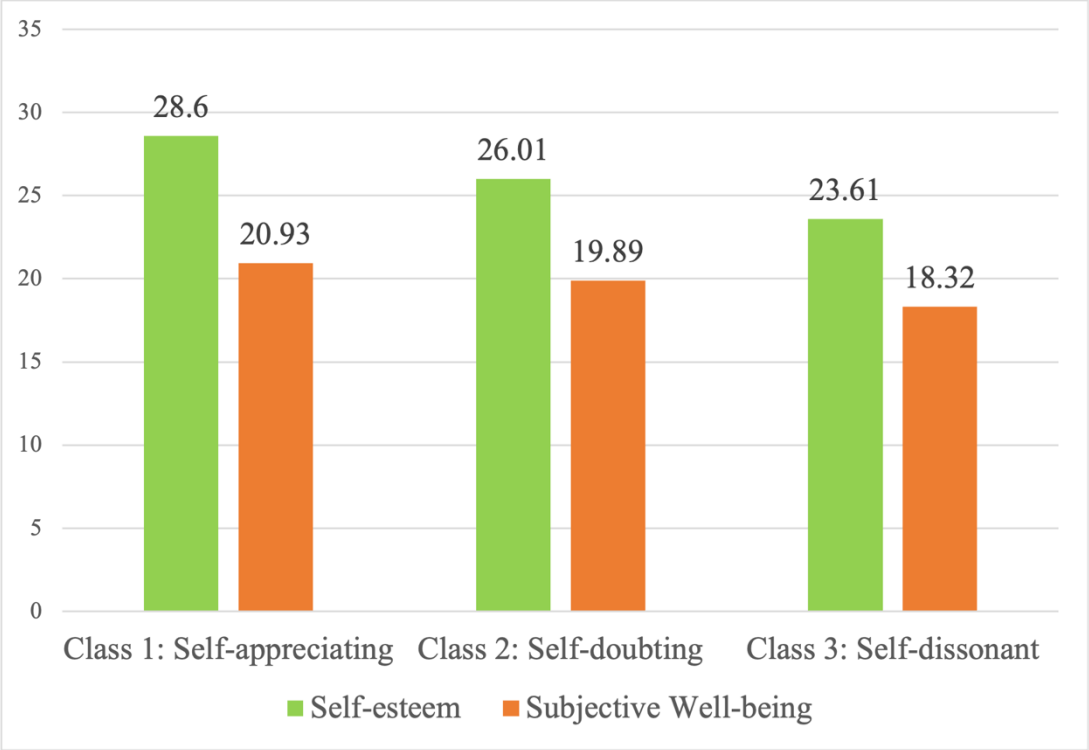
[a] reference group.

Figure 4 *Mean estimates of depression and anxiety by class*



Note. Significant group differences were found for depression ($p < .001$), with *Self-dissonant* being significantly higher than *Self-appreciating* ($p < .001$) but not *Self-doubting* ($p = .052$). *Self-doubting* was significantly higher than *Self-appreciating* ($p < .05$).. Significant group differences were also found for anxiety ($p < .001$), with *Self-dissonant* being significantly higher than *Self-appreciating* ($p < .001$) but not *Self-doubting*.

Figure 5 *Mean estimates of self-esteem and subjective well-being by class*



Note. Significant group differences were found for self-esteem ($p < .001$), with *Self-dissonant* being significantly lower than *Self-doubting* ($p < .001$), which was lower than *Self-appreciating* ($p < .05$). Significant group differences were also found for subjective well-being ($p < .05$), with *Self-dissonant* being significantly lower than *Self-appreciating* ($p < .01$) but not *Self-doubting*.

Figure 6 *Depression (PHQ9) mean scores of each class by region*

