

Perceived importance of childbearing and attitudes towards assisted reproductive technologies among Chinese lesbians in Hong Kong: implications for psychological well-being

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Title: Perceived importance of childbearing and attitudes towards assisted reproductive technologies among Chinese lesbians in Hong Kong: implications for psychological well-being

Abstract

Objective: To assess the perceived importance of childbearing and attitudes towards assisted reproductive technologies (ART) among Chinese lesbians and their impact on their psychological well-being.

Design: Survey-based study using a 39-item questionnaire.

Setting: Online.

Participant(s): 438 Chinese lesbians between the ages of 18 and 35.

Intervention(s): None.

Main Outcome Measure(s): Perceived importance of childbearing; attitudes towards ART; and levels of anxiety and depression.

Result(s): Compared to heterosexual childless women, Chinese lesbians in our study thought childbearing was significantly less important (3.30 versus 6.00 on a 1-10 scale, $t = 14.6$). Perceived childbearing importance was also negatively associated with age ($r = -.23$), relationship length ($r = -.18$) and full-time employment ($F = 4.29$). The vast majority of respondents (92%) supported legalizing same-sex couples' access to ART, although less than half (41%) wanted to use it themselves to have children. Among those who thought childbearing was important to their parents or their partners, not wanting ART was associated with higher anxiety levels.

Conclusion(s): This is the first quantitative study of reproductive preferences among lesbians in Asia. The data suggest that Chinese lesbians in the study who perceived childbearing as important to their parents or to their partners but did not want to seek ART reported higher anxiety levels. This study helps raise health care professionals' awareness of Chinese lesbians' attitudes towards childbearing as well as calls for a better delivery system of fertility and mental health services to address the psychological burden of Chinese lesbians in relation to reproductive issues.

Key Words: Lesbian, childbearing, assisted reproductive technology, attitude, psychological well-being

INTRODUCTION

It is generally believed that parenthood plays a significant role in personal fulfilment (1, 2). Since the 1980s, more lesbian couples have been pursuing parenthood by means of ART in Western countries, such as the Netherlands, Sweden, Belgium, Canada, the U.K., and the U.S. (3-8). Despite emerging literature on the medical and psychological demands of their experiences, less attention has been paid to the reproductive concerns of lesbian women in Asia, where public opinions on homosexuality tend to be more negative.

Little is known about how the perceived importance of childbearing and attitudes towards ART affect the psychological well-being of lesbians, especially in places where they are aware of the existence of ART but are denied access to it. Bauermeister (9) found that among sexual minority men who lived in some states in the United States with discriminatory lesbian, gay, bisexual (LGB) policies (e.g., bans against same-sex marriage or joint same-sex adoptions), those who ascribed great importance to parenting aspirations reported greater psychological distress, particularly higher depressive symptoms.

As in many parts of Asia, homosexuality in Hong Kong, a semiautonomous Chinese city, remains stigmatized. Neither same-sex marriage nor civil partnership is legally recognized

(10, 11), and ART is restricted to infertile heterosexual married couples. The omission of Chinese lesbian populations from academic discussions about ART may oversimplify the picture for lesbian parenthood and the social and cultural factors involved.

As part of a larger mixed-method study addressing the childbearing aspirations and perceived obstacles faced by Chinese lesbians, this article focuses on three main outcome measures: perceived importance of childbearing, attitudes toward ART (including support for its legalization in Hong Kong and personal desire for its usage), and levels of anxiety and depression. It attempts to answer two questions: [1] What is the perceived importance of childbearing among Chinese lesbians, and how does it compare to that among their heterosexual counterparts in Hong Kong? [2] Given that ART, and thus childbearing, is currently out of reach for lesbians in Hong Kong, do the perceived importance of childbearing and attitudes toward ART have any implications for their psychological well-being, namely depression and anxiety level?

LITERATURE REVIEW

In the West, not only has donor insemination become commonly used among lesbian couples, newer forms of ART, such as ROPA (reception of oocytes from partner), allow both partners to participate in the creation of a child and to achieve shared biological motherhood (12, 13). Meanwhile, lesbians' transition to parenthood has become a focus of growing research interest (14–18). Compared with heterosexual couples who turn to ART, lesbian couples encounter special issues, such as whom to be the gestational mother; how to navigate parenthood within a heteronormative context; and how to negotiate with the known or unknown donor (14, 19, 20). Their paths to reproduction are more challenging and require careful planning (15, 21). This may explain why lesbians are less likely to become parents compared with their heterosexual counterparts, even in jurisdictions where there are few legal and social hurdles to non-heterosexual parenthood (22, 23). For example, the two most recent rounds of the National Survey of Family Growth in the United States found that fewer than 18% of lesbians were biological mothers compared with 67% of heterosexual women and 54% of bisexual women (22).

The use of ART impacts on both lesbian and heterosexual couples' psychological well-being. It may affect the psychological well-being, sexual satisfaction, and relationship quality among involuntarily childless couples as family-building using ART is considered a deviation from traditional family formation (24–26). For lesbians in particular, anxiety is a significant index of psychological well-being in their transition to parenthood by means of ART (27, 28). Their anxiety is associated with contextual factors at the macro level, namely legal recognition of parental status and neighborhood climate and safety (28).

Meanwhile, the childbearing aspirations and concerns of Chinese lesbians are underexplored. In China, the Confucian emphasis on patrilineage, one of the cornerstones of traditional Chinese culture, means that parenthood is considered an essential life goal, whereas homosexuality poses a threat to the conventional family ideal. Most Chinese men and women are anxious about the social stigma associated with infertility (29, 30). Meanwhile, Hong Kong's fertility rate has seen a steep decline, largely due to increased educational and employment opportunities for women (29, 30). In the past three decades, the fertility rates among heterosexual females in the 20- to 24- and 25- to 29-year age groups have dropped by 76% and 58%, respectively. In line with the global trend of delayed childbearing (31), the median age of women at first childbirth in Hong Kong had risen steadily to 31.3 years in

2014, compared with 25.1 years in 1981 and 29.4 years in 2001 (32). Although a growing number of heterosexual couples decide to delay childbearing in Hong Kong, how do lesbians, who are deprived of reproductive rights, think about reproduction? More important, how would their belief concerning childbearing influence their psychological well-being?

While past research on fertility attitudes has predominantly focused on heterosexual couples (29, 33, 34), this study was designed to answer these questions about Chinese lesbians' attitudes toward childbearing. Given the persistent hostility to homosexuality and the unavailability of fertility treatment for lesbians in Chinese society, which values patrilineage, we hypothesized that [1] Chinese lesbians would perceive childbearing as less important compared with heterosexual women; [2] the perceived importance of childbearing would be negatively associated with psychological well-being; and [3] unwillingness to seek ART would be associated with lower levels of psychological well-being.

MATERIALS AND METHODS

Sample Recruitment

Respondents were recruited through local lesbian, gay, bisexual, and transgender (LGBT) organizations and a university in Hong Kong. E-mails were sent to five local LGBT organizations that then forwarded the details of the online survey to their members. The mail delivery system of the university was also used to reach all students, staff, and alumni from different faculties (27,933 students and 10,965 staff in the 2014/2015 academic year). The content of the e-mail provided a clear description of the research and a hyperlink to the online survey website where respondents completed an informed consent form and the questionnaire.

Hong Kong female permanent residents aged between 18 and 35 years, who identified themselves as lesbians and were able to read and speak Chinese, were eligible for the study. We did not include respondents who were not ethnically Chinese to avoid potential confounding differences in cultural background. Due to the widely shared knowledge indicating that the decline in fertility generally accelerates after the age of 35 years (33, 35), we included in our analysis only young lesbians ≤ 35 years old who might be inclined to contemplate and make decisions about childbearing.

Between December 2014 and March 2015 a total of 438 self-identified lesbians completed the online questionnaire. As an incentive, respondents who completed the online survey were entered into a lucky draw to win one of four gift vouchers (worth HK\$500 [US\$64] each). The study was approved by the research ethics committee at the University of Hong Kong.

Measures

Before being finalized, the survey was piloted with Chinese lesbians of various ages and education backgrounds in Hong Kong. Items were reviewed by two researchers who specialize in LGBT studies and reproductive health, respectively. The questionnaire was anonymous and contained 39 questions in the following domains:

1. Demographic data: Respondents were requested to state their age, the highest level of education attained, occupation, relationship status, and duration of their current same-sex relationship.
2. Perceived importance of childbearing and desire to have children: Attitudes toward childbearing were assessed by the Childbearing Importance Index, which required respondents to rate how important childbearing was from 1 (very unimportant) to 10 (very important) to themselves, to their partner, to their own same-sex relationship, and to their family. This measure was developed by the second author of this project and has been used in different studies (29, 36, 37). In addition, respondents were requested to indicate whether they would like to have their own children if they were given a chance.
3. Attitudes toward ART: Respondents were asked their views whether Hong Kong law should allow same-sex couples access to ART. To facilitate a more concrete understanding of the terms “ART,” options including “egg donation,” “sperm donation,” and “embryo donation” were given as examples in the questionnaire. Respondents were also asked to state whether they would like to seek ART to have children if the technology was accessible to them. An affirmative response to this question was followed by three questions about behavioral intention in the event of ART utilization. Respondents were asked to rate their preference for the child's gestational mother and genetic mother: “myself,” “my partner,” “both” (if more than one pregnancy experience), and “third-party.” Finally, respondents were asked about their willingness to use donor sperm from either a known or unknown donor.
4. Anxiety and depression: Respondents were asked to complete the Hospital Anxiety and Depression Scale by rating the presence and the severity of anxiety and depression states in the preceding week using a 4-point Likert scale, ranging from 0 (absence of symptoms) to 3 (severe symptoms). This 14-item scale developed by Zigmond and Snaith (38) has been widely used across culturally diverse groups, including Chinese populations (39–41). Satisfactory reliability and validity of the Chinese version of the Hospital Anxiety and Depression Scale have been reported in several studies (42, 43).
5. Self-esteem: As a control variable, the Rosenberg Self-Esteem Scale (44) was used to measure respondents' self-esteem. This is one of the most frequently used measures for assessing self-esteem and has been translated into many languages. Each item was rated on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Both the reliability and the validity of the scale have been demonstrated by numerous studies on Chinese populations (45, 46). This study adopted a Chinese version provided by Leung and Wong (47), which showed satisfactory psychometric properties.

Statistical Analysis

The SPSS software was used for statistical analysis. Different aspects of perceived importance of childbearing (to self, partner, same-sex relationship, and family) were compared using paired-sample *t* test. To investigate whether they had any demographic associations, analysis of variance (ANOVA) and correlation tests were conducted. Comparison with a separate heterosexual sample (details later) was carried out by two-sample *t* tests. In addition, to test the effect of perceived importance of childbearing and desire to use ART on psychological well-being, linear regression models were used. *P* values <.05 were considered to be statistically significant.

RESULTS

Respondent Characteristics

The demographic data of lesbian respondents are shown in [Table 1](#). Respondents ranged in age from 18–35 years, with a mean age of 24.7 years (SD 4.6). Respondents were well-educated, with about 83% of respondents undergoing or having completed university studies. About half (54%) of respondents were in full-time employment and about a third (36%) were full-time students. About half (55%) of respondents ($n = 242$) were currently in a relationship, whereas about 5% ($n = 20$) were engaged to their same-sex partner and 1% ($n = 5$) were married to their same-sex partner. For respondents who had a same-sex partner ($n = 267$), the mean length of the relationship was 31.2 months (SD 27.9), ranging between 1 month and 11 years.

Perceived Importance of Childbearing

The perceived importance of childbearing among respondents is shown in [Table 2](#). Overall, lesbian respondents did not think childbearing was important either to themselves, their family, or their partner (mean score, 2.68–4.61 out of 10). Paired- t tests show that the perceived importance of childbearing was higher for family ($t = 9.35$) and lower for partner and relationship ($t = -2.48$ and -7.04) compared with themselves (all $P < .05$).

Correlation analyses and ANOVAs were conducted to identify any association between perceived importance of childbearing and demographic characteristics. An aggregate score was created by averaging the four items (Cronbach's $\alpha = 0.80$). Age and length of duration of relationship were weakly associated with perceived importance of childbearing ($r = -0.23$ and -0.18 , respectively; $P < .01$). Perceived importance of childbearing was highest among full-time students (4.10) and lowest among full-time workers (3.07; $F = 4.29$, $P < .01$), whereas no significant effect was found for education level.

For further analysis, we compared the current data and the dataset from a previous study of heterosexual women in Hong Kong ([29](#)). This study conducted by Chan and her team in 2015 focused on fertility awareness among university students. It used a similar recruitment strategy (by email through the mail delivery system of a university) and data collection method (online questionnaire). We reanalyzed the original dataset by selecting respondents who were female, childless, and aged between 18 and 35 years. In the end, responses from 440 heterosexual female respondents were used (mean age, 25.4 years) ([Table 1](#)). Compared with the lesbian respondents in this current study, these heterosexual respondents were older ($P < .05$), better educated, and comprised of a larger proportion of students (48%) and single individuals (49%) ($P < .01$).

Among other items, the heterosexual respondents answered two questions present in the current study: [1] the perceived importance of childbearing to themselves (on the identical 1–10 scale) and [2] a yes-no question of whether they would like to have children. Their attitudes toward childbearing are also shown in [Table 2](#). Two-sample t tests showed that lesbian respondents perceived childbearing as significantly less important (3.30 vs. 6.00, $t = 14.6$, $P < .0001$). Similarly, χ^2 test indicated that a smaller proportion of lesbian respondents wanted to have children ($\chi^2 = 80.0$, $P < .0001$). Group differences remained significant ($P < .0001$ for both perceived importance of childbearing and desire to have own child) in

additional ANOVA tests with age, education, relationship status, and occupation entered as covariates.

Attitudes toward ART

Table 3 presents our lesbian respondents' attitudes toward ART. An overwhelming majority (92%) of respondents said ART should be legalized for same-sex couples. However, only half of them (50%) wanted to have their own child, and still fewer respondents (41%) would seek ART if given the chance. More respondents preferred to be the gestational mother (31%) and to provide their eggs (39%); more than half (58%) reported wanting to know the identity of a sperm donor if used.

Effect of Perceived Importance of Childbearing and Desire to Use ART on Psychological Well-Being

To investigate whether the perceived importance of childbearing and attitudes toward ART had implications on lesbian respondents' psychological well-being, different regression models were tested on Hospital Anxiety and Depression Scale scores (Table 4). Respondents rated the perceived importance of childbearing to self, partner, and family. Because we wanted to investigate the effect of partner and family separately, we only used single respondents ($n = 156$) and respondents who had a partner ($n = 249$) and ran new regression models. In all regression models, self-esteem was entered as a control variable as it is known to be highly correlated with depression and anxiety (48), whereas, theoretically, not related to perceived importance of childbearing and desire to seek ART. In our current study, self-esteem was highly correlated with anxiety and depression ($r = -0.551$ and -0.650 , $P < .0001$), but with neither perceived importance of childbearing nor willingness to seek ART. Controlling for self-esteem eliminated a potential source of variation unrelated to our hypotheses, especially given the fact that self-esteem tends to vary in lesbian populations based on their past life experience (e.g., coming out, discrimination, self-doubt) (49, 50).

Depression did not show any significant associations with the three measures of perceived importance of childbearing and attitudes toward ART. However, significant associations were found with anxiety. Anxiety had a weak positive correlation with perceived importance of childbearing to partner and to family, respectively ($r = 0.121$ and 0.132 , $P < .05$). Meanwhile, it did not correlate with perceived importance of childbearing to self. In addition, willingness to seek ART was also associated with higher anxiety levels. Interaction effects between perceived importance of childbearing and attitudes toward ART were found. Among those who were not willing to seek ART, anxiety levels were positively associated with the perceived importance of childbearing to family ($b = 0.166$ for all respondents in Model 1, $b = 0.286$ for single respondents in Model 2, both $P < .05$) and to partner ($b = 0.381$, $P < .05$, for respondents who had a partner in Model 4). However, among those who were willing to seek ART, the relationship reversed (interaction effect $= -0.427$ in Model 1, -0.693 in Model 2, both $P < .001$) or disappeared (interaction effect $= -0.383$, $P = .068$ in Model 4). Perceived importance of childbearing to self, on the other hand, had neither significant main effect nor interaction effect with willingness to seek ART.

DISCUSSION

This is the first study in Asia to examine lesbians' desire for and perceived importance of childbearing, their attitudes toward ART, and the implications of these beliefs on their

psychological well-being. Our findings are helpful for health care professionals to address the psychological burden of Chinese lesbians in relation to reproductive issues.

Lower Perceived Importance of Childbearing and Childbearing Desire Compared with Heterosexuals

Our first hypothesis was supported by our findings. We found that Chinese lesbians were less likely than their heterosexual counterparts to consider childbearing important and to report childbearing desire. About half (50%) of the respondents in this study expressed their desire to have their own children, compared with 79.1% of the heterosexual female sample. These comparatively smaller figures are striking and worth further research, given that the heterosexual female sample was comprised of more single and well-educated individuals, who tended to postpone pregnancy or consider childbearing less important (34). Meanwhile, our finding is consistent with existing research that shows lesbians tend to display lower desire to become parents (8, 51). In Italy, for instance, Baiocco and Laghi (51) found that 60.7% of childless lesbians aged 18–35 years reported that they would like to have children, whereas 89.8% of their heterosexual counterparts reported parenting desire.

That lesbian respondents were not as keen as their heterosexual counterparts on having children is not surprising given that there is no legal framework for homosexual parenthood in Hong Kong. Furthermore, even if such a framework were to exist, the perceived negative costs of “being outed” by becoming parents are considered high among lesbians in Chinese society (52). Nonetheless, the current findings are in line with previous research showing that a sizeable lesbian population does want to have children (53); many Chinese lesbians in the current study embraced hopes of becoming parents someday, contrary to the stereotype that portrays LGB individuals as uninterested in parenthood (54, 55).

Discrepancy between High Support for and Low Interest in Access to ART

In terms of respondents' attitudes toward ART, most (92%) said that ART should be legalized for same-sex couples in Hong Kong, but only about half (50%) of the respondents wanted to have their own children, and still fewer (41%) would seek ART if they were given the chance. The discrepancy between a high level of support for access to ART and low personal interest in ART may be explained by the fact that respondents are not likely to be familiar with actual ART procedures. Unlike infertile couples who seek medical help at specialized clinics, lesbians have few channels or incentives to learn about the application of this technology, which is completely inaccessible to lesbians in Hong Kong. Although the lack of practical guidelines on the usage of ART may account for Chinese lesbians' low motivation for seeking ART, this factor requires further investigation. More research is needed to understand the reasons behind Chinese lesbians' low interest in using ART.

In addition, because lesbians in Hong Kong are ineligible for ART services in the city, the costs of “reproductive tourism” in jurisdictions where ART is accessible to lesbians, such as Europe and North America (56), may hinder equal access to ART among lesbians of different classes regardless of their interest in using ART. In the United States, access to IVF treatment tends to be limited to white, older, middle- to upper-income people (57). Paradoxically, our study showed that lesbians who were older, employed full-time, and engaged in a relationship for a longer period were less likely to consider childbearing important. This finding probably pointed us to another possible explanation for Chinese lesbians' support for legalization of ART, but low interest in using ART themselves.

Such a discrepancy may relate to what Ehrensaft (58) terms reproductive technophobia, which derives from not only the fear of public hostility toward lesbian parenthood, but also lesbians' internalized shame and guilt about the use of alternative means of conception. There is a possibility that the older a lesbian is and the longer she stays in a same-sex relationship, the greater exposure to anti-gay messages she may have in Chinese society, resulting in internalized shame and guilt that lower her perceived importance of child-bearing. Yet, the discrepancy between Chinese lesbians' support for legalization of ART and their low interest in using ART warrants further research so that specific moderating or mediating factors can be identified.

Anxiety among Those Who Reject ART but Find Childbearing Important to Family or Partner

As shown by the main effects of the regression models, willingness to seek ART was associated with higher anxiety levels. This finding, coupled with lesbian respondents' low interest in using ART, highlights the need for further research into Chinese lesbians' worries about the prospect of using ART. On the other hand, we found that among those who did not want to seek ART, a high level of anxiety was associated with the belief that childbearing was important to their significant others (family for single respondents, partner for respondents who were in a relationship). These interaction effects partly supported our third hypothesis. Surprisingly, concerning the perceived importance of childbearing to respondents, we found neither such an interaction effect nor its association with anxiety or depression. In this regard, our second hypothesis was partly supported, because only the perceived importance of childbearing to partner and to family, but not that to respondents themselves, was positively associated with anxiety. The results are consistent with the deep-rooted emphasis on collectivism in Chinese society where the welfare and interests of the group may take priority over those of individuals (59). In particular, with a greater pressure for filial piety, which serves as a Chinese norm for younger people to care and respect their older family members (60), lesbians in Hong Kong tend to view their unwillingness to conceive children as a potential shame to their family who highly value continuity of the lineage (61). The conflict between others' expectations and one's own fertility plan may be the source of anxiety. Although unfulfilled childbearing desires may be a risk factor for depression (8, 62), our findings showed that for lesbians who did not intend to pursue ART, their anxiety was intensified by their perceived expectations from significant others concerning childbearing.

Study Limitations

Some limitations in our study deserve mention. First, a cross-sectional design was adopted, limiting the ability to make causal arguments regarding the observed relationships. Second, it is unclear to what extent the present results could be generalized to the lesbian population in Hong Kong, as a snowball sampling method was adopted. Owing to a long history of discrimination against LGBT people in Chinese society, the targeted population was largely hidden, making it very difficult to obtain a representative sample as has been possible in Western countries. It is noteworthy that there has been neither census data identifying the Chinese LGBT population nor research based on a random sample of LGBT individuals in China. That said, we regarded the 438 lesbians in our study as part of an emerging group of sexual minority individuals who were willing to share their opinions about their personal lives and in hope for social change and institutional support in relation to reproductive health.

Future Research Directions

To fully capture the complexity of reproductive issues experienced by Chinese lesbians, we have conducted semistructured interviews to explore their conception of family formation, allowing more discussions concerning what it means to be a lesbian mother, processes of coming out as a lesbian, and the implications of seeking ART abroad, carrying a baby, and dealing with a known or unknown donor. More quantitative and qualitative research is needed to provide insights into the social determinants of reproductive health and psychological well-being of Asian lesbians of reproductive age. In particular, researchers should pay attention to Asian lesbians' perceived difficulties in using ART and achieving parenthood to inform public policy on access to ART. This research also points to the need for future research into the comparison between Asian and Western lesbian populations with the aim of facilitating cross-cultural dialogues about lesbian reproductive health.

In conclusion, this research signifies a major step forward in an unexplored territory of the literature, namely lesbians' perceived importance of childbearing, their attitudes toward ART, and the potential implications of these for psychological well-being in a Chinese context. Our findings suggest that Chinese lesbians in the study were less likely than their heterosexual counterparts to consider childbearing important and to report childbearing desire. The discrepancy between lesbians' high support for and low personal interest in access to ART was also found. More importantly, among Chinese lesbians who were not willing to seek ART, anxiety levels were positively associated with the perceived importance of childbearing to their parents or to their partners. This study underlines the need for further research into Chinese lesbians' reproductive health as well as sensitizes health care professionals to Chinese lesbians' concerns about family planning, particularly those pertaining to their perceptions of their parents' and partners' expectations concerning childbearing.

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