

The Influence of Attitudes toward Sexuality Education and Knowledge on Preschool Education Majors' Intentions to Conduct Sexuality Education in China

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ABSTRACT

This study investigated whether *attitude toward sexuality education* and *sexual knowledge* predict Chinese preschool education majors' *intention* to provide sexuality education for young children. Participants were 308 undergraduates who completed validated measures of attitude, knowledge, and behavioral intention. Most (81.8%) expressed willingness to provide sexuality education. Spearman correlations showed that both predictors were positively related to each other and negatively related to intention scores. Multinomial logistic regression indicated that more positive attitudes ($OR = 0.95, p = .022$) and higher knowledge ($OR = 0.87, p = .028$) significantly predicted greater willingness, with attitude showing a stronger effect. Findings support the *Theory of Planned Behavior* and *Knowledge-Attitude-Behavior* model, highlighting the need to enhance both attitudes and knowledge in preschool teacher training programs.

KEYWORDS

Sexuality education, attitude; Knowledge; Behavioral intention; Preschool education majors; China

1 Introduction

Sexuality education plays a vital role in shaping children's healthy development and socialization, especially during early childhood (Goldfarb & Lieberman, 2021; Kantor et al., 2017; UNESCO, 2018). Sexuality education refers to the process of providing knowledge, attitudes, and skills related to sex, gender, relationships, and reproductive health (UNESCO, 2018). Effective sexuality education has been shown to improve children's self-protection awareness, promote respect for diversity, and reduce the risks of sexual abuse or risky behaviors (Goldfarb & Lieberman, 2021; Kantor et al., 2017; Kim et al., 2019; Mark & Wu, 2020).

The effectiveness of sexuality education in early childhood is highly dependent on the willingness and preparedness of teachers to deliver such content (Cheung et al., 2018; Shibuya et al., 2019). In this study, *intention to conduct sexuality education* refers to preschool education majors' self-reported willingness to provide sexuality education for young children in their future professional practice. For preschool education majors, their intention to conduct sexuality education is crucial, as it directly influences whether children can receive appropriate sexuality education during their formative years (Cheung et al., 2018; Shibuya et al., 2019).

The theory of planned behavior and the knowledge-attitude-behavior model suggest that individuals' *attitude toward sexuality education* and *sexual knowledge* significantly influence their behavioral intentions (Ajzen, 1991; Lin et al., 2015; Wang et al., 2017). However, there is a lack of empirical research examining whether preschool education majors' attitude toward sexuality education and sexual knowledge can significantly predict their intention to conduct sexuality education, especially in the Chinese context (Liu et al., 2020; Zhang & Yuan, 2018). Therefore, this study expands the current literature by investigating whether attitude toward sexuality education and sexual knowledge among Chinese preschool education majors can significantly predict their intentions to conduct sexuality education for young children.

2 Literature review

2.1 Intention of sexuality education behavior among preschool education majors

Previous studies have indicated that teachers' willingness to deliver sexuality education is a key factor influencing whether and how sexuality education is implemented in early childhood settings (Cheung et al., 2018; Costello et al., 2018; Shibuya et al., 2019). Intention to conduct sexuality education is generally defined as the subjective probability that an individual will engage in sexuality education practices in the future (Ajzen, 1991). For preschool education majors, this

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intention is not only affected by personal experiences and values but also by social norms and professional requirements (Costello et al., 2018; Lin et al., 2015). Research in Western contexts suggests that teachers' intention to conduct sexuality education is often hindered by lack of training, cultural taboos, and perceived parental resistance (Lafontan et al., 2019; Sidebottom et al., 2018). However, there is still limited empirical research on Chinese preschool education majors' intention to implement sexuality education and how this intention may be shaped by knowledge and attitudes (Liu et al., 2020; Zhang & Yuan, 2018).

2.2 Influence of attitude toward sexuality education on the intention to conduct sexuality education

Attitude toward sexuality education refers to individuals' beliefs, values, and feelings toward sexuality education and its necessity in childhood (Ajzen, 1991; Lin et al., 2015). According to the theory of planned behavior, attitude is a significant predictor of behavioral intention (Ajzen, 1991). A positive attitude toward sexuality education has been shown to increase teachers' likelihood to engage in sexuality education practices (Lin et al., 2015; Maasoumi et al., 2017; Wang et al., 2017). Studies in China also indicate that supportive attitudes among preservice teachers are associated with higher intention and readiness to provide sexuality education (Liu et al., 2020; Zhang & Yuan, 2018). However, cultural conservatism and misconceptions about childhood sexuality may still act as barriers (Lafontan et al., 2019; Sidebottom et al., 2018).

2.3 Influence of sexual knowledge on the intention to conduct sexuality education

Sexual knowledge encompasses factual information about sexual development, sexual health, and appropriate educational strategies for different age groups (Wang et al., 2017). The knowledge-attitude-behavior model proposes that knowledge can indirectly influence behavior through its impact on attitudes (Wang et al., 2017). Empirical research has demonstrated that higher sexual knowledge among teachers correlates with greater confidence and willingness to implement sexuality education (Kirby et al., 2006; Maasoumi et al., 2017; Mark & Wu, 2020). However, there is a lack of systematic research examining this relationship among Chinese preschool education majors, especially regarding whether sexual knowledge alone can significantly predict intention or whether its influence is mediated by attitudes (Liu et al., 2020; Zhang & Yuan, 2018).

2.4 The current study

This study aims to examine the contribution of attitude toward sexuality education and sexual knowledge to the intention to conduct sexuality education among Chinese preschool education majors. This study addresses two main research questions. First, whether attitude toward sexuality education can significantly predict the intention to conduct sexuality education. It is hypothesized that a more positive attitude toward sexuality education will predict a higher intention to conduct sexuality education (Liu et al., 2020; Zhang & Yuan, 2018). Second, whether sexual knowledge can significantly predict the intention to conduct sexuality education. It is hypothesized that greater sexual knowledge will predict a higher intention to conduct sexuality education (Liu et al., 2020; Zhang & Yuan, 2018).

3 Method

3.1 Participants

A total of 437 undergraduate students majoring in preschool education were recruited from a university in southern China. Among them, 431 were female (98.6%) and 6 were male (1.4%), with a mean age of $M = 19.53$ years ($SD = 0.85$, range: 18–23). All participants provided informed consent prior to completing the anonymous online questionnaire. Inclusion criteria were: (a) currently enrolled as a full-time undergraduate in the preschool education major; (b) voluntary participation; and (c) completion of all required questionnaire items. Participants' demographic information, including gender and age, was collected to provide context for the sample.

3.2 Measure

(1) Attitudes toward sex education. attitudes toward sex education were measured using the attitude Toward Sex Education Questionnaire (Yang & Fang, 2020). The scale consists of 23 items (e.g., "Sex education is necessary for children," "It is important for teachers to be comfortable discussing sexual topics with children"), each rated on a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*). Higher scores reflect more positive attitudes toward sex education. In this study, Cronbach's α was .70.

(2) Sexual Knowledge. Sexual knowledge was assessed using the Sexual Knowledge Scale adapted from the questionnaire developed by Yeh and Chen (2012). The scale consists of 27 true/false items covering three domains: (a) reproductive physiology (e.g., "Menstrual blood occurs because the endometrium sheds when no fertilization takes place after ovulation"), (b) contraception and pregnancy (e.g., "Condoms are the most convenient contraceptive method and

can prevent sexually transmitted infections”), and(c) awareness of sexual harassment and sexual assault (e.g., “Telling me obscene jokes is a form of verbal sexual harassment”). The total score ranges from 0 to 27, with higher scores indicating greater sexual knowledge.

(3) Behavioral Intention to Provide Sex Education. Behavioral intention was assessed with a single item: “Are you willing to provide sex education to young children?” (1 = willing, 2 = neutral, 3 = unwilling). Although multi-item scales are generally preferred for reliability, meta-analytic evidence indicates that single-item intention measures are commonly and validly used, especially in TPB research where specificity of the behavior is clear (Armitage & Conner, 2001). Additionally, recognized TPB measurement manuals acknowledge that single-item formats can adequately capture behavioral intention when properly framed (Francis et al., 2004).

3.3 Procedure

All procedures in this study were approved by the university’s Institutional Review Board. Data collection was conducted at a public university in southern China. Participants were recruited through classroom announcements and provided informed consent prior to participation. The survey was administered in paper-and-pencil format during regular class sessions. Participation was voluntary, and all responses were anonymous and confidential.

3.4 Data analysis

Descriptive statistics and reliability analyses were calculated for all study variables. Pearson correlations were used to assess relationships among attitude toward sexuality education, sexual knowledge, and behavioral intention. Multinomial logistic regression was conducted to examine whether attitude toward sexuality education and sexual knowledge predicted students’ willingness to provide sex education for preschoolers. Statistical significance was set at $p < .05$.

4 Results

4.1 Descriptive statistics and reliability

Descriptive statistics for the key variables are shown in Table 1. The mean score for attitude toward sexuality education was 65.76 ($SD = 7.25$, range = 37–84), and the mean score for sexual knowledge was 23.70 ($SD = 2.29$, range = 11–27). For the behavioral intention item (“Willing to conduct sex education”), the coded mean was 1.19 ($SD = 0.40$; 1 = willing, 2 = neutral, 3 = unwilling). In this study, 81.8% ($n = 252$) responded “willing,” 17.9% ($n = 55$) “neutral,” and 0.3% ($n = 1$) “unwilling.”

Table 1 Descriptive statistics among main variables($n = 308$)

Variable	Mean (M)	SD	Range
Attitude toward sexuality education	65.76	7.25	37–84
Sexual knowledge	23.7	2.29	11–27
Behavioral intention (coded)	1.19	0.4	1–3

4.2 Correlations among main variables

Spearman’s rank-order correlation was conducted to examine the associations among sexual knowledge, attitude toward sexuality education, and behavioral intention to provide sex education (Table 2). Results indicated a significant positive correlation between sexual knowledge and attitude toward sexuality education ($\rho = 0.219$, $p < .001$). Sexual knowledge was negatively correlated with behavioral intention ($\rho = -0.130$, $p = .023$), suggesting that participants with greater sexual knowledge were more willing to provide sexuality education to young children. Similarly, attitude toward sexuality education was negatively correlated with behavioral intention ($\rho = -0.167$, $p = .003$), indicating that more positive attitudes were associated with greater willingness to provide sexuality education.

Table 2 Spearman correlations among main variables ($n = 308$)

Variable	1	2	3
1. Sexual knowledge	—		
2. Attitude toward sexuality education	0.219**	—	
3. Behavioral intention ¹	-0.130*	-0.167**	—

Behavioral intention coded as 1 = willing, 2 = neutral, 3 = unwilling. Lower scores indicate greater willingness. * $p < .05$, ** $p < .01$.

4.3 Multinomial logistic regression predicting intention to provide sex education

To determine whether attitude toward sexuality education and sexual knowledge significantly predicted participants’ intention to provide sexuality education, a multinomial logistic regression analysis was conducted, with “willing” as the reference category. Results indicated that both predictors were statistically significant. Specifically, higher scores on

attitude toward sexuality education ($B = -0.050$, $SE = 0.022$, $OR = 0.95$, 95% CI [0.91, 0.99], $p = .022$) and sexual knowledge ($B = -0.138$, $SE = 0.063$, $OR = 0.87$, 95% CI [0.77, 0.98], $p = .028$) were associated with a greater likelihood of being willing to provide sexuality education to young children.

Based on standardized coefficients, attitude toward sexuality education ($\beta = -0.21$) had a slightly larger predictive effect than sexual knowledge ($\beta = -0.15$), suggesting that attitude may play a more prominent role in shaping behavioral intention.

Table 3 Multinomial logistic regression predicting intention to provide sex education (reference group = willing)

Predictor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i> for <i>OR</i>	<i>p</i>
Attitude toward sexuality education	−0.050	0.022	0.95	[0.91, 0.99]	0.022
Sexual knowledge	−0.138	0.063	0.87	[0.77, 0.98]	0.028

5 Discussion

This study aimed to examine whether attitude toward sexuality education and sexual knowledge predict preschool education majors' intention to provide sexuality education to young children in China. Three key findings emerged. First, both attitude toward sexuality education and sexual knowledge significantly predicted behavioral intention. Second, attitude toward sexuality education showed a stronger effect than sexual knowledge. Third, most participants reported a high willingness to provide sexuality education, though some remained uncertain.

5.1 Contribution of attitude toward sexuality education on behavioral intention

The first key finding showed that attitude toward sexuality education significantly predicted the behavioral intention to conduct sex education. Specifically, individuals with more positive attitudes toward sexuality education were more likely to express willingness to provide such education to young children. This result aligns with the Theory of Planned Behavior, which emphasizes that behavioral intention is directly influenced by attitude. Our finding is consistent with previous studies conducted in teacher education contexts, supporting the notion that supportive attitudes are crucial in shaping future teaching behaviors related to sexuality education (Lin et al., 2015; Maasoumi et al., 2017; Wang et al., 2017).

5.2 Contribution of sexual knowledge on behavioral intention

The second major finding revealed that sexual knowledge was also a significant predictor of behavioral intention (Kirby et al., 2006; Maasoumi et al., 2017; Mark & Wu, 2020). Participants with greater factual understanding of sexual health and development were more likely to report willingness to implement sexuality education. This supports the Knowledge-Attitude-Behavior (K-A-B) model, which posits that knowledge may influence behavior both directly and indirectly via attitudes (Wang et al., 2017). Although the predictive power of knowledge was slightly lower than that of attitude, its significance highlights the importance of integrating comprehensive sexual health education in pre-service teacher training programs.

5.3 Correlation between knowledge and attitude

Finally, the study found a significant positive correlation between sexual knowledge and attitude toward sexuality education (Kirby et al., 2006; Wang et al., 2017). This suggests that greater knowledge is associated with more supportive attitudes, which may, in turn, enhance behavioral intention. These interrelationships provide further empirical support for the K-A-B framework and indicate that knowledge and attitudes are mutually reinforcing in preparing preservice teachers for delivering sexuality education.

5.4 Limitations, future directions, and implications

Despite the strengths of this study, several limitations should be noted. First, the sample was limited to a single university in southern China, which may limit the generalizability of the findings. Future research should include more diverse samples across regions, institutions, and cultural contexts to validate and expand the current findings.

Second, the behavioral intention to provide sex education was assessed using a single-item measure. Although this item provided useful insight into participants' willingness, using a more comprehensive multi-item scale in future studies could enhance measurement reliability and allow for a more nuanced understanding of intention.

Third, the cross-sectional nature of the study precludes causal inferences. While the findings are consistent with the Theory of Planned Behavior and the Knowledge-Attitude-Behavior model, longitudinal or experimental designs are needed to determine causal pathways between knowledge, attitudes, and intention.

Future research should also explore potential moderating or mediating variables such as gender norms, perceived parental attitudes, or teacher training experience, which may influence the relationship between knowledge, attitude, and behavior.

Practically, the findings have clear implications for teacher education. To increase the likelihood that future preschool educators will provide sex education, it is important to improve both their knowledge and attitudes. This suggests that sexuality education content should be explicitly integrated into preschool teacher training programs through coursework, workshops, and guided practice.

6 Conclusion

This study examined whether attitude toward sexuality education and sexual knowledge predict preschool education majors' intention to provide sexuality education in China. Based on data from 308 undergraduates in preschool education, both more positive attitudes and higher knowledge significantly predicted greater willingness to deliver such education. These findings support the Theory of Planned Behavior and the Knowledge-Attitude-Behavior model and highlight the importance of enhancing both knowledge and attitudes in preschool teacher training programs.

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