



# Genitalia-related nursing embarrassment and its associated factors among female nurses in mainland China: a nationwide cross-sectional study

Guoyi Yang<sup>1#</sup>, Huixin Liu<sup>2#</sup>, Jia Wang<sup>1</sup>, Zixian Geng<sup>1</sup>, Ling Wang<sup>3</sup>, Tao Xu<sup>1</sup>

<sup>1</sup>Urology Department, Peking University People's Hospital, Beijing, China; <sup>2</sup>Department of Clinical Epidemiology and Biostatistics, Peking University People's Hospital, Beijing, China; <sup>3</sup>Nursing Department, Peking University People's Hospital, Beijing, China

*Contributions:* (I) Conception and design: All authors; (II) Administrative support: L Wang, T Xu; (III) Provision of study materials or patients: All authors; (IV) Collection and assembly of data: G Yang, H Liu, J Wang, Z Geng; (V) Data analyses and interpretation: G Yang, H Liu, L Wang, T Xu; (VI) Manuscript writing: All authors; (VII) Final approval of manuscript: All authors.

<sup>#</sup>These authors contributed equally to this work.

*Correspondence to:* Tao Xu. Urology Department, Peking University People's Hospital, No. 11 Xizhimen South Street, Xicheng District, Beijing 100044, China. Email: xutao@pkuph.edu.cn; Ling Wang. Nursing Department, Peking University People's Hospital, No. 11 Xizhimen South Street, Xicheng District, Beijing 100044, China. Email: wanglingyaoyao@sina.com.

**Background:** Genital-related care is a common nursing procedure and may cause embarrassment for nurses. However, nurses' level of embarrassment and the factors associated with embarrassment have been scarcely studied. Therefore, a cross-sectional study was conducted to investigate genitalia-related care's embarrassment and its associated factors among Chinese female nurses.

**Methods:** Online questionnaires regarding the frequency of genitalia-related care and the embarrassment level were distributed to female nurses from the gynecology and urology departments between October and December 2019. Participants also completed the Chinese version of the professional identity scale for nurses and the Jefferson scale of empathy. Mantel-Haenszel chi-square and ordinal logistic regression were used to explore factors associated with the level of embarrassment.

**Results:** In total, 648 female nurses from 54 hospitals in 31 cities in China were recruited. Among these respondents, approximately 67% provided genitalia-related care at least three days per week, and about 70% of nurses felt slightly embarrassed to extremely embarrassed when providing genitalia-related care. Compared to nurses from gynecology departments, nurses from urology departments felt more embarrassed during genitalia-related care ( $P < 0.001$ ). Ordinal regression analysis showed that the odds of nurses from gynecology and urology departments with total empathy scores greater than 100 experiencing higher levels of embarrassment than nurses with total empathy scores less than 100 were 0.47 and 0.45, respectively. Nurses from gynecology departments with higher professional identity scores, higher education levels, more frequent genital-related care experienced less embarrassment, while nurses from the urology department with prior sexual experience experienced less embarrassment.

**Conclusions:** Feeling embarrassed during genitalia-related nursing was common among Chinese female nurses, especially those from urology departments. Embarrassment during genitalia-related nursing was related to professional identity, empathy, educational level, genitalia-related care frequency, and sexual history. These findings highlight the importance of professional identity, empathy, and education among nurses.

**Keywords:** Female nurses; genitalia-related care; medical embarrassment; empathy; professional identity

Submitted Jul 06, 2020. Accepted for publication Nov 09, 2020.

doi: 10.21037/atm-20-5154

View this article at: <http://dx.doi.org/10.21037/atm-20-5154>

## Introduction

Medical procedures that are intimate, such as colonoscopies and pelvic/prostate examinations, can cause discomfort and embarrassment for patients. Previous studies have reported that the embarrassment experienced during these situations can prevent patients from engaging in medical examinations (1,2).

Medical staff such as nurses also face this sensitive situation, especially when providing genitalia-related nursing, which are nursing procedures that necessitate exposure and/or physical contact with the external genitalia (perineum, penis, or orchis). Such care includes genital hygiene, urinary catheterization, meatal cleansing, genital wound care, pubic area shaving, and taking sexual histories on admission to the wards (3). Embarrassment, which is a negative emotion defined as feeling flustered because of poor performance (4), is also experienced by patients when their bodily privacy (5) is invaded.

Although many studies have focused on medical embarrassment and its influence on patients, few studies have examined embarrassment among female nurses. Existing studies on attitudes toward intimate care have mainly involved nursing students and male nurses. Crossan *et al.* (6) interviewed 166 nursing students in New Zealand to explore their attitudes about providing intimate care to patients of the opposite sex. The results showed that student nurses face many challenges when providing intimate care to patients. Meanwhile, a study by Turk *et al.* (7) involving 300 female nursing students found that many students had negative attitudes towards providing genital area-related care to male patients. Inoue and colleagues (8) used semi-structured, open-ended interviews to reveal that male nurses in Western Australia often experience negative feelings when providing intimate care for female patients.

In China, nursing is a female-dominated occupation. Nurses are susceptible to negative emotions such as shyness, embarrassment, and resistance when caring for male patients' bodily private parts (9). This may lower the quality of healthcare, cause nurse-patient disputes, and affect nurses' mental health. Therefore, it is crucial to investigate the embarrassment felt by female nurses when providing genitalia-related care.

A national cross-sectional study among Chinese female nurses was conducted to investigate the feeling of embarrassment when providing genitalia-related care and the factors associated with embarrassment. This article is presented following the STROBE reporting checklist (10) (available at <http://dx.doi.org/10.21037/atm-20-5154>).

## Methods

### *Study design, setting, and participants*

A national cross-sectional survey was conducted from October to December 2019 to evaluate the state of embarrassment among Chinese female nurses during genitalia-related care and the factors associated with the levels of embarrassment. Female nurses from gynecology and urology departments were recruited online via convenience sampling and invited to complete an online survey powered by [www.wjx.cn](http://www.wjx.cn), a platform providing services equivalent to Amazon Mechanical Turk. Registered female nurses who voluntarily participated were included in this study.

### *Data collection*

The online survey collected socio-demographic and job-related information including age, educational level, marital status, hospital of employment, department, years working, frequency of genitalia-related care per week, personal attitude towards genital contact, and level of embarrassment when providing genitalia-related care. The question, "How embarrassing assessed the latter is providing genitalia-related care?" The embarrassment level was rated from 1 to 5, with responses ranging from 1 being "extremely embarrassing" and 5 being "not embarrassing at all."

The online survey also included a professional identity scale and the Chinese version of the Jefferson scale of empathy. The professional identity scale (11) was used to measure a nurse's professional identity: the clear recognition of one's career goals, abilities, personal interests, and personal values (12). The scale consists of 30 items categorized into five dimensions: self-reflection, dealing with professional frustration, professional social skills, professional social support, and professional identity evaluation. The items were rated on a 5-point Likert scale, with 1 indicating that the item was "very inconsistent," 2 indicating that it was "inconsistent," 3 indicating that it was "sometimes consistent," 4 indicating that it was "consistent," and 5 indicating that it was "very consistent". The total score ranged from 30–150. Typically, 30–60 points indicated very low professional identity levels, 61–90 points indicated low levels of professional identity, 91–120 points indicated medium levels of professional identity and 121–150 points indicated high professional identity levels. Reliability and validity were determined to be satisfactory (Cronbach's  $\alpha = 0.938$ ,  $\chi^2/df = 1.85$ ). The scale's acceptable reliability has

been confirmed in previous studies (13).

The Chinese version of the Jefferson scale of empathy (14,15) was used to assess the nurse's level of empathy, that is, the ability to understand others (16). The scale contains 3 dimensions: taking perspective, compassionate care, and understanding of others' perspectives. The 20 items on the scale were rated on a Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree), with a total score of 7–140 points. A single item score  $\geq 3.5$  indicates a relatively ideal level, while total scores  $\leq 60$ , 61–99, and  $\geq 100$  indicate low, medium, and high empathy levels, respectively. The Chinese version scale had sound reliability and validity. The Cronbach's  $\alpha$  coefficient of the overall scale was 0.797, and the split-half reliability coefficient was 0.788. The overall scale's content validity index was between 0.2–1, suggesting good reliability and validity. The scale's acceptable reliability and validity in the Chinese context have been confirmed in a previous study (17,18).

### *Statistical analysis*

Categorical data were presented as numbers, and percentages and continuous data were presented as mean and standard deviation or median and interquartile range (IQR). The *t*-test or Mann-Whitney U test was used to compare continuous data, depending on the continuous data distribution. The Shapiro-Wilk test was used to examine the normality of the data. The Mantel-Haenszel chi-square test was used to compare the level of embarrassment and personal attitude towards genital contact between the nurses in the gynecology and the urology departments. Ordinal logistic regression was used to identify the factors associated with the level of embarrassment among nurses, with the dependent variable being the level of embarrassment and the independent variables being total professional identity score, total empathy score, age, working years, educational level, genital-related care frequency per week, and prior sexual experience. The independent variables were included based on the opinions of nursing specialists. SPSS 26.0 (SPSS Inc., Chicago, IL, USA) was used to conduct all statistical analyses. The P values in this study were two-tailed. Alpha was set at 0.05 for statistical significance.

### *Ethical statement*

All procedures performed in this study involving human participants were following the Declaration of Helsinki

(as revised in 2013). The Ethical Committee approved the study protocol of the Peking University People's Hospital (No. 2020PHB182-01). The online survey was anonymous. Participant consent was obtained during the online survey.

## **Results**

### *Participants' characteristics*

A total of 648 nurses (311 from gynecology departments and 337 from urology departments) from 54 hospitals in 31 cities were enrolled in this study. The majority of nurses (91.20%) were under 40 years old, 71.60% were married, and 78.55% had an undergraduate or higher degree. Approximately 67% of participants reported that they provided genitalia-related care at least 3 days per week. There were no differences in the age, working years, and nurses' educational level between these two departments. Nurses from the gynecology departments had higher genital-related care frequency and were more likely to be married or have had sexual intercourse (*Table 1*).

### *Embarrassment among female nurses*

About 70% of nurses felt a little embarrassed to extremely embarrassed when providing genitalia-related care. Compared to nurses from the gynecology departments, nurses from the urology departments experienced more embarrassment when providing genitalia-related care ( $P < 0.001$ ), but none felt extremely embarrassed when facing female patients. As for the attitude towards genital contact, 44.37% and 39.46% of nurses from the gynecology and urology departments, respectively, agreed that genital contact should only occur between a married couple (*Table 2*).

### *Factors associated with the level of embarrassment*

Ordinal logistic regression was used to identify the factors associated with embarrassment among nurses from the gynecology and urology departments. After adjusting for age and working years, the results showed that nurses from the gynecology departments with professional identity scores less than 90 had 0.53 times the odds of having a higher level of embarrassment than nurses with professional identity scores of 90 or less. Gynecology nurses with empathy scores of 100 or greater had 0.47 times the odds of having a higher level of embarrassment than nurses with empathy scores

**Table 1** Baseline characteristic of nurses enrolled in this study

Characteristic	Gynecology department (n=311), N (%)	Urology department (n=337), N (%)	P
Age			0.111
<25	47 (15.11)	70 (20.77)	
25–30	95 (30.55)	114 (33.83)	
31–40	139 (44.69)	126 (37.39)	
>40	30 (9.65)	27 (8.01)	
Working years			0.174
<2	30 (9.65)	35 (10.38)	
2–5	58 (18.65)	85 (25.22)	
6–10	116 (37.30)	106 (31.45)	
>10	107 (34.40)	111 (32.94)	
Educational level			0.199
≥BA*	60 (19.29)	79 (23.44)	
<BA	251 (80.71)	258 (76.56)	
Prior sexual experience			<0.001
Yes	266 (85.53)	251 (74.48)	
No	45 (14.47)	86 (25.52)	
Married			0.013
Yes	237 (76.21)	227 (67.36)	
No	74 (23.79)	110 (32.64)	
Genital-related care frequency (days per week)			0.001
<3	83 (26.69)	130 (38.58)	
≥3	228 (73.31)	207 (61.42)	

\*, Bachelor degree or above.

less than 100. A higher level of education (OR =0.53, 95% CI, 0.30–0.93) and higher frequency of genital-related care (OR =0.52, 95% CI, 0.32–0.85) were both associated with lower levels of embarrassment. Prior sexual experience was not associated with the level of embarrassment.

As for nurses from the urology departments, professional identity score was not associated with embarrassment, while nurses with a total empathy score of 100 or greater had 0.45 times the odds of having a higher level of embarrassment than nurses with empathy scores less than 100. Nurses who had no previous sexual experience had 1.75 times the odds of having a higher level of embarrassment than nurses with previous sexual experience (*Table 3*).

## Discussion

Genitalia-related care is a common nursing procedure in medical practice, especially for nurses in gynecology and urology departments. Our study demonstrated that 73.31% and 61.42% of nurses in gynecology and urology departments, respectively, provided genital-related care at least three times per week. Nurses experienced various levels of embarrassment while providing genital-related care. Nurses from gynecology departments experienced embarrassment despite being the same gender, while nurses from urology departments experienced embarrassment when caring for patients of a different gender. Our study

**Table 2** Embarrassment among nurses from two departments

Questions	Gynecology department (n=311), N (%)	Urology department (n=337), N (%)	P for trend
Embarrassment level when providing genitalia-related care			<0.001
Not a bit	162 (52.09)	36 (10.68)	
A little	81 (26.04)	82 (24.33)	
Moderately	62 (19.93)	121 (35.90)	
Very	6 (1.93)	48 (14.24)	
Extremely	0 (0.0)	50 (14.84)	
How much do you agree with “genital contact should only happen between a couple”			0.122
Extremely	92 (29.58)	72 (21.36)	
Very	46 (14.79)	61 (18.10)	
Moderately	60 (19.29)	75 (22.25)	
A little	51 (16.40)	52 (15.43)	
Not a bit	62 (19.93)	77 (22.85)	

showed that female nurses felt more embarrassed when providing genitalia-related care to male patients. None of the nurses from the gynecology departments felt extreme embarrassment when providing genital-related care, whereas about 15% of nurses from the urology departments felt extreme embarrassment. More than half of the gynecology department's nurses did not feel any embarrassment, while 10.68% of nurses from the urology departments felt some form of embarrassment. This was consistent with previous research showing that nursing the sexual health of patients of the opposite sex was more embarrassing (19,20). Sexuality issues and embarrassment surrounding intimate genital care are common, particularly between male patients and female nurses (21).

China's strong traditional conservative culture may explain this kind of embarrassment on sex. Traditionally, in China, one of the core “rites” in Confucianism is that physical contact between adults of different genders outside marriage is prohibited. Physical contact with any sexual implication, for example, exposure of or physical contact with the penis, is often regarded as the most private matter for Chinese individuals (22). The observation supports this that more than 60% of nurses in this study agreed moderately to extremely that genital contact should only occur between a married couple.

The factors associated with the level of embarrassment

were investigated. Nurses from gynecology departments who had higher professional identification scores and higher genital-related care frequency felt less embarrassment when providing genital-related care. Meanwhile, nurses from urology departments and those who had never had sexual intercourse tended to experience more embarrassment. This suggested that female nurses providing genital-related care to male patients may experience increased embarrassment.

Previous studies have shown that medical embarrassment is not unidimensional but has two distinct components: bodily embarrassment and unwanted intimacy during examinations (23,24). Nurses with a strong desire to help and a strong sense of responsibility could function effectively outside their comfort zone and address sexual issues with patients (5). These results provided preliminary evidence that professional identity and empathy were correlated with a nurse's ability to cope with medical embarrassment.

Empathy is one of the major factors influencing a nurse's attributes (25). Nurses with a high level of empathy may better understand a patient's situation (26). Enhancing the understanding of others' perspectives may be beneficial in modulating embarrassment.

This study also identified that female nurses with higher education levels felt less embarrassed when providing genital-related care. Nurses with higher education may have had more opportunities for sex education, leading to

**Table 3** Factors associated with the level of embarrassment among nurses in Gynecology Department and Urology Department

Variable	Gynecology Department*		Urology Department	
	OR (95% CI)	P	OR (95% CI)	P
Total professional identity score				
>90	0.53 (0.30–0.94)	0.030	0.73 (0.45–1.17)	0.192
≤90	1.0		1.0	
Total empathy score				
≥100	0.47 (0.30–0.76)	0.002	0.45 (0.29–0.69)	<0.001
<100	1.0		1.0	
Age				
≤25	1.0		1.0	
26–30	0.70 (0.23–2.16)	0.217	1.54 (0.73–3.23)	0.516
31–40	1.26 (0.35–4.50)	0.262	1.13 (0.41–3.11)	0.496
>40	0.95 (0.21–4.19)	0.977	1.76 (0.49–6.28)	0.432
Working years				
<2	1.0		1.0	
2–5	0.72 (0.22–2.41)	0.511	0.76 (0.33–1.76)	0.096
6–10	0.91 (0.22–3.73)	0.832	1.49 (0.53–4.16)	0.148
>10	0.82 (0.18–3.83)	0.907	1.28 (0.38–4.37)	0.628
Educational level				
≥BA <sup>#</sup>	0.53 (0.30–0.93)	0.027	1.16 (0.72–1.89)	0.540
<BA	1.0		1.0	
Genital-related care frequency (per week)				
≥3	0.52 (0.32–0.85)	0.009	1.13 (0.76–1.69)	0.551
<3	1.0		1.0	
Prior sexual experience				
No	0.99 (0.45–2.19)	0.987	1.75 (1.02–2.99)	0.040
Yes	1.0		1.0	

\*, there are no nurse feel extremely embarrassed among nurses in gynecology department, so the dependent variables of the ordinal logistic regression are a littler of embarrassment to extremely embarrassed. <sup>#</sup>, Bachelor degree or above.

a more positive attitude towards providing intimate care. Furthermore, coping with genitalia-related care situations requires nurses to possess certain skills and higher levels of experience. Their level of education generally influences these skills and experiences. Previous reports have suggested that student nurses require an effective curriculum to increase their ability and willingness to address a patient's sexual health (27). Therefore, additional courses

related to genital care, especially regarding coping with embarrassment, and encouragement from nursing managers to receive continuous training, are essential to reduce a nurse's embarrassment.

#### *Limitations and future research directions*

Several limitations of this study must be acknowledged.

First, female nurses included in this study were recruited using convenience sampling. Most participants were under 40 years of age and may indicate potential selection bias. Second, owing to the nature of the cross-sectional design, causal relationships could not be established. Third, the current research was descriptive and merely provided preliminary results of factors associated with medical embarrassment. Further research is needed to explore how culture, professional identity, and empathy influence the degree of medical embarrassment.

## Conclusions

Experiencing embarrassment during genitalia-related nursing was common in Chinese female nurses, especially when caring for male patients. Our findings demonstrated that this embarrassment was related to professional identity, empathy, educational level, frequency of genitalia-related care, and personal sexual history. These findings highlight the importance of professional identity, empathy, and education among nurses.

## Acknowledgments

The authors appreciate the efforts of the hospital administrators who facilitated the survey. We would also like to thank Editage ([www.editage.cn](http://www.editage.cn)) for English language editing.

*Funding:* This study was supported by the Peking University People's Hospital Research and Development Funds (RDM2018-09). The funding body played no part in the study design and conduct, analysis, and interpretation of the data.

## Footnote

*Reporting Checklist:* The authors have completed the STROBE (Strengthening the Reporting of Observational studies in Epidemiology) reporting checklist, available at <http://dx.doi.org/10.21037/atm-20-5154>

*Data Sharing Statement:* Available at <http://dx.doi.org/10.21037/atm-20-5154>

*Peer Review File:* Available at <http://dx.doi.org/10.21037/atm-20-5154>

*Conflicts of Interest:* All authors have completed the ICMJE

uniform disclosure form (available at <http://dx.doi.org/10.21037/atm-20-5154>). The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work and in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in this study involving human participants were in accordance with the Declaration of Helsinki (as revised in 2013). The study protocol was approved by the Ethical Committee of the Peking University People's Hospital (No. 2020PHB182-01). The online survey was anonymous. Participant consent was obtained during the online survey.

*Open Access Statement:* This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

## References

1. Teng FF, Mitchell SM, Sekikubo M, et al. Understanding the role of embarrassment in gynaecological screening: a qualitative study from the ASPIRE cervical cancer screening project in Uganda. *BMJ Open* 2014;4:e004783.
2. Reynolds LM, Bissett IP, Consedine NS. Emotional predictors of bowel screening: the avoidance-promoting role of fear, embarrassment, and disgust. *BMC Cancer* 2018;18:518.
3. Zang YL, Chung LY, Wong TK. A review of the psychosocial issues for nurses in male genitalia-related care. *J Clin Nurs* 2008;17:983-98.
4. Meerabeau L. The management of embarrassment and sexuality in health care. *J Adv Nurs* 1999;29:1507-13.
5. Saunamäki N, Engstrom M. Registered nurses' reflections on discussing sexuality with patients: responsibilities, doubts and fears. *J Clin Nurs* 2014;23:531-40.
6. Crossan M, Mathew TK. Exploring sensitive boundaries in nursing education: Attitudes of undergraduate student nurses providing intimate care to patients. *Nurse Educ Pract* 2013;13:317-22.
7. Turk YZ, Turker T, Acikel C, et al. Sexual Perception:

- An overlooked psychological barrier to nursing. *Pakistan Journal of Medical Sciences* 2012;28:179-82.
8. Inoue M, Chapman R, Wynaden D. Male nurses' experiences of providing intimate care for women clients. *J Adv Nurs* 2006;55:559-67.
  9. Zang YL, Chung LYF, Wong TKS, et al. Chinese female nurses' perceptions of male genitalia-related care - Part 2. *Journal of Clinical Nursing* 2009;18:826-37.
  10. Vandembroucke JP, Elm EV, Altman DG, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): Explanation and elaboration. *Epidemiology* 2007;18:805-35.
  11. Liu L, Hao YF, Liu XH. Development of Professional Identity Scale for Nurses. *Nursing Journal of Chinese People's Liberation Army* 2011;28:18-20.
  12. Johnson M, Cowin LS, Wilson I, et al. Professional identity and nursing: contemporary theoretical developments and future research challenges. *Int Nurs Rev* 2012;59:562-9.
  13. CHen Y, Liu AN, Liu J, et al. Effect of group psychological intervention on psychological authorization and professional identity of male nurses. *Chinese Nursing Research* 2019;33:2323-6.
  14. Hojat M, Mangione S, Nasca TJ, et al. The Jefferson Scale of Physician Empathy: Development and Preliminary Psychometric Data. *Educ Psychol Meas* 2001;61:349-65.
  15. Ma L. The development of the Chinese version of the Jefferson Scale of Empathy and investigation for empathy of nurses. *Chinese Medical Sciences University*; 2009.
  16. Cuff BMP, Brown SJ, Taylor L, et al. Empathy: A Review of the Concept. *Emotion Review* 2014;8:144-53.
  17. Hsiao CY, Tsai YF, Kao YC. Psychometric properties of a Chinese version of the Jefferson Scale of Empathy-Health Profession Students. *J Psychiatr Ment Health Nurs* 2013;20:866-73.
  18. Hui Z, Dai X, Wang X. Mediating effects of empathy on the association between nursing professional values and professional quality of life in Chinese female nurses: A cross-sectional survey. *Nurs Open* 2019;7:411-8.
  19. Hampton S. A guide to male catheterization and sexuality and quality of life. *Br J Nurs* 2005;14:376, 378-9.
  20. Zang YL, Chung LY, Wong TK, et al. Female nurses' sensitivity to male genitalia-related care in mainland China. *J Clin Nurs* 2012;21:522-34.
  21. Xiang H, Dong X, Liu L. Investigation on female nurses' mental state of male patients while manipulating their privacy. *J Nurs Sci* 2004;19:6-8.
  22. Pan S, Sigley G, Jeffreys E. On "sex" and "sexuality" in China: a conversation with Pan Suiming. *Bull Concern Asian Sch* 1999;31:50-8.
  23. Consedine NS, Krivoshekova YS, Harris CR. Bodily embarrassment and judgment concern as separable factors in the measurement of medical embarrassment: psychometric development and links to treatment-seeking outcomes. *Br J Health Psychol* 2007;12:439-62.
  24. Consedine NS, Ladwig I, Reddig MK, et al. The many faeces of colorectal cancer screening embarrassment: preliminary psychometric development and links to screening outcome. *Br J Health Psychol* 2011;16:559-79.
  25. Oh J. Effects of Nursing Students' Empathy and Interpersonal Competence on Ideal Nurse Attributes. *J Nurs Educ* 2019;58:130-5.
  26. Teófilo TJS, Veras RFS, Silva VA, et al. Empathy in the nurse-patient relationship in geriatric care: An integrative review. *Nurs Ethics* 2019;26:1585-600.
  27. Tsai LY, Huang CY, Liao WC, et al. Assessing student nurses' learning needs for addressing patients' sexual health concerns in Taiwan. *Nurse Educ Today* 2013;33:152-9.

**Cite this article as:** Yang G, Liu H, Wang J, Geng Z, Wang L, Xu T. Genitalia-related nursing embarrassment and its associated factors among female nurses in mainland China: a nationwide cross-sectional study. *Ann Transl Med* 2021;9(3):191. doi: 10.21037/atm-20-5154