

UNDERGRADUATE NURSING EDUCATION TO ADDRESS PATIENTS' CONCERNS ABOUT SEXUAL HEALTH: THE PERCEIVED LEARNING NEEDS OF SENIOR TRADITIONAL FOUR-YEAR AND TWO-YEAR RECURRENT EDUCATION (RN-BSN) UNDERGRADUATE NURSING STUDENTS IN TAIWAN

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ABSTRACT

The aims of this study were to identify learning needs among traditional four-year and two-year recurrent education (RN-BSN) undergraduate nursing students in Taiwan with regard to patients' concerns about sexual health. A 24-item instrument (Learning Needs for Addressing Patients' Sexual Health Concerns) was used to collect data. Compared to RN-BSN undergraduate nursing students, traditional four-year undergraduate nursing students had more learning needs in the aspects of sexuality in health and illness (2.19 ± 0.66 vs. 1.80 ± 0.89 , $P = 0.005$) and approaches to sexual health care (2.03 ± 0.72 vs. 1.76 ± 0.86 , $P = 0.033$). After adjustment for other variables by the backward selection approach, those with experience in assessing patient's sexual functioning had fewer learning needs in sexuality in health and illness ($\beta = -0.375$, $P = 0.001$), communication about patient's intimate relationships ($\beta = -0.242$, $P = 0.031$), and approaches to sexual health care ($\beta = -0.288$, $P = 0.013$); those who agreed that sexual health care was a nursing role also expressed greater needs to learn about these 3 aspects (all $P < 0.01$). Content related to sexuality in health and illness and approaches to sexual health care should be strengthened in the traditional undergraduate nursing curriculum in order to support sexual health related competence, build a positive attitude regarding sexual health care as a nursing role, and strengthen the experience of assessing patient's sexual functioning. A different, simplified program may be more suitable for those with clinical experience.

Key Words: learning needs, nursing school curriculum, sexual health, student nurse

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INTRODUCTION

Sexual health and nursing

Sexual health as a concern in nursing education can be traced back to a 1975 statement about sexual health drawn up by the World Health Organization. This noted that sexual health enriched and enhanced personality, communication, and love; it also urged health care providers to understand and promote sexually healthy societies.¹⁾ Unfortunately, a number of barriers limit the ability of nurses to address patients' concerns about sexual health in clinical practice. These include poor training or education about issues related to sexual health, a lack of relevant nursing experience, personal views about sexuality, and a lack of confidence (embarrassment) that prevent nurses from addressing sexual issues and providing teaching or counseling to patients in clinical settings.²⁾ Nurses acknowledge a role in patient's sexual health, but are hesitant to take up that role in practice. Previous studies of nursing students have revealed low levels of intent because of a perceived lack of education, little confidence, and personal values about sexuality and sexual health when addressing concerns about sexual health by patients.^{3,4)}

Nursing education and patients' sexual health in Taiwan

The policy of the Ministry of Education in Taiwan is that students receive sex education: family life and sexuality in elementary school, health and physical education in junior high school, and a focus on nursing care to improve individual health in senior high school. As a result, nursing students have a basic knowledge about the anatomy and physiology of reproductive health, contraception, pregnancy and abortion, sexually transmitted infections, and gender equality as part of their compulsory education.⁵⁾ However, the provision of sexual health care to patients is still a missing piece in holistic nursing care. Increased knowledge about sexuality, confidence in sexual health care practices, and modifying negative attitudes to increase the students' ability to confront issues in patients' sexual health care have been recognized as high priorities in nursing education.^{6,7)} Taiwan like other eastern Asian countries including China, Korea, and Japan is under the influence of Confucianism and has been found to be more conservative and for people to have difficulty in openly discussing sexual issues when compared to other ethnic groups.⁸⁾

In Taiwan, nursing students may pursue either a traditional four-year program or a two-year recurrent education (RN-BSN) undergraduate degree. The latter requires a full-time job in the nursing field for at least one year. Our previous study⁹⁾ found that senior student nurses in a traditional program had a positive perspective on the role of nursing in sexual health care but had limited intent to provide it because they had not had an effective curriculum that increased their ability to address patient concerns about sexual health. The aim of this study was to compare the two groups (traditional four-year students and RN-BSN students) in terms of their learning needs relative to patients' concerns about sexual health and to determine if the same educational program was appropriate for both groups.

METHODS

Sample and setting

A purposive convenience sample of 144 traditional four-year and 58 RN-BSN undergraduate senior nursing students was taken from all those enrolled in the senior year in a nursing school at a medical university in central Taiwan. The study protocol was approved by the institutional review board at the nursing school. All nursing students had completed all core nursing subjects (including lectures and practice in the fundamentals of nursing, medical–surgical, pediatric,

obstetrics and gynecology, community and psychiatric nursing) and all participant responses were voluntary and anonymous. Two traditional four-year and five RN-BSN undergraduate senior nursing students did not complete the questionnaire. Therefore, the final numbers in the study were 142 traditional four-year and 53 RN-BSN undergraduate senior nursing students.

Data Collection

A questionnaire packet was distributed during lecture breaks. This included a cover letter explaining the purpose of the study, the right to refuse participation in the study, and assurance of anonymity. After providing consent, students took about 15–20 minutes to complete the questionnaire. All participants were free to ask questions about the study or to request withdrawal from it. To ensure anonymity, students were instructed to omit personal identification on the return questionnaires and to return questionnaires in the unmarked envelopes provided.

Instrument

The data were collected by using a self-reported, structured questionnaire, Learning Needs for Addressing Patient Sexual Health Concerns (LNAPSHC) based on the authors' previous study.⁹ The LNAPSHC consists of 24 items in a 4-point Likert response format in the first part (0 = no need, 1 = mild need, 2 = moderate need, and 3 = strong need) by which to identify nursing students' learning needs in order to address patients' concerns about sexual health. The theoretical range of the scale is 0–72, with a higher score indicating more learning needs. The tool exhibited internal consistency for the 24-item scale with a Cronbach's alpha of 0.97, and test retest reliability by Pearson's r of .89. Construct validity was supported by factor analysis. In the present study, the Cronbach's alpha was 0.98 for the 24-item scale, and 0.89, 0.95, and 0.95, respectively, for the three aspects of sexuality in health and illness, communication about patients' intimate relationships, and approaches to sexual health care. Data about participant's characteristics included nursing education, age, gender, stable close relationship (yes or no), religion, experience assessing patient's sexual functioning in clinical setting (yes or never) and values about sexuality and health care including the importance of sex in human life, agreement on sexual health care as a nursing role, willingness to provide sexual health care, and conservative attitudes toward sexuality, all of which were scored on a visual analog scale from 0 (minimum) to 10 (maximum) for strength of that value.

Statistical Analysis

Continuous data were summarized as mean \pm standard deviation (SD) and categorical data were expressed as numbers and percentages. Differences between the two groups of participants (traditional four-year program vs. RN-BSN) were detected by independent t -tests for continuous variables and by chi-square tests for categorical variables. Univariate and multivariate linear regression models were used to evaluate the impact of independent variables on the learning needs in order to address patients' sexual health concerns. Multivariate linear regression models with backward selection were applied; variables that did not improve model fit at $P < 0.1$ were discarded, but group, age and gender were always forced into the model for adjustment. Multicollinearity was evaluated by the variance inflationary factor (VIF). Variables with VIF > 5 were then considered to have multicollinearity with other covariates and were excluded from the multivariate analyses. The results of linear regression models were summarized by regression coefficients (β) with 95% confidence intervals (CI). All statistical analyses were performed with SAS software version 9.2 (SAS Institute Inc., Cary, NC). A two-tailed $P < 0.05$ indicated statistical significance.

RESULTS

Participants' Characteristics

A total of 195 subjects, 142 nursing students in a traditional four-year program and 53 in a RN-BSN program, were enrolled in this study. The ages of study participants ranged from 20 to 47 (mean \pm SD, 24.23 \pm 4.82). Most students were female (88.7%) and in a stable close relationship (75.4%). More than a half of the students (51.3%) followed a native folk religion such as Taoism or Buddhism. The distributions of age ($P < 0.001$) and gender ($P = 0.002$) were significantly different between traditional four-year program students and those in the RN-BSN program (Table 1).

Participants' experience in assessing patients' sexual functioning and their values about sexuality and health care

Among all participants, fewer than one third (31.3%) had experience in assessing a patient's sexual function in a clinical setting. RN-BSN students were more likely to have had such an

Table 1 Summary of participants' characteristics and values about sexuality and health care

	Total (n = 195)	Traditional four-year program (n=142)	RN-BSN (n=53)	P-value
Demographics				
Age (years), mean \pm SD	24.23 \pm 4.82	22.15 \pm 1.46	29.77 \pm 6.16	<0.001 ^{†***}
Gender, n (%)				
Male	22 (11.3)	22 (15.5)	0 (0.0)	0.002 ^{‡**}
Female	173 (88.7)	120 (84.5)	53 (100.0)	
Stable close relationship, n (%)				
No	48 (24.6)	30 (21.1)	18 (34.0)	0.064 [‡]
Yes	147 (75.4)	112 (78.9)	35 (66.0)	
Religion, n (%)				
No religion	76 (39.0)	59 (41.6)	17 (32.1)	0.478 [‡]
Folk religion (Taoism or Buddhism)	100 (51.3)	70 (49.3)	30 (56.6)	
Other	19 (9.7)	13 (9.2)	6 (11.3)	
Experience in assessing patient's sexual functioning in clinical setting, n (%)				
Never	134 (68.7)	106 (74.7)	28 (52.8)	0.004 ^{‡***}
Yes	61 (31.3)	36 (25.4)	25 (47.2)	
Values about sexuality and health care				
Importance of sex in human life, mean \pm SD	7.32 \pm 1.68	7.35 \pm 1.63	7.25 \pm 1.84	0.694 [†]
Agreement on sexual health care as a nursing role, mean \pm SD	7.83 \pm 1.92	7.85 \pm 1.87	7.77 \pm 2.05	0.818 [†]
Willingness to provide sexual health care, mean \pm SD	4.38 \pm 2.44	4.58 \pm 2.42	3.87 \pm 2.45	0.071 [†]
Conservative attitude toward sexuality, mean \pm SD	5.61 \pm 2.04	5.50 \pm 2.18	5.91 \pm 1.60	0.158 [†]

[†]determined by independent t-test; [‡]determined by chi-square test.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

SD: standard deviation.

LEARNING NEEDS IN SEXUAL HEALTH

experience than were traditional four-year students (47.2% vs. 25.4%, $P = 0.004$). With regard to values about sexuality and health care, the total means \pm SDs for “importance of sex in human life”, “agreement on sexual health care as a nursing role”, “willingness to provide sexual health care”, and “conservative attitude toward sexuality”, were 7.32 ± 1.68 , 7.83 ± 1.92 , 4.38 ± 2.44 , and 5.61 ± 2.04 , respectively. No significant differences were found between the two groups of students on each of these items (Table 1).

Participants' learning needs in order to address patients' concerns about sexual health

The responses of participants to three aspects of learning needs on the 24 items are summarized in Supplementary Table 1. Comparisons in terms of learning needs to address patients' concerns sexual health between traditional four-year and RN-BSN students are shown in Table 2.

With regard to learning needs about “Sexuality in health and illness”, traditional four-year students had significantly more needs than RN-BSN students overall (2.19 ± 0.66 vs. 1.80 ± 0.89 , $P = 0.005$) and on each items within this aspect (all $P < 0.05$) (Table 2).

With regard to learning needs about “Communication about patients' intimate relationships”, the traditional four-year students had significantly more needs than did RN-BSN students on only two items: “Admiration for individual characteristics” (2.06 ± 0.91 vs. 1.70 ± 0.99 , $P = 0.018$) and “Body image related to intimacy” (2.25 ± 0.85 vs. 1.77 ± 0.91 , $P = 0.001$) (Table 2).

With regard to learning needs about “Approaches to sexual health care”, the traditional four-year students had significantly more needs than RN-BSN students overall (2.03 ± 0.72 vs. 1.76 ± 0.86 , $P = 0.033$) and on three items: “Obtain a comprehensive sexual health history” (2.15 ± 0.84 vs. 1.75 ± 1.00 , $P = 0.005$), “Identify biopsychosocial factors in altered sexual activity” (2.07 ± 0.90 vs. 1.72 ± 0.95 , $P = 0.017$), and “Refer patient to another specialist or support group” (2.12 ± 0.88 vs. 1.75 ± 0.98 , $P = 0.013$) (Table 2).

Supplementary Table S1 Summary of responses to three aspects on the 24 items (n=195)

	Response							
	No need		Mild needs		Moderate needs		Strong needs	
	Traditional four-year program (n=142)	RN-BSN (n=53)	Traditional four-year program (n=142)	RN-BSN (n=53)	Traditional four-year program (n=142)	RN-BSN (n=53)	Traditional four-year program (n=142)	RN-BSN (n=53)
<i>Sexuality in health and illness</i>								
Sexual response cycle	2 (1.4%)	3 (5.7%)	33 (23.2%)	21 (39.6%)	48 (33.8%)	13 (24.5%)	59 (41.6%)	16 (30.2%)
Illness, chronic disease and sexuality	1 (0.7%)	5 (9.4%)	33 (23.2%)	18 (34.0%)	42 (29.6%)	13 (24.5%)	66 (46.5%)	17 (32.1%)
The influence on treatment on sexuality	1 (0.7%)	5 (9.4%)	23 (16.2%)	18 (34.0%)	49 (34.5%)	14 (26.4%)	69 (48.6%)	16 (30.2%)
Sexuality throughout the life cycle	1 (0.7%)	5 (9.4%)	36 (25.4%)	18 (34.0%)	51 (35.9%)	15 (28.3%)	54 (38.0%)	15 (28.3%)
Risk and safety in sexual activity and how to respond	1 (0.7%)	5 (9.4%)	27 (19.0%)	16 (30.2%)	48 (33.8%)	13 (24.5%)	66 (46.5%)	19 (35.9%)
Human sexuality and health care	1 (0.7%)	4 (7.6%)	39 (27.5%)	19 (35.9%)	51 (35.9%)	14 (26.4%)	51 (35.9%)	16 (30.2%)
<i>Communication about patients' intimate relationships</i>								
Expression of love and attraction	0 (0.0%)	4 (7.6%)	37 (26.1%)	18 (34.0%)	52 (36.6%)	13 (24.5%)	53 (37.3%)	18 (34.0%)

Resumption of sexual activity	2 (1.4%)	3 (5.7%)	47 (33.1%)	18 (34.0%)	50 (35.2%)	17 (32.1%)	43 (30.3%)	15 (28.3%)
Communicate limitations or modifications in sexual activity	1 (0.7%)	4 (7.6%)	44 (31.0%)	18 (34.0%)	44 (31.0%)	15 (28.3%)	53 (37.3%)	16 (30.2%)
Fear and depression related to sexual activity	0 (0.0%)	5 (9.4%)	48 (33.8%)	15 (28.3%)	52 (36.6%)	19 (35.9%)	42 (29.6%)	14 (26.4%)
Be intimate to engage in pleasurable activities	2 (1.4%)	5 (9.4%)	41 (28.9%)	18 (34.0%)	50 (35.2%)	14 (26.4%)	49 (34.5%)	16 (30.2%)
Interdependence between patient and sexual partner	5 (3.5%)	8 (15.1%)	49 (34.5%)	18 (34.0%)	43 (30.3%)	12 (22.6%)	45 (31.7%)	15 (28.3%)
Role function related to intimacy	1 (0.7%)	4 (7.6%)	43 (30.3%)	18 (34.0%)	50 (35.2%)	15 (28.3%)	48 (33.8%)	16 (30.2%)
Admiration for individual characteristics	5 (3.5%)	5 (9.4%)	40 (28.2%)	21 (39.6%)	39 (27.5%)	12 (22.6%)	58 (40.9%)	15 (28.3%)
Body image related to intimacy	2 (1.4%)	3 (5.7%)	31 (21.8%)	20 (37.7%)	38 (26.8%)	16 (30.2%)	71 (50.0%)	14 (26.4%)
Approaches to sexual health care								
Guide a discussion on sexual expression	1 (0.7%)	3 (5.7%)	43 (30.3%)	16 (30.2%)	46 (32.4%)	20 (37.7%)	52 (36.6%)	14 (26.4%)
Comfortable in discussing sexual issues	6 (4.2%)	6 (11.3%)	55 (38.7%)	18 (34.0%)	40 (28.2%)	17 (32.1%)	41 (28.9%)	12 (22.6%)
Obtain a comprehensive sexual health history	1 (0.7%)	6 (11.3%)	37 (26.1%)	16 (30.2%)	43 (30.3%)	16 (30.2%)	61 (43.0%)	15 (28.3%)
Display an accepting, non-judgmental attitude	7 (4.9%)	3 (5.7%)	42 (29.6%)	22 (41.5%)	49 (34.5%)	11 (20.8%)	44 (31.0%)	17 (32.1%)
Identify biopsychosocial factors in altered sexual activity	4 (2.8%)	4 (7.6%)	40 (28.2%)	21 (39.6%)	40 (28.2%)	14 (26.4%)	58 (40.9%)	14 (26.4%)
Clarify myths, misinformation, and controversy	2 (1.4%)	4 (7.6%)	46 (32.4%)	21 (39.6%)	45 (31.7%)	12 (22.6%)	49 (34.5%)	16 (30.2%)
Refer patient to another specialist or support group	1 (0.7%)	4 (7.6%)	44 (31.0%)	21 (39.6%)	34 (23.9%)	12 (22.6%)	63 (44.4%)	16 (30.2%)
Provide information to foster adaptation with sexual activity	2 (1.4%)	3 (5.7%)	40 (28.2%)	20 (37.7%)	39 (27.5%)	12 (22.6%)	61 (43.0%)	18 (34.0%)
Assess patient's readiness to resume sexual activity	5 (3.5%)	4 (7.6%)	41 (28.9%)	20 (37.7%)	43 (30.3%)	15 (28.3%)	53 (37.3%)	14 (26.4%)

LEARNING NEEDS IN SEXUAL HEALTH

Table 2 Learning needs for addressing patients' concerns about sexual health in three aspects between four-year traditional and RN-BSN undergraduate nursing students

	Traditional four-year program (n=142)	RN-BSN (n=53)	P-value [†]
Sexuality in health and illness	2.19 ± 0.66	1.80 ± 0.89	0.005**
Sexual response cycle	2.15 ± 0.83	1.79 ± 0.95	0.010*
Illness, chronic disease and sexuality	2.22 ± 0.83	1.79 ± 1.01	0.003**
The influence of treatment on sexuality	2.31 ± 0.76	1.77 ± 0.99	0.001**
Sexuality throughout the lifespan	2.11 ± 0.81	1.75 ± 0.98	0.010*
Risk and safety in sexual activity and how to respond	2.26 ± 0.79	1.87 ± 1.02	0.013*
Human sexuality and health care	2.07 ± 0.81	1.79 ± 0.97	0.046*
Communication about patients' intimate relationships	2.04 ± 0.68	1.78 ± 0.87	0.052
Expression of love and attraction	2.11 ± 0.79	1.85 ± 0.99	0.085
Resumption of sexual activity	1.94 ± 0.83	1.83 ± 0.91	0.411
Communicate limitations or modifications in sexual activity	2.05 ± 0.84	1.81 ± 0.96	0.094
Fear and depression related to sexual activity	1.96 ± 0.80	1.79 ± 0.95	0.224
Be intimate to engage in pleasurable activities	2.03 ± 0.83	1.77 ± 0.99	0.074
Interdependence between patient and sexual partner	1.90 ± 0.89	1.64 ± 1.06	0.088
Role function related to intimacy	2.02 ± 0.82	1.81 ± 0.96	0.132
Admiration for individual characteristics	2.06 ± 0.91	1.70 ± 0.99	0.018*
Body image related to intimacy	2.25 ± 0.85	1.77 ± 0.91	0.001**
Approaches to sexual health care	2.03 ± 0.72	1.76 ± 0.86	0.033*
Guide a discussion on sexual expression	2.05 ± 0.84	1.85 ± 0.89	0.145
Comfortable in discussing sexual issues	1.82 ± 0.90	1.66 ± 0.96	0.292
Obtain a comprehensive sexual health history	2.15 ± 0.84	1.75 ± 1.00	0.005**
Display an accepting, non-judgmental attitude	1.92 ± 0.90	1.79 ± 0.97	0.405
Identify biopsychosocial factors in altered sexual activity	2.07 ± 0.90	1.72 ± 0.95	0.017*
Clarify myths, misinformation, and controversy	1.99 ± 0.85	1.75 ± 0.98	0.098
Refer patient to another specialist or support group	2.12 ± 0.88	1.75 ± 0.98	0.013*
Provide information to foster adaptation of sexual activity	2.12 ± 0.87	1.85 ± 0.97	0.063
Assess patient's readiness to resume sexual activity	2.01 ± 0.90	1.74 ± 0.94	0.059

Data are presented as mean ± SD.

SD: standard deviation.

[†]determined by independent t-test

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

The influence of participants' demographics, experience in assessing patients' sexual functioning and values about sexuality and health care on learning needs in order to address patients' concerns about sexual health

The effect of participants' characteristics on their learning needs in order to address patients' concerns about sexual health was investigated by univariate linear regression analysis. From the aspect of "Sexuality in health and illness", significant effects were observed in the variables of group (RN-BSN vs. Traditional four-year $P = 0.001$), age ($P = 0.001$), experience in assessing patient's sexual functioning in a clinical setting ($P < 0.001$), "Agreement on sexual health care as a nursing role" ($P < 0.001$), and "Willingness to provide sexual health care" ($P = 0.013$)

Table 3 Univariate linear regression analysis of factors influencing learning needs for addressing patients' concerns about sexual health in three aspects

	Sexuality in health and illness		Communication about patients' intimate relationships		Approaches to sexual health care	
	β (95% CI)	<i>P</i> -value	β (95% CI)	<i>P</i> -value	β (95% CI)	<i>P</i> -value
Group						
Traditional four-year program	reference group	—	reference group	—	reference group	—
RN-BSN	-0.392 (-0.624, -0.160)	0.001**	-0.260 (-0.494, -0.027)	0.029*	-0.265 (-0.508, -0.022)	0.033*
Demographics						
Age (per 1 year)	-0.036 (-0.057, -0.014)	0.001**	-0.030 (-0.052, -0.009)	0.006*	-0.026 (-0.048, -0.004)	0.023*
Gender						
Male	reference group	—	reference group	—	reference group	—
Female	0.074 (-0.261, 0.410)	0.662	0.103 (-0.229, 0.435)	0.541	0.104 (-0.241, 0.450)	0.552
Stable close relationship						
No	reference group	—	reference group	—	reference group	—
Yes	0.048 (-0.199, 0.294)	0.702	0.006 (-0.238, 0.250)	0.961	-0.018 (-0.272, 0.236)	0.887
Religion						
No religion	reference group	—	reference group	—	reference group	—
Folk religion (Taoism or Buddhism)	-0.012 (-0.238, 0.214)	0.917	-0.023 (-0.246, 0.200)	0.839	0.025 (-0.207, 0.257)	0.831
Other	-0.116 (-0.497, 0.265)	0.548	-0.266 (-0.642, 0.110)	0.164	-0.222 (-0.613, 0.169)	0.264
Experience in assessing patient's sexual functioning in clinical setting						
Never	reference group	—	reference group	—	reference group	—
Yes	-0.424 (-0.645, -0.203)	<0.001***	-0.328 (-0.550, -0.107)	0.004**	-0.376 (-0.606, -0.146)	0.002**
Values about sexuality and health care						
Importance of sex in human life (per 1 point)	0.041 (-0.022, 0.104)	0.203	0.040 (-0.022, 0.102)	0.207	0.049 (-0.016, 0.114)	0.136
Agreement on sexual health care as a nursing role (per 1 point)	0.104 (0.050, 0.158)	<0.001***	0.093 (0.040, 0.146)	0.001**	0.117 (0.063, 0.172)	<0.001***
Willingness to provide sexual health care (per 1 point)	0.055 (0.012, 0.097)	0.013*	0.039 (-0.004, 0.082)	0.072	0.024 (-0.021, 0.069)	0.292
Conservative attitude toward sexuality (per 1 point)	-0.008 (-0.060, 0.044)	0.774	0.017 (-0.034, 0.069)	0.512	0.002 (-0.051, 0.056)	0.928

P*<0.05; *P*<0.01; ****P*<0.001.

(Table 3). From the aspects of both “Communication about patients' intimate relationships” and “Approaches to sexual health care”, significant effects were observed in: group, age, experience in assessing patient's sexual functioning in a clinical setting, and “Agreement on sexual health care as a nursing role” (all *P* < 0.05) (Table 3).

After adjustment for other variables by the backward selection approach, the findings from multivariate linear regression analysis are shown in Table 4. For all three aspects of learning needs, the differences between the two groups were no longer significant after adjusting for age, gender, and other significant variables. With regard to “Sexuality in health and illness”, independent effects were observed for the variables of “experience in assessing patient's sexual function in a clinical setting” (*P* = 0.001), “Agreement on sexual health care as a nursing role” (*P* = 0.001), and “Willingness to provide sexual health care” (*P* = 0.026). With regard to

LEARNING NEEDS IN SEXUAL HEALTH

Table 4 Multivariate linear regression analysis of factors influencing learning needs in order to address patients' concerns about sexual health in three aspects

Group	Sexuality in health and illness		Communication on patients' intimate relationships		Approaches to sexual health care	
	β (95% CI)	<i>P</i> -value	β (95% CI)	<i>P</i> -value	β (95% CI)	<i>P</i> -value
Traditional four-year SN	reference group	—	reference group	—	reference group	—
RN-BSN	-0.113 (-0.426, 0.201)	0.479	0.020 (-0.302, 0.342)	0.904	-0.028 (-0.358, 0.303)	0.869
Demographics						
Age (per 1 year)	-0.024 (-0.053, 0.004)	0.092	-0.032 (-0.062, -0.003)	0.031*	-0.025 (-0.055, 0.005)	0.101
Gender						
Male	reference group	—	reference group	—	reference group	—
Female	0.187 (-0.127, 0.501)	0.242	0.162 (-0.161, 0.486)	0.323	0.161 (-0.170, 0.493)	0.338
Experience in assessing patient's sexual function in clinical setting						
Never	reference group	—	reference group	—	reference group	—
Yes	-0.375 (-0.595, -0.154)	0.001**	-0.242 (-0.463, -0.022)	0.031*	-0.288 (-0.514, -0.062)	0.013*
Values about sexuality and health care						
Agreement on sexual health care as a nursing role (per 1 point)	0.091 (0.039, 0.143)	0.001**	0.097 (0.045, 0.150)	<0.001***	0.119 (0.066, 0.173)	<0.001***
Willingness to provide sexual health care (per 1 point)	0.048 (0.006, 0.090)	0.026*				

P*<0.05; *P*<0.01; ****P*<0.001.

“Communication about patients' intimate relationships”, independent effects were observed for the variables of age ($P = 0.031$), “experience in assessing patient's sexual functioning in a clinical setting” ($P = 0.031$), and “Agreement on sexual health care as a nursing role” ($P < 0.001$). With regard to “Approaches to sexual health care”, independent effects were observed for variables of “experience in assessing patient's sexual functioning in a clinical setting” ($P = 0.013$) and “Agreement on sexual health care as a nursing role” ($P < 0.001$) (Table 4).

The VIFs for each variable in these multivariate models were all less than 5 (VIF<5). This indicated that there was no apparent multicollinearity in these multivariate linear regression analyses.

DISCUSSION

Both traditional four-year and RN-BSN nursing students regarded sex as an important part of life and agreed that nursing had a role in sexuality education; however, nursing students in this study had little experience in providing sexual health care to patients or the willingness to do so. This reflected a gap in professional commitment and clinical practice as found in a previous study.¹⁰⁾

Overall, both groups perceived themselves as having moderate learning needs. Traditional four-year nursing students acknowledged more learning needs than did RN-BSN students particularly in the aspects of sexuality in health and illness and approaches to sexual health care. One study¹¹⁾ revealed that younger and more inexperienced nurses had a greater level of discomfort in addressing sexual health issues with patients. Traditional four-year nursing students identified a nursing role in patients' sexual health care, but still needed time and support to develop related

competencies in practice. Nursing practice demands competence, but nursing education does not prepare students to understand the real world of growing demands in such a practice.¹²⁾ It has been noted that even nurses who were trained in sexuality and sexual health issues, did not consider these topics to be appropriate in nursing practices.¹³⁾ There is a need to develop programs in a proper sequence, from novice to expert in pre and post registration nursing education.

Sexual problems as a result of alternations in physical function caused by disease or treatment are good issues with which to initiate discussion with patients. These are also primary patient concerns,¹⁴⁾ but the nursing curriculum had spent little time on them. Adopting sexuality and sexual health as a single nursing subject would be difficult, however. We can add these concepts to enrich the established courses, i.e. adding sexual health topics in Medical-Surgical, Oncology, Gynecology, Psychiatric and Gerontology Nursing.

Currently, there is global interest in building an educational model and applying technology such as on line programming or electronic consultation to promote competence through innovation.^{12,15,16)} A first ever national strategy for sexual health and HIV prevention in the United Kingdom outlined a model with three levels of service provision: level 1 included all primary care teams, level 2 suggested the development within primary care trusts of primary care teams with a special interest in sexual health and level 3 encouraged specialty services such as genitourinary medicine and community family planning.¹⁷⁾ Additionally, the Royal College of Nursing had developed a distance-learning package for nurses relative to the delivery of Level 1 services.¹³⁾ Specific training needs in sexual health have now been identified.

The curriculum should take nursing students' levels of experience into account. RN-BSN students in our study were older, had work experience in nursing care, and generally felt more competent in dealing with patient challenges.

Learning to obtain a comprehensive sexual history was the most important need of traditional four-year nursing students, while guiding a discussion on sexual expression was important for RN-BSN students. Both taking a sexual history and guiding a discussion related to sexual expression require communication and assessment skills. Nursing faculty face an increasing challenge in the lack of available patients for student experiences, particularly with regard to sexual issues. Virtual simulations, such as virtual avatars might be developed for multigenerational, multicultural client scenarios in order to help students learn what questions to ask in order to collect data.^{15,18)} RN-BSN students with their greater need to provide patients with information about sexual activity could benefit from workshops where they might explore their beliefs, feelings, and knowledge about the subjects of sexuality and sexual health. Post- registration nurses could attend specific courses.¹³⁾ The best place for nursing students to address the issues of sexual health is in the clinical setting. One study revealed that nursing students recognized clinical nurses as mentors, and they could offer students access to first-hand experiences.¹⁹⁾ If nursing instructors built a partnership with clinical nurses for part of the student mentorship, this would increase the quality of sexual health care in clinical practice.

We recommend that nurse educators consider specific curricula to address patients' sexual health issues in order to provide real holistic care. Curricula should be designed in accordance with nursing students' backgrounds and experiences ranging from novice to expert. Such an educational model and applied technology would promote competence through innovation. Nurses should learn to become aware if they have negative attitudes towards patients' sexual healthcare, give permission for patients to talk about sexual issues, and be willing to refer to experts or appropriate groups when they don't have the answers themselves.²⁰⁾

Limitations

This sample of nursing students was drawn from one nursing school in central Taiwan, which

limits the generalization of the findings. Some individuals might have felt that the topic of sexuality was too embarrassing or too private an issue to discuss with patients, and therefore, may have followed popular opinion when selecting an answer or may even have declined to participate in the study. RN-BSN recurrent education student nurses had been employed throughout Taiwan and their characteristics and experiences varied from those of traditional four-year student nurses. Future studies should include more males to determine if other, more specific topics should be addressed. The cross-sectional design of this study did not allow for inferences about causality to be drawn, and other confounding variables such as attitude of peers²¹⁾ and faculty²²⁾ should be considered as well.

Conclusions

Information about sexuality in health and illness, communication about patients' intimate relationships and approaches to sexual health care should be made mandatory in all nursing programs in order to build a positive attitude regarding sexual health as a nursing role, reinforce knowledge about sexuality in health and illness and provide the skills to address patients' concerns about sexual health. A simplified curriculum may be more suitable for students with previous clinical experience.

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REFERENCES

- 1) World Health Organization. Education and treatment in human sexuality: the training of health professionals. Report of a WHO meeting. *World Health Organ Tech Rep Ser*, 1975; 5–33.
- 2) Magnan MA, Reynolds K. Barriers to addressing patient sexuality concerns across five areas of specialization. *Clin Nurse Spec*, 2006; 20: 285–292.
- 3) Huang CY, Tsai LY, Tseng TH, Li CR, Lee S. Nursing students' attitudes towards provision of sexual health care in clinical practice. *J Clin Nursing*, 2013; 22: 3577–3586.
- 4) Dattilo J, Brewer MK. Assessing clients' sexual health as a component of holistic nursing practice: senior nursing students share their experiences. *J Holist Nurs*, 2005; 23: 208–219; discussion 20–23.
- 5) Lin, YC. A Historical Review and the Future Development of Sexuality Education in Taiwan. *Studies in Sexuality*, 2010; 1(2): 1–14. (in Chinese)
- 6) Kong SK, Wu LH, Loke AY. Nursing students' knowledge, attitude and readiness to work for clients with sexual health concerns. *J Clin Nurs*, 2009; 18: 2372–2382.
- 7) Sung SC, Yeh MY, Lin YC. An exploration of the nurses' perspectives and their current practice on sex consultation. *Formos J Sexology*, 2010; 16: 1–15. (in Chinese)
- 8) Yu J. Young people of Chinese origin in western countries: a systematic review of their sexual attitudes and behaviour. *Health Soc Care Community*, 2010; 18: 117–128.
- 9) Tsai LY, Huang CY, Liao WC, Tseng TH, Lai TJ. Assessing student nurses' learning needs for addressing patients' sexual health concerns in Taiwan. *Nurse Educ Today*, 2013; 33: 152–159.
- 10) Kotronoulas G, Papadopoulou C, Patiraki E. Nurses' knowledge, attitudes, and practices regarding provision of sexual health care in patients with cancer: critical review of the evidence. *Support Care Cancer*, 2009; 17: 479–501.
- 11) Julien JO, Thom B, Kline NE. Identification of barriers to sexual health assessment in oncology nursing practice. *Oncol Nurs Forum*, 2010; 37: E186–E190.
- 12) Stull A, Harper MG. Building an educational model that promotes competence through innovation. *Nurs Educ Perspect*, 2012; 33(6), 413–415. doi: 10.5480/1536-5026-33.6.413

- 13) Royal College of Nursing. Retrieved from UK, Sexual health for non-experts, http://www.rcn.org.uk/development/practice/cpd_online_learning/sexual_health_for_non-experts
- 14) Ivarsson B, Fridlund B, Sjöberg T. Information from health care professionals about sexual function and coexistence after myocardial infarction: a Swedish national survey. *Heart Lung*, 2009; 38(4): 330–335. doi: 10.1016/j.hrtlng.2009.01.001.
- 15) Macdowall W, Parker R, Nanchahal K, Ford C, Lowbury R, Robinson A, Wellings K. ‘Talking of Sex’: Developing and piloting a sexual health communication tool for use in primary care. *Patient Educ Couns*, 2010; 81(3), 332–337. doi: 10.1016/j.pec.2010.10.027
- 16) Markham WA, Bullock AD, Matthews P, Firmstone VR, Kelly S, Field SJ. Sexual health care training needs of general practitioner trainers: A regional survey. *J Fam Plan Repro Health Care*, 2005; 31(3), 213–218. doi: 10.1783/1471189054484086
- 17) Adler M, French P, McNab A, Smith C, Wellsted S. The national strategy for sexual health and HIV: implications for genitourinary medicine. *Sex Transm Infect*, 2002; 78(2), 83–86.
- 18) Sweigart L, Hodson-Carlton K. Improving student interview skills: The virtual avatar as client. *Nurse Educator*, 2013; 38(1), 11–15.
- 19) Vaismoradi M, Bondas T, Jasper M, Turunen H. Nursing students’ perspectives and suggestions on patient safety-Implications for developing the nursing education curriculum in Iran. *Nurse Educ Today*, 2012. doi: 10.1016/j.nedt.2012.10.002
- 20) Pow J, Elliott L, Raeside R, Themessl-Huber M, Claveirole A. Partnership working and improved service delivery: views of staff providing sexual health services. *J Health Serv Res Policy*, 2013; 18: 132–137.
- 21) Billington T. Issues of patient sexuality in nurse education. *Br J Nurs*, 2012; 21: 1109.
- 22) Del Prato D. Students’ voices: the lived experience of faculty incivility as a barrier to professional formation in associate degree nursing education. *Nurse Educ Today*, 2013; 33: 286–290.