BASIC SCIENCE

The Relationship Between Gender Role Orientation and Sexual Health Care in Taiwanese Nurses: A Structural Equation Model

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Cheng-Yi Huang, RN, PhD, Chiou-Fang Liou, RN, PhD, Shu-Hsin Lee, RN, PhD, and Li-Ya Tsai, RN, PhD

ABSTRACT

Introduction: Patients' sexual concerns are private, sensitive issues, and providing sexual health care (SHC) is a legitimate area of concern for the nursing practice.

Aims: This study tests a structural equation model for factors that affect SHC among Taiwanese nurses.

Methods: A cross-sectional study was performed between August 2014 and July 2015. A total of 471 registered nurses from a medical center in Taiwan were enrolled in this study. All nurses participated anonymously and completed 3 questionnaires: Nursing Attitude in Sexual Health Care scale, Nursing Intervention in Sexual Health scale, and Gender Role Orientation scale. The Permission-Limited Information-Specific Suggestions-Intensive Therapy model based on scale was application, and theory of planned behavior was used to examine the relationship of these 3 scales in nurses.

Main Outcome Measures: SHC surveys were developed for nurses. These valid and reliable instruments included Nursing Attitude in Sexual Health Care, Nursing Intervention in Sexual Health, and Gender Role Orientation.

Results: The fitted structural equation model was valid. The construct reliability of latent variables ranged from 0.730 to 0.942, which met the requirement of 0.70. The attitude about SHC ($\beta = 0.182$, $P < .001$), subjective norms on SHC ($\beta = 0.146$, $P < .001$), and confidence about SHC ($\beta = 0.583$, $P < .001$) had significant effects on the behavioral intention to provide SHC. Subsequently, the behavioral intention to provide SHC had a significant, direct effect on the behavioral frequency of providing SHC ($\beta = 0.356$, $P < .001$). However, gender role orientation was not significantly associated with behavioral intention and behavioral frequency to provide SHC.

Conclusions: The good fit for the structural equation model suggests that the predictors of behavioral intention and behaviors of providing SHC include attitude, subjective norms, and perceived control. The stronger behavioral intention of providing SHC resulted in a higher frequency of providing SHC. However, the relationship between gender role orientation and SHC had no significant effect. **Huang C-Y, Liou C-F, Lee S-H, et al. The Relationship Between Gender Role Orientation and Sexual Health Care in Taiwanese Nurses: A Structural Equation Model. Sex Med 2020;8:565−573.**

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Key Words: Gender Role Orientation; Nursing Intervention; Sexual Health Care; Behavioral Intention

INTRODUCTION

The World Health Organization defines sexual health as "…a state of physical, emotional, mental and social well-being in relation to sexuality; …the sexual rights of all persons must be respected, protected and fulfilled."[1,2] Psychological factors related to sexual health included obsession, psychosis, anxiety, depression, paranoia, phobia, individual sensitivity, and aggression. There was a significant and negative relationship between the depression, obsession, anxiety, individual sensitivity, phobia, aggression, psychosis, and paranoia with sexual health. In total, Vaziri et al[3] showed that physical complaints, depression, and psychosis were able to predict sexual health. Many diseases,

trauma, and treatments impact sexual health. Nearly 75% of patients experience a decrease in the frequency and desire for sexual activity after a cardiac event,[4] and 70% of patients on dialysis experience some form of sexual dysfunction.[5,6] Among stroke patients, 87% reported low sexual function.[7] A disease process may hamper patients' sexual health directly or indirectly and is inextricably linked to an individual's appraisal of his quality of life.[8] Studies suggest that most patients feel sexual health issues are very important and are more likely to discuss their sexual health needs if asked about sexual health.[9,10] Despite this evidence, there has been little engagement by nurses regarding patients' sexual health care (SHC).[11]

Nurses are in a prime position to take a holistic approach to health care.[12] SHC has grown in importance among patients and health-care professionals worldwide, and most nurses felt responsibility for addressing SHC with their patients.[12—14] These nurses recognized that providing SHC was not only essential but also very challenging for the nursing profession. One of the approaches used in handling problems related to sexuality is the Permission-Limited Information-Specific Suggestions-Intensive Therapy (PLISSIT) model. This model guides nurses and other health-care professionals in determining the needs of people with sexual problems and in the planning of appropriate interventions.[15,16] For decades, researchers have explored factors that affect nurses' abilities to provide SHC. Some of the identified reasons for not addressing SHC with patients included practice setting, lack of confidence, time pressures, lack of privacy, insufficient knowledge, and the nurse-patient interpersonal relationship.[11,12,17—19] According to the theory of planned behavior, the more favorable the attitude and subjective norms are, the greater the confidence will be in initiating discussions.[20] Not surprisingly, nurses' attitudes toward and beliefs about patients' sexual concerns were strongly predictive of their behavior for providing SHC.[21—23]

Patients' sexual concerns require careful and sensitive discussions. Despite most nurses being female, nursing education has always been based on medical education. Traditionally, the medical field has been considered masculine. Gender bias and role orientation do exist in nursing education.[24] Nurses play a critical role in the development of egalitarian perspectives of gender roles.[25] Gender role orientation and ideologies about what is expected for females and males limit societal roles and participation in the workplace.[26] Trust and confidentiality are essential for communication about SHC and are likely only found in close professional relationships.[14] Avoiding discussions about SHC has been a tradition in nursing, and nursing education has not emphasized a gender perspective toward health care.[12,17] If nurses understood their beliefs around sexuality and were comfortable with their own sexual identities, they might be more likely to initiate conversations about SHC.[27] Not surprisingly, nurses' SHC interventions are rare in the clinical setting.

Sexual orientation refers to an enduring pattern of emotional, romantic, and/or sexual attractions to men, women, or both sexes. In general, sexual orientation included the heterosexual, gay, and bisexual. Sexual identity is how one thinks of oneself in terms of to whom one is romantically or sexually attracted. Sexual identity may also refer to sexual orientation identity, which is when people identify or disidentify with a sexual orientation or choose not to identify with a sexual orientation. Gender stereotypes are the beliefs that people have about the characteristics of males and females.[28] The content of stereotypes varies over cultures and over time. Across cultures, men are assumed to be aggressive, independent, and assertive and women to be emotional and sensitive, emphatic, and compliant. Gender stereotype theory suggests that men are generally perceived as more masculine than women, whereas women are generally perceived as more feminine than men. In contrast, gender role orientation refers to behaviors, attitudes, and personality traits that a society designates as masculine or feminine and, thus, is considered more "appropriate" or typical for the male or female social role.[29,30] Masculine and feminine gender role orientations may be influenced and formed by several factors such as socialization by parents or peer groups,[31] cognitive-motivational factors,[32] and biological influences such as hormonal and genetic processes.[33—35] Furthermore, gender role orientation is closely related to interpersonal competence and is a key predictor of nursing behavior.[36,37] Providing SHC is a complex process, which involves both individual patient dynamics and patient-provider dynamics.[14] Developing interpersonal skills for SHC requires improving sensitivity toward the sexual health needs of clients.[38] The effect of gender role orientation on intention and behavior toward SHC remains uncertain. Therefore, understanding the effect of gender role orientation on intention and behavior toward SHC may help explain nurses' avoidance of SHC in clinical practice.

Testing conceptual models by using a structural equation modeling (SEM) method enables researchers to clearly show direct and indirect impacts. Liu et al[36] suggested a hypothetical model and investigated the direct and indirect impacts of gender role orientation on student nurses' behavior and critical thinking in Taiwan. This model may reveal that a caring attitude can stimulate critical-thinking abilities in nursing students and that critical thinking can be predicted by caring behavior. Therefore, the present study attempts to explore the relationships among gender role orientation, attitudes toward SHC, subjective norms regarding SHC, and confidence about SHC. These results can contribute toward revisions to the nursing curriculum. This study tests a model for factors that affect behavioral frequency toward SHC in nurses (Figure 1). The SEM is based on the theories of planned behavior and societal roles and is proposed to explore the relationships among confidence, subjective norms, attitudes, behavioral intention, gender role orientation, and behavioral frequency toward providing SHC. The following 6 hypotheses were proposed:

Hypothesis 1: A higher level of attitude toward SHC (AH) will result in a stronger intention of providing SHC (IT).

Hypothesis 2: A higher level of subjective norms on SHC (SN) will result in a stronger behavioral intention to provide SHC (IT).
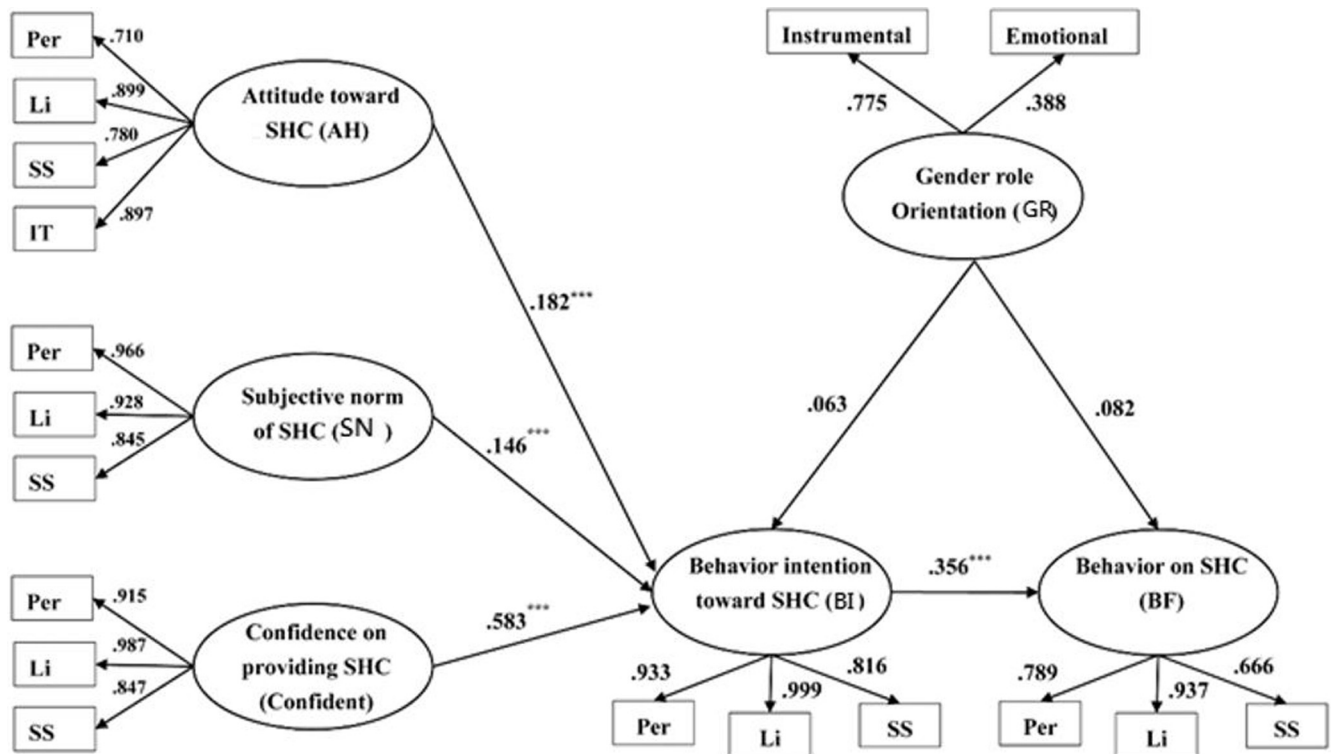
Figure 1. Standardized estimation of parameters in structure equation model. SHC, sexual health care. *$P < .05$, **$P < .01$, ***$P < .001$.

Hypothesis 3: A higher level of confidence about SHC (Confidence) will result in a stronger behavioral intention to provide SHC (IT).

Hypothesis 4: The gender role orientation (GR) has a direct effect on the behavioral intention to provide SHC (IT).

Hypothesis 5: The gender role orientation (GR) has a direct effect on the frequency of providing SHC (BF).

Hypothesis 6: The stronger behavioral intention of providing SHC (IT) will result in a higher frequency of providing SHC (BF).

In the past, literature on SHC was mostly focused to investigate the attitudes and behavioral intentions. However, there were no report addressing the relationship between gender role orientation and SHC. Gender role orientation has been documented to have an effect on caring behavior or critical thinking in nurses.[36] Therefore, this article is the first study to further incorporate gender role orientation into the intentions or behaviors of providing SHC. In this study, we hope to understand whether the gender role orientation has an impact on the provision of SHC, as a reference for future clinical education design to improve the capacity of SHC.

METHODS

Design and Participants

This cross-sectional study was approved by the institutional review board of our hospital, Taiwan (No. CS13138), and was

performed from August 2014 to July 2015. A total of 490 registered nurses were enrolled from a medical center in the central portion of Taiwan. All the participants were volunteers who gave informed consent. The survey questionnaire return rate was 96% (471/490), and all the questionnaires were entered into statistical analysis.

Measures

Our team developed the SHC survey scales for nurses, which included the number of valid and reliable instruments (ie, Nursing Attitude in Sexual Health Care [NASHC], Nursing Intervention in Sexual Health [NISH], and Gender Role Orientation scales). The instruments have been validated by psychometric analysis, and their reliability established. All the nurses participated anonymously and completed 3 questionnaires: NASHC scale, NISH scale, and Gender Role Orientation scale.[37,39–41] The gender role orientation scale was designed by Dr Wang based on the Bem Sex-Role Inventory (BSRI) scale.[36,37] Previous studies noted that Cronbach's alpha of the gender role orientation was >0.77.[36] NISH scale has 3 dimensions: permission (5 items), limited information (7 items), and specific suggestion (7 items). The Cronbach's alphas of NISHC was 0.96; these 3 dimensions explain 72.42% of the variance.[40] The NASHC scale has 4 dimensions: permission (4 items), limited information (5 items), specific suggestion (3 items), and intensive therapy (2 items). The Cronbach's alpha of NASHC was 0.85; these 4 dimensions explain 60.63% of the variance.[41] All 19 items of the NISH scale, 15 items of the NASHC scale, and 16 items of

Table 1. Demographic characteristics and professional data of the participants

Nurses' characteristics	n (%)
Gender	
Male	17 (3.6)
Female	454 (96.4)
Age (y)	30.95 ± 6.3
<25	122 (25.9)
25—35	238 (50.5)
>35	111 (23.6)
Religion	
Folk*	219 (46.5)
Western or other	28 (5.9)
No religious affiliation	224 (47.6)
Family status	
Single	161 (34.2)
Married	307 (65.2)
Divorced	3 (0.6)
Educational level	
Diploma	58 (12.3)
Bachelor	370 (78.6)
Master	43 (9.1)

*Folk refers to traditional Eastern religions such as Buddhism or Taoism.

gender role orientation demonstrated moderate-to-strong loading (>0.50) by exploratory factor analysis.

PLISSIT Model

The PLISSIT model was developed by Annon in the 1970s.[42] It is a model used for investigating sexuality with individuals and determining their problems. This model provides a 4-step approach to the sexual problems of the individuals. These steps included Per-Permission, LI-Limited Information, SS-Specific Suggestions, and IT-Intensive Treatment. In this study, the items of attitude toward SHC (AH) was classified into 4 groups (Per, LI, SS, and IT), items of subjective norm of SHC (SN) was classified into 3 groups (Per, LI, and SS), confidence on providing SHC (Confident) was classified into 3 groups (Per, LI, and SS), behavior intention toward SHC (IT) was classified into 3 groups (Per, LI, and SS), and behavior on SHC (BF) was classified into 3 groups (Per, LI, and SS). The association of each group and its corresponding variables (AH, SN, Confident, IT, and BF) was further analyzed.

Data Analysis

Data analysis was undertaken using IBM SPSS Statistics for Windows, version 22.0. (IBM Corp, Armonk, NY). Initially, descriptive statistics were used to calculate the proportion of categorical variables and mean with standard deviation for the continuous variables. A multivariate method was used to determine the empirical relationship among gender role orientation, nursing attitude toward SHC, and nursing interventions for SHC. Linear models were summarized by the weight of coefficients (β) with 95% confidence intervals.

Validity and Reliability

The SEM relationship mode path map was constructed, and data analysis was performed to determine whether the model had a good fit. If the pattern is well-adapted, further study of the research hypothesis is warranted. This study was validated using SEM, IBM SPSS Amos 22.0, and the Maximum Likelihood to estimate the causal relationship of the research model. The first step in the SEM analysis program involves confirmatory factor analysis (ie, measurement mode) to determine the research architecture model and develop a measurement mode with a good fit. The second step further analyzes the causal pattern to examine the causal relationship between potential changes and to examine the research hypotheses.

RESULTS

Participant Characteristics

A total of 471 nurses were enrolled in this study. The demographics for these nurses were summarized in Table 1. Among the participants, 122 nurses (25.9%) were younger than 25 years; 238 nurses (50.5%) were aged 25—35 years; and 111 nurses (23.6%) were older than 35 years. Most nurses (454) were female (96.4%). A total of 219 nurses (46.5%) held folk religious beliefs; 28 nurses (5.9%) had Western or other religious affiliations; and 224 nurses (47.6%) had no religious affiliation. Moreover, 307 nurses (65.2%) were married, and 370 nurses (78.6%) held a Bachelor's degree. In addition, the BSRI was created by Sandra Bem to measure androgyny, masculinity, or femininity, which is used to investigate the gender role orientation. Hence, we selected it to evaluate the scores of participants' gender role orientation. We have further observed the BSRI score in these nurses. As shown in Supplementary Table 1, the mean scores of masculinity and femininity in female nurses were 22.08 and 23.53, respectively. While the mean scores of masculinity and femininity in male nurses were 22.88 and 25.29, respectively. Although the mean scores of masculinity and femininity were higher in male nurses than in female nurses, it was not significant.

Fitting the Proposed Model

6 latent variables (ie, attitude, perceived control, confidence, behavioral intention, gender role orientation, and behavior) were included in the measurement model. Perceived control, confidence, behavioral intention, and behavior comprised 3 observed variables. Attitude and gender role orientation have 4 (Per, Li, SS, and IT) and 2 (instrumental and emotional) observed variables, respectively. Confirmatory factor analysis was used for testing the model. The fit of the proposed model was not optimal before modification ($\chi^2(123) = 656.29$ [$P < .001$], goodness of fit index [GFI] = 0.86, adjusted goodness of fit index [AGFI] = 0.81, root mean square error of approximation = 0.09, standardized root mean square residual [SRMR] = 0.08), indicating a lack of fit between the proposed model and the data. Based on model fit indices suggested, 2 error covariance between the confidence measurement model and

Table 2. Summary of the results for assessment index of model fit before and after modification

Assessment index for model fit	Criteria for assessment	Before		After	
		Value of index	Results of assessment	Value of index	Results of assessment
Absolute model fit indices					
P value of LR χ^2 test	$P > .05$	656.290***	-	476.122***	-
Df	–	124	-	122	-
Ratio of χ^2/df	≤ 5	5.293	Acceptable	3.903	Good
GFI	≥ 0.90	0.862	Acceptable	0.898	Acceptable
AGFI	≥ 0.90	0.810	Acceptable	0.858	Acceptable
SRMR	≤ 0.08	0.081	Acceptable	0.085	Acceptable
RMSEA	≤ 0.08	0.096	Acceptable	0.079	Good
Incremental model fit indices					
NFI	≥ 0.90	0.916	Good	0.939	Good
NNFI	≥ 0.90	0.915	Good	0.942	Good
RFI	≥ 0.90	0.897	Acceptable	0.924	Good
IFI	≥ 0.90	0.931	Good	0.954	Good
CFI	≥ 0.90	0.931	Good	0.954	Good
Parsimony model fit indices					
PGFI	≥ 0.50	0.625	Good	0.641	Good
PNFI	≥ 0.50	0.743	Good	0.749	Good
PCFI	≥ 0.50	0.754	Good	0.961	Good

AGFI = adjusted goodness of fit; CFI = comparative fit index; GFI = goodness of fit; IFI = incremental fit index; LR = likelihood ratio; NFI = normed fit index; NNFI = non-normed fit index; PCFI = parsimony comparative fit index; PGFI = parsimony goodness of fit index; PNFI = parsimony normed fit index; RFI = relative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.
*$P < .05$, **$P < .01$, ***$P < .001$.

behavioral intention measurement model, the data were modified 2 times: once for addition of covariance, then $\chi^2(123) = 555.79$, and again for correction of permission covariance, $\chi^2(122) = 476.12$ ($P < .001$). The final model fit data were listed in Table 2. Before the model correction, the 6 metrics of the χ^2 degrees of freedom ratio, GFI, AGFI, SRMR, root mean square error of approximation, and relative fit index did not reach threshold. After modification, the remaining 3 metrics failed (GFI = 0.898, AGFI = 0.858, SRMR = 0.085), but they were close to the threshold. The display model fit is still good, and the subsequent reliability and validity tests were continued. Hypotheses 1, 2, 3, and 6 were supported.

Constructing Validity and Reliability

The convergent validity is a parameter that refers to the degree to which 2 measures of constructs that theoretically should be related are in fact related. Table 3 shows that the standardized factor load of all observed variables and corresponding latent variables is between 0.623 and 0.999. Except for the load of the emotional factor of the gender role orientation (0.623), the rest of the observed variables are above the threshold of 0.70.[43,44] Although the emotional factor load is <0.70, it still achieves the practical significance proposed by Hair et al.[44] The construct reliability of latent variables ranges from 0.730 to 0.942, all meeting the requirements of ≥ 0.70.[44] The average variance extracted of latent variables is between 0.581 and 0.845. As the average variance of all factors exceeds 0.50, the latent variable is contributed to by the

observed variable more than the error.[45] Based on the aforementioned results, each scale demonstrated good convergent validity.

Examining the Structural Model

Table 4 presents the results of the structural model estimation to verify whether the research hypotheses are correct. The results show that 4 hypothesized effects on providing behaviors on SHC were supported through model estimation. The attitude on SHC ($\beta = 0.182$, $P < .001$), subjective norms on SHC ($\beta = 0.146$, $P < .001$), and confidence about SHC ($\beta = 0.583$, $P < .001$) had significant, direct effects on the behavioral intention to provide SHC. Subsequently, the behavioral intention to provide SHC had a significant, direct effect on the behavioral frequency of providing SHC ($\beta = 0.356$, $P < .001$). Therefore, hypotheses 1, 2, 3, and 6 were supported. However, gender role orientation is not significantly associated with behavioral intention ($\beta = 0.063$, $P > .05$) or behavioral frequency of providing SHC ($\beta = 0.082$, $P > .05$). Hypotheses 4 and 5 were not supported.

DISCUSSION

This cross-sectional study showed the distal and proximal relationship between gender orientation, behavior intention and frequency of providing SHC, attitude toward SHC, subjective norm of SHC, and confidence in providing SHC. A previous study has suggested that there is a relationship between gender role orientation and caring behavior.[36] Partial least squares SEM

Table 3. Summary of parameter estimation, reliability, and validity of the model fit

Latent variable	Observation items	Standardized factor loading	t	Reliability of individual items (R^2)	CR	AVE (%)
Attitude toward SHC (AH)	Per	0.710		0.505	0.894	0.681
	LI	0.899	18.347***	0.808		
	SS	0.780	16.113***	0.609		
	IT	0.897	18.320***	0.805		
Subjective norm of SHC (SN)	Per	0.966		0.934	0.939	0.836
	LI	0.928	38.616***	0.862		
	SS	0.845	29.425***	0.713		
Confidence on providing SHC (Confident)	Per	0.915		0.837	0.941	0.843
	LI	0.987	43.259***	0.974		
	SS	0.847	29.570***	0.717		
Behavior intention toward SHC (IT)	Per	0.933		0.870	0.942	0.845
	LI	0.999	52.024***	0.999		
	SS	0.816	28.478***	0.666		
Gender role orientation (GR)	Instrumental	0.880		0.775	0.730	0.581
	Emotional	0.623	13.771***	0.388		
Behavior on SHC (BF)	Per	0.888		0.789	0.922	0.797
	LI	0.968	31.076***	0.937		
	SS	0.816	23.947***	0.666		

AH = attitude toward SHC; AVE = average variance extracted; CR = construct reliability; SHC = sexual health care.
*P < .05, **P < .01, ***P < .001.

and generalized linear models were stratified by the gender role orientation of student nurses following the recommendations of Liu et al,[36] which confirmed the effects of age, gender role, and caring behavior on critical thinking. This study recommended that the cultivation of nursing care behavior should focus on students' gender role orientations. In addition, clinical nurse educators should consider their own gender role orientations when working with male students to best support the development of male nursing students' methods for presenting caring behavior. The present study expanded on these findings using a structural equation mode to show that gender role orientation is not associated with SHC in Taiwanese nurses. This is the first study that investigated the relationship between the behavioral intention of SHC and gender role orientation by clinical nurses. Gender role orientation is not significantly associated with

behavioral intention and frequency of SHC in the final model. Despite this, we did not observe the direct relationship between gender role orientation and behavioral intention for SHC behaviors. However, the final model demonstrated our hypothesis 1, 2, 3, and 6, suggesting that a higher level of attitude toward SHC, subjective norms on SHC, and confidence about SHC would result in a stronger intention of providing SHC, and the stronger behavioral intention of providing SHC would result in a higher frequency of providing SHC. In addition, the effect of gender role orientation in the examined model cannot be completely excluded because gender role orientation may be related to attitudes, subjective norms, and confidence regarding SHC. Our data exhibited that attitudes, subjective norms, and confidence providing SHC were significantly associated with behavior intention of providing SHC in these nurses.

Table 4. Parameter estimation of the direct effect analysis in the structure equation model

No. of hypothesis	Route of path	Unstandardized coefficients	Standard error	t	Standardized coefficients	P value	Assessment of hypothesis
H1	AH→IT	0.477	0.099	4.795***	0.182	<.001	True
H2	SN→IT	0.261	0.063	4.124***	0.146	<.001	True
H3	Confident→IT	0.607	0.038	15.770***	0.583	<.001	True
H4	GR→IT	0.171	0.097	1.760	0.063	.078	False
H5	GR→BF	0.108	0.067	1.613	0.082	.107	False
H6	IT→BF	0.174	0.023	7.631***	0.356	<.001	True

AH = attitude toward SHC; BF = behavior on SHC; Confident = confidence on providing SHC; GR = gender role orientation; IT = behavior intention toward SHC; SHC = sexual health care; SN = subjective norm of SHC.
*P < .05, **P < .01, ***P < .001.

Consequently, there is an indirect relationship between gender role orientation and behavioral intention for SHC behaviors. Further investigation for this indirect association of gender role orientation and behavioral intention for SHC behaviors is warranted.

Scales to measure attitudes regarding SHC for patients have been designed and include questions about sexual health and comfort; however, nurses' attitudes may be different toward specific SHC behaviors. In this study, the fit of the hypothetical model was determined, and the data were collected. The questionnaire about attitude, subjective norms, and confidence about SHC is based on the PLISSIT.[46] PLISSIT is a model used for investigating sexuality with individuals and determining their problems, which provided a 4-step approach to the sexual problems of the individuals. These steps included Per-permission, LI-limited information, SS-specific suggestions, and IT-intensive treatment. An item is specific to a certain intervention of SHC. With its graded levels, the PLISSIT model provides a set of hierarchical patterns of SHC that were used to understand nurses' behaviors regarding the provision of SHC and the impact of gender role orientation. The data were consistent with previous reports that stated SHC is complex and is associated with a hierarchical level.[41,47] The attitude, subjective norms, and confidence were related to behavioral intention, and attitude and subjective norms were significantly related with provision of SHC.[20,48] Similarly, data from this study confirmed that the attitude, subjective norms, and confidence about SHC were significantly related to the behavioral intention of SHC. Interestingly, the present study expanded these findings and further showed that the behavioral intention of providing SHC was significantly associated with the frequency of providing SHC.

In the present study, the construct reliability of the latent variable complied with the standard of ≥ 0.70.[44] This result shows that the internal consistency of the construction indicators is appropriate. These scales were designed by the author in 2012 based on the PLISSIT model. The reliability of the latent variables of attitude, behavioral intention, and behaviors of provision of SHC were consistent with those of previous studies.[40,41] The scales of subjective norms, confidence about SHC, and gender role orientation were first validated in the present study. The highlights of this study are the scales of subjective norms, and confidence about SHC confirms the content of the PLISSIT-based staged levels to provide SHC in clinical practice. According to the theory of planned behavior, attitudes, subjective norms, and perceptions of behavioral control are assumed to formulate behavioral intentions.[20] These scales convey the characteristics of the hierarchy on PLISSIT-based SHC and correspond to the theory of planned behavior. Our PLISSIT-based SHC model may guide nurses in providing SHC and solving sexual problems of patients. If confirmed from other studies, our findings could have implications for the training of nurses' educations and graduates.

Gender roles in Taiwanese society constrain the professional growth of nursing and caring behavior.[36,49] SHC is a private and sensitive issue, and the impact of gender role orientation toward nurses that provide SHC has not been discussed. This is the first study to incorporate gender role orientation into a model about the provision of SHC. Sexual health issues involve physical, psychological, social, and cultural factors. The traditional Confucianism and Taoism culture in the Eastern society believes discussion of sexuality to be taboo. Nursing is a female-dominated profession, and women are encouraged to adopt passive, acceptable roles. Past SHC-related research found that only 22% of caregivers discussed sexual health issues with their patients.[50] Taiwan began to actively promote gender mainstreaming in 2005, and nursing education began to incorporate concepts related to sexuality. Although the gender role is an important predictor of care behavior, the research on gender role orientation as a variable to discuss SHC issues is very limited. In the present model, gender role orientation has not had significant effects on behavioral intention and behavior frequency toward SHC (hypotheses 4 and 5). This result could be related to the fact that nurses might have to put aside their own personal beliefs to proactively discuss negative side effects of a disease or treatment that affects sexual heath.[12]

In the theory of planned behavior, attitudes, subjective norms, and perceptions of behavioral control are assumed to formulate behavioral intentions.[20] The attitudes and subjective norm would influence the behavioral intention and subsequently influence the frequency of behavioral intention. In this study, we proposed SEM model based on a theory of planned behavior, consequently, we not only make hypotheses about the relationship between the confidence, subjective norms, attitudes, and behavioral intention to provide SHC but also make hypotheses about the relationship between behavioral intention and frequency of providing SHC. The present study further validated the theory of planned behavior, suggesting that this theory is also appropriate to investigate the relationship between attitudes, sujective norms, confidences, behavioral intention, and frequency of providing SHC in nurses.

A study compared attitudes toward homosexual and transgender individuals between gender dysphoric individuals, general population controls, and health-care providers (HCPs).[51] Their results revealed that men showed higher levels of homophobia and transphobia than women. Moreover, perceived discrimination was higher in lesbian women than in gay men and in transwomen than in transmen. However, to date, few studies have addressed attitudes toward transgender individuals. In addition, little is known about HCP attitudes toward sexual minorities, and whether HCP's sexual orientation further affects their SHC for sexual minorities. The present study aims to investigate whether the gender role orientation associated with SHC in nurses. Hence, we have not collected the information for sexual orientation of these participants. Certainly, whether homophobia or transphobia associated with SHC in nurse merits further investigation.

Several limitations of this study must be acknowledged. All patients were in a single medical center in Taiwan, and results

may not be generalized to other populations or geographic areas. Subjective norms were only evaluated for nurses. The subjective norms from colleagues and the institutional culture may exert some influence and should be explored further. Evaluation of the effects from continued SHC education given to clinical nurses should also be performed.

In conclusion, there was a good fit for the structural equation model, suggesting that the predictors of intention and behaviors toward providing SHC include attitude, subjective norms, and perceived control. A stronger behavioral intention to provide SHC results in a higher frequency of providing SHC. However, the relationship between gender role orientation and SHC has no significant effect in the model validation. This result may encourage the establishment of a gender-equal workplace environment and help nurses understand the impact of gender role orientation. Additional focus on designing continuing education related to "sexuality and illness" could improve caregiver awareness for sexual health issues.

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Corresponding Author: Li-Ya Tsai, RN, PhD, School of Nursing, Chung Shan Medical University, No. 110 Sec.1, Chien-Kuo N. Road, Taichung 402, Taiwan. Tel: 886-4-2473-0022 ext.12216; Fax: 886-4-2423-8137; E-mail: celine@csmu.edu.tw

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STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design
Cheng-Yi Huang; Li-Ya Tsai
(b) Acquisition of Data
Chiou-Fang Liou; Shu-Hsin Lee
(c) Analysis and Interpretation of Data
Cheng-Yi Huang; Li-Ya Tsai; Chiou-Fang Liou

Category 2

(a) Drafting the Article
Cheng-Yi Huang
(b) Revising It for Intellectual Content
Li-Ya Tsai; Chiou-Fang Liou

Category 3

(a) Final Approval of the Completed Article
Cheng-Yi Huang; Li-Ya Tsai; Chiou-Fang Liou; Shu-Hsin Lee

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SUPPLEMENTARY DATA

Supplementary data related to this article can be found at https://doi.org/10.1016/j.esxm.2020.03.006.