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ORIGINAL ARTICLE

Moral competence questionnaire for public health nurses in Japan: Scale development and psychometric validation

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Abstract

Aim: To develop a valid and reliable self-assessment questionnaire that can be easily used by public health nurses in Japan to measure their moral competence.

Methods: A self-administered questionnaire that included the preliminary Moral Competence Questionnaire for Public Health Nurses and demographics was distributed to public health nurses who worked at local governments in Japan.

Results: Exploratory factor analysis for the Moral Competence Questionnaire for Public Health Nurses from 3493 responses (31.9%) revealed 15 items loading on three factors: (1i) judgment based on the values of community members; (ii) strong will to face difficult situations; and (iii) cooperating with relevant people/organizations. Confirmatory factor analysis indicated that this model has a reasonable fit to the data. Cronbach's alphas ranged 0.85–0.91.

Conclusion: The construct validity and internal consistency reliability of the Moral Competence Questionnaire for Public Health Nurses were supported. This questionnaire reflected the characteristics of Japan's public health nursing practice and it may be used to assess current moral practice and need for continuing education. However, this questionnaire needs additional internal validity testing and possible item development. Additional research is needed to refine this scale and increase the possibility of generalizability.

Key words: instrument development, moral competence, public health nurse, self-assessment.

INTRODUCTION

Nursing competence required for effective performance in nursing practice has been mainly defined as an integrated set of knowledge, skills, traits, and attitudes (Cowan, Wilson-Barnett, Norman, & Murrells, 2008; Dellai, Mortari, & Meretoja, 2009; Takahashi, Teraoka, Miyakoshi, & Kawada, 2011; Zhang, Luk, Arthur, & Wong, 2001). Tools measuring nursing technical competence have been developed (Cowan *et al.*, 2008; Dellai *et al.*, 2009; Meretoja, Isoaho, & Leino-Kilpi, 2004; Norman, Watson, Murrells, Calman, & Redfern, 2002). Even though Fry and Johnstone (2008) acknowledged the importance of ethical practice in producing quality care and moral competence has been described as one of the professional components (Paganini & Egry, 2011; Taylor, 1995), a scale to measure nurses' moral competence, particularly that of public health nurses (PHN), has not been developed.

There are moral competence scales in use. Kohlberg (1964, p. 425) defined moral judgment competence as "the capacity to make decisions and judgments which are moral (i.e. based on internal principles) and to act in accordance with such judgments". Colby *et al.* (1987) developed the Moral Judgment Interview (MJI) and Lind (2012) developed the Moral Judgment Test (MJT) to measure moral judgment/reasoning based on Kohlberg's theory of moral development. The characteristics of these measurements contain moral tasks for participants. Similarly, based on Kohlberg's theory, Rest (1994) developed the Defining Issues Test (DIT) which is a multiple-choice, self-administered tool. The MJI and the DIT have been mainly utilized

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in nursing studies (Numminen & Leino-Kilpi, 2007; Parker, 1990). However, the results of nursing studies using these tools indicated that nurses and nursing students had consistently lower than expected levels of moral reasoning (Duckett *et al*., 1992). Further, the results of relationships among the variables of moral judgment, education level, and ethical behavior for nurses or nursing students were unclear (Ham, 2004; Ketefian, 1989; Numminen & Leino-Kilpi, 2007; Parker, 1990). Namely, some studies found significant relationships among the variables, while others did not. In response, many nursing researchers criticized Kohlberg's theory that focused on a justice conception of morality, which is used more frequently by men and does not reflect women's pattern of ethical thought, still the sex of most nurses (Cassidy, 1996; Ketefian, 1989; Numminen & Leino-Kilpi, 2007; Parker, 1990). These authors suggested that Gilligan's sex-related theory (Gilligan, 1982) be considered and, consequently, use of MJI and DIT has declined in nursing research.

In assessing nurse competence, it is important to consider the context within which it is to be used (Jormsri, Kunaviktikul, Ketefian, & Chaowalit, 2005; McCready, 2007). This is especially important for moral competence; assessment should reflect the actual behavior of nurses in ethical situations (Cassidy, 1996). Although there are a few tools that measure moral judgment in nursing situations, they do not focus on specific nursing areas and thus have been criticized for their abstractness, unreliability, and invalidity (Numminen & Leino-Kilpi, 2007). PHN, in particular, have clinical features that influence and challenge their moral behavior. PHN develop close relationships with individuals and families as they care for them, while simultaneously providing services to community groups or community members (Canadian Nurses Association, 2006). Therefore, it is not unusual for PHN to encounter not only ethical conflicts with clients and families, but also ethical difficulties related to resource allocation and conflicts between choices based on individual versus community members' needs (Asahara, *et al*., 2012; Horstman & Rens-Leenaarts, 2002; Oberle & Tenove, 2000). Notably, Japanese PHN who work at local governmental units faced differences in views from administrators about providing services (Asahara *et al*., 2012). Thus, PHN must increase their moral competence to deal with such ethical issues that are specific to public health nursing settings. Besides, Gastmans (1999) indicated that care should be considered as a moral attitude in a nursing context.

It has been reported that self-assessment of nurse competence in practice allows nurses to reflect and improve their practice, and to find their own learning needs (Cowan *et al*., 2008; Dellai *et al*., 2009; Meretoja *et al*., 2004; Norman *et al*., 2002). Therefore, the development of a moral competence self-assessment questionnaire for PHN that is easy to use in practice would add an important dimension to nurses' continued efforts to reflect and improve their practice. The purpose of this study was to develop a valid and reliable moral competence self-assessment questionnaire for PHN that is easy to use in practice.

METHODS

Sample and data collection procedures

This quantitative descriptive study was a cross-sectional survey and part of a larger study of ethical practices of PHN. Surveyed were all public health units in Japan administered by local governmental prefectures (comparable to counties) and municipalities (comparable to cities and towns). A total of 10 965 questionnaires (five questionnaires to each of the 2193 local government public health units) were distributed to PHN in 2009.

A cover letter indicated the purposes and procedures of the study and the option to refuse participation. Return of the anonymous coded questionnaire was considered as the respondents' consent to participate. Only one mailing was performed. Prior to conducting the survey, the authors obtained ethical approval from the research ethics committee of the first author's institution.

The questionnaire in the larger study (Asahara, *et al*., 2012) included 149 forced choice and eight open-ended questions resulting in six sections: (i) frequency of encountering ethical issues; (ii) moral competence; (iii) experiences influencing the decisions of PHN in practice; (iv) experiences with ethics education; (v) workplace environment related to ethical practices; and (vi) demographic data. This study focused on sections (ii) and (vi).

Measures

Moral competence questionnaire for public health nurses

Jormsri *et al*. (2005) defined the concept of moral competence within the context of the Thai culture and nursing practice as the ability or capacity of persons to recognize their feelings as they influence what is good or

Table 1 Demographic data of previous studies

	N	%	N	%
Characteristics	Survey ($n = 66$)		Interview ($n = 8$)	
Age	Mean 46.2 (SD = 7.6) years		Mean 35.5 (SD = 9.1) years	
Work experience	Mean 22.0 (SD = 8.5) years		Mean 9.3 (SD = 10.4) years	
Type of local government				
Prefecture	17	25.8	1	12.5
Municipality	44	66.7	7	87.5
Other	5	7.6	0	0.0
Current position				
Staff	15	22.7	6	75.0
Managerial level	51	77.3	2	25.0

SD, standard deviation.

bad in particular situations, and then to reflect on these feelings to make their decision and to act in ways that bring about the highest level of benefit for patients. According to Jormsri *et al.* (2005), moral competence is seen as a combination of three dimensions: (i) moral perception; (ii) moral judgment; and (iii) moral behavior. Rest (1994) described that the MJI and the DIT focused on competence of moral judgment only and he indicated that moral behavior was formulated by four psychological components – moral sensitivity, moral judgment, moral motivation, and moral character – and was enacted through these psychological processes. Therefore, the present authors felt that the Four Component Model for determining moral behavior described by Rest (1994) was more useful for development of the Moral Competence Questionnaire for Public Health Nurses (MCQ-PHN). Duckett and Ryden (1994) added "implementing the moral decision" as a fifth component of Rest's Four Component Model because moral behavior did not occur only as a result of psychological processes, it also involved an interpersonal process; in addition, individuals must execute the moral decisions to which they have committed. Therefore, to develop the MCQ-PHN, the authors defined the moral competence of PHN as: the ability or capacities to perceive or recognize ethical situations, to judge action, and to act in ways that bring about the optimal good for their subjects. The authors identified five theoretical components of moral competence: (i) moral sensitivity (interpreting the situation); (ii) moral judgment (judging which action is morally right/wrong); (iii) moral motivation (prioritizing moral values relative to other values); (iv) moral character (having courage, persisting, overcoming distractions, implementing skills); and (v) implementing the moral decision (executing the moral decisions to which individuals have committed).

Specific items were pooled based on existing published work (Baum, Gollust, Goold, & Jacobson, 2009; Folmar, Coughlin, Bessinger, & Sacknoff, 1997; Horstman & Rens-Leenaarts, 2002; Oberle & Tenove, 2000) and the current authors' previous studies (Miyazaki *et al.*, 2006; Momose *et al.*, 2006; Omori *et al.*, 2007). The qualitative data from an open-ended survey (Omori *et al.*, 2007) questioning 66 PHN and interviews (Miyazaki *et al.*, 2006; Momose *et al.*, 2006) with eight PHN were used (Table 1). Survey respondents and interview participants were asked questions such as: "Have you had conflicting experiences in judging good or bad, right or wrong, or duties or rights in your everyday practice?", "Please describe the details or cases that stood out most recently", and "What did you do at that time?" The content analysis was performed based on the five theoretical components of moral competence. As a result, 96 items were extracted for the preliminary MCQ-PHN. The items were moral sensitivity (25 items), moral judgment (30 items), moral motivation (eight items), moral character (nine items), and implementing the moral decision (24 items). In the questionnaire, the authors ordered five categories according to the above order. The organizing principle for items within a category that included terms expressing the subject of PHN, were ordered from individual and family (C/F) to community members or organization in each category. The remaining items were not organized based on any schema. Regarding moral sensitivity, moral judgment, moral motivation, and implementing the moral decision, respondents were asked to rate their responses using a 5 point Likert scale (1 = "I'm aware of this not at all", 2 = "I'm not aware of this so much", 3 = "I'm uncertain", 4 = "I'm somewhat aware of this", 5 = "I'm strongly aware of this"). For moral character, respondents were asked to rate their responses with the

following 5 point Likert scale: 1 = "strongly disagree", 2 = "somewhat disagree", 3 = "uncertain", 4 = "somewhat agree", and 5 = "strongly agree". The authors did not reverse any item responses because they wanted an easy to answer and score questionnaire that would be simple for PHN to use in their daily practice. A higher score indicated a tendency toward a higher moral competence. Seven judges, including PHN, researchers, and PHN graduate students, established content and face validity.

Demographic data

Demographic measures included age, sex, type of nursing school from which a PHN education was obtained, duration of work experience as a PHN, type of local government where they worked, and current position.

Data analysis

Initially, descriptive statistics were analyzed. Subsequently, after checking response bias of items by ceiling and floor effect, and Pearson correlation coefficient, an exploratory factor analysis (EFA) was conducted to find possible factor structures, and then confirmatory factor analysis (CFA) was conducted to determine the factor structure. For internal consistency reliability, Cronbach's alpha was calculated for each factor. SPSS Statistics version 17.0 (SPSS, Chicago, IL, USA) was used to calculate descriptive statistics and to conduct the EFA. The CFA was performed with the structural equation modeling program SPSS Analysis of Moment Structures (SPSS Amos, Chicago, IL, USA) version 17.0.

RESULTS

Respondent characteristics

A total of 3493 questionnaires were returned (31.9% response rate) and usable data were obtained from 3409 (31.1%). The respondents were primarily women (98.0%) and their mean age was 37.6 years (standard deviation [SD] = 10.2) (Table 2). The majority of the respondents received their PHN education from 1 year programs after graduating from either 3 year technical nursing schools (62.9%) or junior colleges (11.4%), while others received their PHN education within 4 year universities or colleges (25.3%). The mean duration of work experience as a PHN was 13.7 years (SD = 10.3). The majority of the respondents worked at municipalities (77.5%), while 22.4% worked at the prefectural government level. Staff and managerial level were equally divided. The respondents of this survey were similar to the Japanese community members of PHN in terms of age, sex, and the type of local government where they worked (Ministry of Health, Labor and Welfare, 2009).

Table 2 Demographic data of the present study (n = 3409)

Characteristics	N	%
Sex		
Female	3342	98.0
Male	65	1.9
Age, mean 37.6 (SD = 10.2) years		
Type of nursing school from which public health nurse education was obtained		
Technical nursing school	2144	62.9
Junior college	389	11.4
University or college	864	25.3
Work experience as a public health nurse, mean 13.7 (SD = 10.3) years		
<1 year	166	4.9
1–5 years	824	24.2
6–9 years	664	19.5
≥10 years	1755	51.5
Type of local government		
Prefecture	764	22.4
Municipality	2642	77.5
Current position		
Staff	1730	50.7
Assistant managerial level	682	20.0
Managerial level	943	27.7

SD, standard deviation.

Development of the MCQ-PHN

The 96 items of the preliminary MCQ-PHN were refined first by checking biased response distribution of items. Two criteria were used to delete items: (i) item scores of 4.5 or more or 1.5 or less; and (ii) correlation coefficients of 0.8 or more in the item correlation matrix. Thirteen items were eliminated because 12 item scores were 4.5 or more and one item correlation was 0.8 or more. The resulting 83 items were retained.

Next, the EFA with maximum-likelihood factor analysis and promax rotation was used. Three criteria were used in selecting the number of factors: (i) a scree plot that showed a distinct break between the steep slope of the large factors and a gradual trailing of the remaining factors; (ii) a Cronbach's alpha of 0.70 or more; and (iii) a possibility of factor interpretation. Three criteria were used in selecting the number of items within a factor: (i) an item-factor loading of 0.4 or more;

(ii) all items with higher loading on one factor; and (iii) the difference between primary and secondary loading for an item was more than 0.15. Following that, the CFA was conducted. Because the χ^2-test becomes inflated when the sample size is large, the authors followed Yuan and Bentler's (2007) recommendation of using the alternative fit indices: comparative fit index (CFI) and the root mean square error of approximation (RMSEA) to assess the model fit. Yuan and Bentler's (2007) recommended criteria for these indices, which implied a good fit was a CFI of more than 0.95 or an RMSEA of less than 0.05.

As the result of the EFA, 40 of the 83 items were eliminated, leaving 43 items. Although the authors performed the EFA many times changing the number of factors and then conducted the CFA using these models, the authors did not achieve satisfactory values for the CFI or the RMSEA. Therefore, the authors employed an item-factor loading of 0.6 or more as a criterion, and then the authors conducted the EFA again. Consequently, the authors retained 23 of the original 83 items. A three factor model emerged and was selected as the most interpretable solution. However, this preliminary MCQ-PHN consisted of similar items in a factor such as "I make decisions in consideration of what the family wants to do" and "I make decisions in consideration of what the community members want to do". Therefore, the authors needed to select items carefully as the authors wanted this self-assessment questionnaire to be easy to use in daily practice.

Thus, eight of the 23 items were eliminated, leaving 15 items that loaded on the three factors (Table 3). Factor 1 consisted of five items drawn from the theoretical component of moral competence related to "moral judgment". This factor included items such as "I make decisions in consideration of what the community members want to do" and "I make decisions in consideration of what is best for the community members". Therefore, the authors named factor 1 "judgment based on the values of community members". Factor 2 con-

Table 3 Exploratory factor analysis ($n = 3409$)

	Factor		
	1	2	3
Factor 1. Judgment based on the values of community members ($\alpha = 0.89$)			
1 "I make decisions in consideration of what the community members want to do"	**0.90**	–0.02	–0.01
2 "I make decisions in consideration of what is best for the community members"	**0.90**	–0.02	–0.03
3 "I make decisions in consideration of what the community members place importance"	**0.88**	–0.02	–0.01
4 "I make decisions with priority on the thoughts and values of the community members"	**0.74**	0.03	0.00
5 "I decide whether my care is appropriate for the community members"	**0.64**	0.05	0.09
Factor 2. Strong will to face difficult situations ($\alpha = 0.91$)			
6 "I have the strength of will not to be defeated by direct problems or opposition"	–0.02	**0.91**	–0.03
7 "I have the courage to directly face problems or opposition"	–0.01	**0.86**	–0.01
8 "I have the dogged persistence to directly face problems or opposition"	–0.05	**0.81**	0.01
9 "I can convey my views frankly without faltering in front of any person"	0.04	**0.74**	–0.05
10 "I have a strong sense of responsibility"	0.04	**0.63**	0.06
Factor 3. Cooperating with relevant people/organizations ($\alpha = 0.85$)			
11 "I practice discussing with related people/organizations"	–0.04	–0.03	**0.89**
12 "I seek objective views from relevant people/organizations to verify the properness of my own judgment and care"	0.02	0.06	**0.74**
13 "I provide care in consultation with more experienced nurses and colleagues in the workplace"	–0.05	–0.14	**0.74**
14 "I practice reporting to and consulting with manager and supervisor, and then provide care based on judgment of organization"	0.05	0.02	**0.63**
15 "I practice sharing policies and information between related people/organizations"	0.08	0.12	**0.63**
Factor contribution	5.23	2.36	1.69
Correlations among factors			
1	1	0.29	0.44
2		1	0.32
3			1

Factor loadings >0.6 are boldface.

sisted of five items drawn from the theoretical component of moral competence related to "moral character". This factor included items such as "I have the strength of will not to be defeated by direct problems or opposition" and "I have the courage to directly face problems or opposition". Therefore, the authors named factor 2 "strong will to face difficult situations". Factor 3 also consisted of five items drawn from the theoretical component of moral competence related to "implementing the moral decision". Examples of items are "I practice discussing with related people/organizations" and "I seek objective views from relevant people/organizations to verify the properness of my own judgment and care". Therefore, the authors named factor 3 "cooperating with relevant people/organizations".

These three factors found using the EFA corresponded to three theoretical components of moral competence. However, the items of "moral sensitivity" and "moral motivation" had been deleted. Three factor contribution scores ranged 1.69–5.23. Correlations among factors ranged 0.29–0.44. As the internal consistency reliability, Cronbach's alphas ranged 0.85–0.91 (Table 3).

This model was then subjected to the CFA with maximum likelihood estimation. The CFI was good at 0.959, and the RMSEA was acceptable at 0.064, with a 90% confidence interval of 0.061–0.067, although the results of this study indicated the RMSEA did not meet the current authors' more stringent criterion. Yuan and Bentler (2007) indicated that fit indices may depend on many factors. Therefore, the present authors determined that the three factor model reasonably fit the data.

DISCUSSION

MCQ-PHN

The EFA identified a three factor model from the MCQ-PHN and indicated a reasonable fit to the data as a result of the CFA. Also, the MCQ-PHN showed satisfactory reliability with this sample. Therefore, the construct validity and internal consistency reliability of the MCQ-PHN were supported.

As the theoretical component of moral competence related to moral judgment, the authors found a factor "judgment based on the value of community members". However, the authors did not find a factor that indicated the theoretical component of moral competence related to "moral sensitivity". In a previous study (Asahara, Ono, Kobayashi, Omori, & Todome, 2013) that developed a tool to measure the moral competence for home-care nurses, the authors found a factor that indicated moral sensitivity called "a discrepancy of intentions among nurse, C/F, or related people/organizations". It seemed that this result was associated with the characteristics of PHN practice. In home-care nursing practice, particular nursing care or treatments are provided to specific C/F based on the contract between C/F and the home-care agencies to which nurses belong. Therefore, ethical issues like a discrepancy of intentions among nurse, C/F or related people/professionals about their particular nursing care are visible for home-care nurses and nurses have to recognize them to provide effective nursing care. On the other hand, PHN provide preventive care to C/F such as assessment of potential problems, and prevention of appearance or growth of those problems with no contract between C/F and PHN. Therefore, the nursing problems, nursing care, and related ethical issues are invisible and changeable depending on the context. As other researchers have also noticed, PHN have to continually balance risks and benefits to achieve the greatest good for C/F while maintaining their relationships with them (Horstman & Rens-Leenaarts, 2002; Oberle & Tenove, 2000). For example, a PHN considered if taking action to protect a child who was suspected of being abused would jeopardize relations with the parent thus increasing the danger to the child if the parent rejected the PHN action. Furthermore, because various relevant people/professionals may be involved in such cases, many ethical issues may coexist. Therefore, it seems that PHN want to understand the thoughts and values of the C/F in the actual situation rather than to recognize a discrepancy of intention between nurse and C/F or relevant people/professionals regarding a particular nursing care. Because one of the characteristics of PHN practice is providing services to community groups or community members it can be difficult recognizing individual discrepancies among groups and community members. Rather, PHN have a responsibility to ensure and distribute resources appropriately to people in need (Oberle & Tenove, 2000); thus, it is important "to understand the thoughts and values of the community members". Based on the characteristics of PHN practice, the specific factor "moral sensitivity" was not found but emerged in nurses' judgments that brought about the optimized good for their clients as their precondition.

As the theoretical component of moral competence related to moral character, the authors found the factor "strong will to face difficult situations", however, the authors did not find a factor that indicated the theoretical component of moral competence related to "moral motivation". It seems that moral motivation was integrated into moral character because moral motivation

may stem from and reflect moral character. To implement the moral decision in a morally difficult situation, strong will is needed. Therefore, this factor was found as one of the components of moral competence.

As the theoretical component of moral competence related to "implementing the moral decision", the authors found a factor "cooperating with relevant people/organizations". Because PHN interact with many other professionals from separate organizations, ethical issues such as conflict between PHN and other professionals have been reported (Oberle & Tenove, 2000). In Japan, 70% of PHN work at local government and they may have differences with administrative affairs officials regarding provision of services thus creating ethical issues (Asahara *et al.*, 2012).

Therefore, it seems that factor 3 was found as a PHN pattern of behavior to "implementing the moral decision".

Implication for public health nursing practice

The MCQ-PHN contained 15 items that loaded on three factors. This is a self-assessment questionnaire that measures the moral competence of PHN in terms of their attitudes and actions. The MCQ-PHN is compact and easy to use in daily practice for PHN. The use of critical reflection through self-assessment was supported (Brunt, 2002) and Way (2002) suggested that self-reflection is fundamental in demonstrating competence and evaluating performance. Therefore, it gives PHN points of moral attitude and also opportunity to reflect on and improve their practice. Because only 11.1% of respondents received ethics education through continuing education programs in the workplace (Asahara *et al.*, 2012), Japanese PHN may not be familiar with ethics pertaining to public health nursing. The MCQ-PHN may be useful as both an assessment of, and need for, continuing education.

Limitations of the study and future research

While the 31.9% response rate is acceptable for this type of study, there may be several reasons why it was not larger. First, questionnaires were sent at the end of the fiscal year and PHN were asked to return them near the beginning of the next fiscal year. Therefore, it is possible that many could not complete the questionnaire because they were busy at that time or did not receive the questionnaire due to a transfer to another section. The second limitation was that no reminders were sent. Third, the authors mailed the five questionnaires to the office of each local government and then distributed to PHN. Because the mean number of PHN of municipalities with less than 10 000 community members was 3.9 (Japanese Public Health Association, 2010), many municipalities did not have the five PHN who could respond to the questionnaires. Therefore, it may be presumed that the actual response rate may be higher than it appears. However, the 3400 respondents reflected the Japanese PHN in terms of demographics. Furthermore, this study was the first nationwide survey to determine moral competence by PHN in Japan.

Another limitation was the absence of an estimated criterion-related validity of the MCQ-PHN. Messick (1989) indicated the importance of construct validity, namely, that the roles of specific content-related and criterion-related evidence are subsidiary to construct validity. Therefore, it may be presumed that while the validity of the MCQ-PHN was indeed supported, further research is needed to refine this questionnaire by means of estimating its criterion-related validity for developing a useful scale. In addition, the authors did not conduct a survey to develop the original questionnaire. Furthermore, this questionnaire did not have reversed items or items that checked the participants' answers for bias due to social desirability. These issues might have influenced the results.

Further research is needed to refine this questionnaire to increase the possibility of generalizability. In addition, research is needed to verify if the MCQ-PHN can measure the moral competence of PHN not only in Japan but also in other countries. From this, common traits of moral competence for PHN among various countries would be revealed, and differences noted in each country. In addition, this questionnaire may be expected to promote research concerning moral practice and the evaluation of continuing education for PHN worldwide. Furthermore, the authors would like to examine relationships among moral competence, moral character, and actual behavior in future research.

CONCLUSIONS

The construct validity and internal consistency reliability of the MCQ-PHN were supported. This questionnaire indicated the characteristics of public health nursing practice and it may be used in practice and for continuing education. However, the questionnaire needs additional psychometric testing to establish the full range of validity and items. Further research is needed to refine this scale to increase the possibility of generalization.

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CONFLICT OF INTEREST

The authors declare that there is no financial support or relationships that may pose conflict interest.

AUTHOR CONTRIBUTION

K. A., M. K., and W. O. contributed to the conception, design of this study, statistical analysis, and drafted the manuscript. All authors read and approved the final manuscript.

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