

# Translation, adaptation, and validation of the Filipino version of the Caring Behaviors Inventory

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## Abstract

**Background:** The way patients perceive nurses' caring behaviors can potentially impact patient outcomes and satisfaction. Studies have revealed incongruence between nurses' and patients' perceptions with regard to which behaviors are considered caring.

**Objective:** This study aimed to conduct a cross-cultural validation and evaluation of the psychometric properties of the Caring Behaviors Inventory (CBI-16), a self-report questionnaire, from English to Filipino.

**Methods:** A descriptive cross-sectional design involving forward and back-translation with bilingual translators, expert validation, and a survey in a sample of patients and nurses was used. The psychometric evaluation used a sample of 142 staff nurses and 180 hospitalized patients. Exploratory factor analysis, internal consistency reliability, and inferential statistics were used for data analysis.

**Results:** The Filipino version of the CBI-16 (CBI-16-FIL) had excellent internal consistency (Cronbach's alpha of 0.95) and a unidimensional factor structure (accounted for 85% of total variance). The CBI-16-FIL was found to be a valid, reliable, and unidimensional tool to measure the perceptions of nurse caring behaviors in the Philippines.

**Conclusion:** The CBI-16-FIL can be used to measure perceptions of nurse caring behaviors. There is a need for further studies involving other cultures, dyadic samples of nurses and patients, and larger sample sizes.

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## Keywords

cultural issues; nurse-patient interaction; CBI; Caring Behaviors Inventory; instrument validation; Philippines

## Background

The ability of nurses to define the parameters of their function is crucial in the modern era of health care to guarantee that these definitions align with the perspectives of the receivers of care (Papastavrou et al., 2011). Caring has always been considered the core and essence of nursing (Li & Kongsuwan, 2021). However, it is a highly subjective and complex concept. It has been investigated for decades, but no definitive definition has been found. Examining caring behaviors is one technique to explore the concept. Caring behaviors refer to the professional actions of nurses concerned with the safety and well-being of the patient (Greenhalgh et al., 1998). Unfortunately, despite several definitions, there is no agreement among scholars on what constitutes caring behavior (Edwards, 2011).

Patients' evaluations of nurse caring behaviors are thought to majorly impact patient satisfaction and health outcomes,

which are considered indications of care quality. Several studies have found discrepancies between nurses' and patients' opinions of whether acts are considered caring and that intentional caring is not always viewed as such by patients (He et al., 2013; Muhammad Esmail et al., 2012; Omari et al., 2013; Papastavrou et al., 2011). Patient and nurse perceptions of nurse caring behaviors may differ, resulting in nurses providing care that is not prioritized by the patients, resulting in patient unhappiness (Omari et al., 2013).

Despite numerous studies implicating incongruences in the perceptions of patients and nurses towards caring behaviors, some studies also reveal a congruence between the two (OConnell & Landers, 2008; Zamanzadeh et al., 2010). For example, OConnell and Landers (2008) discovered that nurses and patients' families agree on the most and least critical caring behaviors. The most significant caring behaviors are technical skills and altruistic and emotional components of caring (OConnell & Landers, 2008).

Factors relating to nurses' caring behaviors can be categorized into three elements: personal, technological influencing, and environmental (Prompahakul & Nilmanat, 2011). The same review article found no significant correlation between age and nurses' caring behavior for dying patients. But the study found that older nurses have higher caring levels toward patients who are dying than younger nurses. Years of experience at work were also known to have a positive correlation with a nurse's caring conduct. But no significant difference in the caring behavior of professional nurses was observed based on the training experience (Prompahakul & Nilmanat, 2011).

Another study found a substantial link between individual, psychological, and organizational characteristics and nurses' caring behaviors when dealing with tuberculosis patients (Syahridha et al., 2015). In addition, there is a strong correlation between individual variables, psychological variables, and organizational variables when it comes to the six dimensions of caring behaviors, such as readiness and willingness, comfort, the act of anticipating, building trustworthy connections, monitoring and follow-up (Syahridha et al., 2015).

Knowledge, skills, and attitude are the basis for nurse caring behaviors. The quality of nursing care provided can be evaluated by examining the knowledge, skills, and attitude of nurses (Li & Kongsuwan, 2021). To assess their practice and improve patient care that can improve patient outcomes, nurses must be able to recognize their judgments of caring behaviors. Some patients may not completely understand these behaviors. The perceptions of patients who receive nursing care are equally important. Differences in perceptions of caring behaviors could lead to patient dissatisfaction (Palese et al., 2011).

It is critical to look at nurses' and patients' views of caring behaviors to find similarities and differences in their understandings of caring behaviors since there is a misalignment between nurses' and patients' interpretations of it. This knowledge can help nurses and nurse supervisors to provide meaningful feedback about the quality of nursing care.

Perceptions of caring behaviors can be assessed with quantitative or qualitative methods. Quantitative studies tend to be practical and allow comparison across different contexts and cultures. Numerous tools measure caring, many of which were developed to examine how nurses and patients perceive various aspects of caring (Sitzman et al., 2019). The Caring Behaviors Inventory (CBI), created by Wolf initially in 1986, was the second empirical measurement tool of caring to be described in the nursing literature (Wolf et al., 1998). Watson's Transpersonal Caring Theory from 1988 served as the theoretical and conceptual foundation for this research (Watson, 1988).

The CBI originally had 75 items with five subscales: (1) Respectful deference to the other, (2) assurance of human presence, (3) positive connectedness, (4) professional knowledge and skill, (5) attentiveness to the other's experience. It was later downsized to a 42-item scale from a 43-item instrument with five subscales (Sitzman et al., 2019). Psychometric testing was used to update the CBI into a 24-item instrument with four subscales (Wu et al., 2006). In 2017, the CBI was further condensed to a single, 16-item scale (CBI-16) (Wolf et al., 2017).

The CBI-16 had been previously translated to different languages and validated in a sample of students, nurses, and patients (Alquwez et al., 2021; Ferede et al., 2022; Ghafouri et al., 2021). However, the Persian and Amharic versions of the CBI-16 showed two-factor and four-factor components, respectively, indicating the need for further psychometric evaluation, especially in other cultures (Ferede et al., 2022; Ghafouri et al., 2021). Nevertheless, both have been demonstrated to be valid and reliable tools for evaluating people's views of caring behaviors (Ferede et al., 2022; Ghafouri et al., 2021).

It is necessary to translate, adapt, and evaluate the CBI-16's psychometric properties in other contexts and cultures to evaluate caring behaviors properly. Additionally, nothing is known about how patients and nurses in non-English speaking nations like the Philippines perceive acts of caring. Therefore, the objective of this study was to translate and adapt the 16-item English CBI-16 into Filipino, as well as to assess its psychometric characteristics among Filipino nurses and adult patients.

## Methods

### Study Design

This study employed a descriptive, cross-sectional design guided by various published processes and approaches in the translation, adaptation, and validation of instruments (MAPI Research Institute, 2009; World Health Organization, 2016).

### Translation, Adaptation, and Validation of the Instrument

Each of the CBI's original subscales had a Cronbach's alpha range of 0.81 to 0.92 (Wolf et al., 1998). The original CBI was revised through psychometric processes, resulting in a 16-item instrument (CBI-16) (Wolf et al., 2017). The CBI-16 measures the perceptions of caring behaviors on a 6-point Likert scale. It has internal consistency reliability of 0.95, suggesting strong reliability. This version was then translated and adapted into Filipino by the investigators to become the new CBI-16-FIL. In this study, the original CBI-16 was administered to the nurses, while the CBI-16-FIL was administered to the patients. The primary author (ZW) gave written permission to use the original English 16-item Caring Behaviors Inventory (CBI-16).

### Instrument Translation Process

The CBI-16 was forward translated into the Filipino language independently by a linguist of the *Sentro ng Wikang Filipino* (Filipino Language Center) in the University of the Philippines (UP) Manila and a bilingual nurse. To evaluate the content validity of the instrument and address discrepancies between the forward translation and the existing comparable previous versions, as well as inadequate expressions or concepts of the translation, a bilingual expert panel was assembled. It was composed of a nurse administrator, staff nurse involved in direct patient care, tool development expert, patient representative or advocate, and nursing instructor/lecturer in the academic setting. The expert panel was asked to evaluate (1) whether the wording of the items was clear, (2) the relevance of each item on the construct of *nurse caring behavior* on a 4-point Likert scale, and (3) whether the item will

be retained, revised, or dropped. Any ambiguities and discrepancies were discussed and resolved by consensus.

The instrument was translated back into English by two independent translators using the same method as the forward translation. In order to assess how closely the two back-translated versions matched the original in terms of phrasing, sentence structure, meaning, and significance, they were combined and compared. In a pilot test, ten participants (five patients, five nurses) were given the CBI-16-FIL, the Filipino translation of the instrument.

The newly translated, adapted, and the cross-validated instrument was administered to a sample of the target population. In addition, the preliminary version was distributed to staff nurses and patients who are receiving nursing care. This research was carried out in a tertiary public hospital, one of the country's largest, with a capacity of 1,500 beds. The hospital caters to about 600,000 patients every year with around 4,000 employees.

### Content Validity

To determine if the items of the CBI were applicable to the Filipino context of caring, two rounds of content validation were done with two separate panels of five experts each. The experts were then asked to rate each item on clarity (yes or no), relevance to the concept (scale of 1 to 4, with 4 being the highest), and whether it should be retained, revised, or dropped.

### Samples/Participants for Construct Validity

Participants in the study were chosen via purposive sampling. Nurses included in this study were at least 21 years old with at least three months of working experience in the hospital, while patients were at least 18 years old and admitted to the hospital for at least three days. Incapacitated patients and those unable to read and write were excluded from this study. In addition, nurses and patients in administrative offices, intensive care units, and other specialty areas were excluded. Due to the COVID-19 pandemic, only nurses and patients in non-COVID units were invited to participate in the psychometric validation of the instrument to limit exposure and reduce disease transmission. In addition, this study followed the general rule of thumb, stating that there should be at least 10 participants for each scale item to establish the first psychometric features of the newly translated instrument (Gunawan et al., 2021; Nunnally & Bernstein, 1978).

### Data Collection and Analysis

Data for the study was gathered using a self-administered questionnaire. Data encoding accuracy was checked against the actual instrument. Duplicate entries and data with blank responses were removed as part of the data cleaning process.

STATA 14.1 (StataCorp, Texas) was used for data cleaning and analysis. Based on the consensus of the experts over whether each item will be retained, an item content validity index (I-CVI) was calculated. The average of the I-CVIs was computed as the scale CVI (S-CVI). A cut-off of 0.80 was set as an acceptable content validity index. Internal consistency was assessed with the use of Cronbach's alpha.

The factor structure was identified using exploratory factor analysis with the principal factors method and a cut-off eigenvalue of 1.0. Using descriptive statistics, the

characteristics of the respondents and their responses were examined. Inferential statistics such as the independent *t*-test, one-way ANOVA, and Pearson's correlation coefficient were used to examine the differences in nurse caring behavior perspectives and the correlations between different research variables. Post-hoc pairwise comparisons with Bonferroni correction were done to determine pairwise differences in comparisons of three or more groups using One-way ANOVA.

The COSMIN Reporting Guideline for Studies on Measurement Properties of Patient-Reported Outcome Measures was followed in the reporting of this study (Gagnier et al., 2021).

### Ethical Considerations

This study has been reviewed and approved by the UP Manila Research Ethics Board (UPMREB 2018-395-01) and the UP Philippine General Hospital (PGH) Expanded Hospital Research Office. Prior to taking part in this study, each participant was provided written informed consent and informed of their right to withdraw their participation at any time during or after the study.

## Results

### Content Validity and Target Population Input on the Translated CBI-16-FIL

In the first iteration of the expert panel review, the S-CVI was 0.70, with eight items not reaching an item CVI (I-CVI) of 0.80. After revising the wording of these items following the panel comments, the second round of review resulted in an S-CVI of 0.825. Only four items had an I-CVI of 0.60 (items 6, 9, 13, and 14):

- CBI2: Giving instructions or teaching the patient
- CBI7: Being confident with the patient
- CBI11: Returning to the patient voluntarily
- CBI16: Relieving the patient's symptoms

These items were reviewed again by the researchers, and a final wording was decided. All other items had I-CVIs greater than or equal to 0.80. Regarding the relevance rating, all items were rated with a score of 4.

Cognitive debriefing after the pilot testing with ten patients revealed that the CBI was easily understandable by the participants. There were no questions regarding the response options and the recall period in the instrument. Therefore, no further revisions were made to the translated instrument after this pilot. The final version of the translated CBI-16-FIL is available in a [Supplementary Appendix](#).

### Characteristics of the Participants

A total of 180 patients and 142 nurses participated in this study. There were 11 patients who had an incomplete response, resulting in 169 patients included in the foregoing analyses. The nurses ([Table 1](#)) had a mean age of 36.23 years old ( $SD = 8.79$ ) and a mean work experience in the hospital of 10.77 years ( $SD = 8.36$ ). They were mostly females ( $n = 112, 78.87\%$ ), single ( $n = 77, 54.23\%$ ), and had BSN as their highest educational attainment ( $n = 137, 96.48\%$ ). More than two-thirds of the nurses were from charity/service wards, where patient care is free for those indigents. Their areas of the assignment were also fairly distributed among medical, surgical, and mixed (medical and surgical) wards.

**Table 1** Characteristics of nurse participants (*N* = 142)

Characteristic	Mean (SD)	<i>n</i> (%)
Age (years)	36.23 (8.79)	
Length of work experience in PGH (years)	10.77 (8.36)	
Length of work experience in a current area of assignment (years)	7.70 (7.17)	
<b>Sex</b>		
Female		112 (78.87)
Male		30 (21.13)
<b>Marital Status</b>		
Single		77 (54.23)
Married		61 (42.96)
Separated		3 (2.11)
Widowed/ Widower		1 (0.70)
<b>Highest Educational Attainment</b>		
BSN		137 (96.48)
MA/ MS		4 (2.82)
MA Units		1 (0.70)
<b>Area of Assignment</b>		
Medical		43 (30.28)
Surgical		44 (30.99)
Mixed Medical Surgical		43 (30.28)
Ob-Gyne/ Maternal		3 (2.11)
Emergency/ Trauma		9 (6.34)
<b>Ward Type</b>		
Service Wards		99 (69.72)
Pay Wards		43 (30.28)

Patients (**Table 2**) had a mean age of 44.52 years old (*SD* = 19.19) and length of stay of 15.18 days (*SD* = 21.98). Majority were males (*n* = 92, 54.44%), single (*n* = 84, 49.70%) married (*n* = 77, 45.56%), high school graduates (*n* = 99, 58.58%), and unemployed (*n* = 95, 56.21%). Most patients came from the charity/ service wards (*n* = 156, 92.31%).

**Table 2** Characteristics of patient respondents (*N* = 169)

Characteristics	Mean (SD)	<i>n</i> (%)
Age (years)	44.52 (19.19)	
Length of stay (days)	15.18 (21.98)	
<b>Sex</b>		
Male		92 (54.44)
Female		77 (45.56)
<b>Marital Status</b>		
Single		84 (49.70)
Married		77 (45.56)
Separated		4 (2.37)
Widowed/ Widower		4 (2.37)
<b>Highest Educational Attainment</b>		
Elementary graduate		20 (11.83)
High school graduate		99 (58.58)
College graduate		29 (17.16)
Technical/ vocational		19 (11.24)
Graduate studies (MA/PhD)		2 (1.18)
<b>Work</b>		
White collar		11 (6.51)
Blue collar		32 (18.93)
Vendor		14 (8.28)
Others		17 (10.06)
Unemployed		95 (56.21)
<b>Ward Type</b>		
Charity wards		156 (92.31)
Pay wards		13 (7.69)

**Psychometric Properties of the CBI-16-FIL**

**Table 3** shows the internal consistency and factor loadings of each CBI item from the nurses' and patients' responses. The original CBI-16 and CBI-16-FIL had excellent internal consistency, with overall Cronbach's alphas of 0.93 and 0.95, respectively. None of the items would result in a considerable increase or decrease in Cronbach's alpha if deleted.

**Table 3** Internal consistency and factor loadings of CBI responses between nurses and patients

Item	CBI-16 ( <i>N</i> = 142 nurses)		CBI-16-FIL ( <i>N</i> = 169 patients)	
	Cronbach's alpha, if item deleted	Factor Loadings	Cronbach's alpha, if item deleted	Factor Loadings
CBI1	0.9198	0.7818	0.9490	0.6587
CBI2	0.9221	0.6816	0.9468	0.7646
CBI3	0.9233	0.6480	0.9460	0.7948
CBI4	0.9250	0.6087	0.9466	0.7783
CBI5	0.9214	0.6922	0.9465	0.7810
CBI6	0.9233	0.6228	0.9455	0.8207
CBI7	0.9217	0.6897	0.9464	0.7707
CBI8	0.9229	0.6675	0.9470	0.7543
CBI9	0.9212	0.7010	0.9475	0.7432
CBI10	0.9255	0.5367	0.9496	0.6310
CBI11	0.9211	0.7076	0.9464	0.7891
CBI12	0.9237	0.6113	0.9472	0.7377
CBI13	0.9202	0.7398	0.9451	0.8341
CBI14	0.9204	0.7276	0.9478	0.7186
CBI15	0.9212	0.7022	0.9498	0.6132
CBI16	0.9224	0.6613	0.9473	0.7445

CBI-16 - original Caring Behaviors Instrument  
 CBI-16-FIL - Filipino translation of the Caring Behaviors Instrument

The Kaiser-Meyer-Olkin Measures of Sampling Adequacy were 0.916 and 0.932 for the CBI-16 and CBI-16-FIL, respectively. Bartlett's test of sphericity was not significant for both instruments ( $\chi^2 = 1189.3$ ,  $p < 0.001$ , and  $\chi^2 = 2059.30$ ,  $p < 0.001$ , respectively). These indicate the fit of the data for

factor analysis. Exploratory factor analysis of the responses on the CBI-16 and CBI-16-FIL revealed a one-factor solution. This factor accounted for 85% of the eigenvalues for CBI-16 and CBI-16-FIL.

**Perceptions of Nurse Caring Behaviors**

While the original CBI-16 did not provide interpretations of the total instrument scores, the mean scores on the CBI-16 ( $M = 85.77, SD = 8.02$ ) and CBI-16-FIL ( $M = 86.96, SD = 11.48$ ) indicate a relatively high perception of nurse caring behaviors (89% of highest score for nurse responses and 91% for patient responses). The mean scores and comparisons are presented in **Table 4**. The difference between the overall perceptions of nurses and patients was not significant ( $p = 0.30$ ). However, five individual items on the CBI were perceived differently by nurses and patients:

- CBI3: Treating the patient as an individual
- CBI4: Spending time with the patient
- CBI10: Treating patient information confidentially
- CBI13: Meeting the patient’s stated and unstated needs
- CBI15: Giving the patient’s treatments and medication on time

**Table 4** Mean scores and comparisons of CBI responses between nurses and patients

Item	Nurses (N = 142)		Patients (N = 169)		t	p-value
	Mean	SD	Mean	SD		
CBI1	5.56	0.67	5.45	0.94	1.20	0.23
CBI2	5.50	0.66	5.49	0.87	0.10	0.92
CBI3	5.71	0.58	5.47	0.96	2.65	0.01*
CBI4	4.70	0.94	5.40	0.95	-6.55	<0.01*
CBI5	5.26	0.79	5.45	0.94	-1.90	0.06
CBI6	5.29	0.74	5.29	1.04	-0.01	0.99
CBI7	5.45	0.67	5.56	0.91	-1.14	0.25
CBI8	5.61	0.54	5.56	0.84	0.61	0.54
CBI9	5.39	0.77	5.24	1.16	1.38	0.17
CBI10	5.70	0.61	5.41	1.04	2.85	<0.01*
CBI11	5.36	0.73	5.44	0.92	-0.82	0.41
CBI12	5.47	0.75	5.46	0.95	0.16	0.87
CBI13	5.13	0.80	5.34	0.99	-2.03	0.04*
CBI14	5.15	0.84	5.30	1.06	-1.28	0.20
CBI15	5.18	0.77	5.65	0.63	-5.90	<.01*
CBI16	5.30	0.67	5.46	0.83	-1.91	0.06
Overall	85.77	8.02	86.96	11.48	-1.03	0.30

\*significant at  $\alpha = 0.05$   
t - Independent t-test

**Table 5** Relationship between total CBI scores and sociodemographic characteristics of nurses

Characteristics	Test statistic	p-value
Age (years)*	0.22	0.008
Sex**	2.32	0.022
Marital Status***	0.85	0.468
Highest Educational Attainment***	0.40	0.668
Area of Assignment***	4.53	0.002
Ward Type**	-0.86	0.393
Length of work experience in PGH (years)*	0.21	0.014
Length of work experience in current area of assignment (years)*	0.20	0.016

\*Pearson’s r, \*\*Independent t-test, \*\*\*One-way ANOVA

**Relationships between Respondent Characteristics and Perceptions on Caring Behaviors**

There were sex differences in terms of perceptions of nurse caring behaviors, with female nurses ( $p = 0.02$ ) and patients ( $p = 0.05$ ) reporting higher scores than males (**Table 5**). In

addition, nurses from surgical wards reported higher views of nurse caring behaviors ( $p = 0.002$ ), while patients who were separated had lower scores on the CBI-16-FIL ( $p = 0.01$ ) (**Table 6**). However, other nurses’ and patients’ characteristics were not significantly related to perceptions of nurse caring behaviors.

**Table 6** Relationship between total CBI scores and sociodemographic characteristics of patients

Characteristics	Test statistic	p-value
Age (years)*	-0.05	0.53
Sex**	2.02	0.05
Marital Status***	3.67	0.01
Highest Educational Attainment***	0.55	0.70
Work***	0.59	0.67
Ward Type**	-0.49	0.63
Length of stay (days)*	-0.11	0.17

\*Pearson’s r, \*\*Independent t-test, \*\*\*One-way ANOVA

**Discussion**

**Psychometric Properties of the CBI-16-FIL**

In various countries, the psychometrics of the CBI with varied items and emergent factors have been evaluated. As shown in various studies, the Cronbach’s alpha of the tool ranged from 0.90 to 0.96 (Romero Martin et al., 2019). The CBI had strong validity with four components and good reliability with a Cronbach’s alpha of 0.93, according to a psychometric analysis of the 24-item assessment in Greece (Alikari et al., 2021). Wolf et al. (2017) reduced a 24-item tool to a 16-item tool. In Turkey, a psychometric investigation of the 42-item CBI found that a 30-item CBI with three variables had high reliability and validity (Gul & Dinc, 2020).

This Philippine study found a single-factor solution to the CBI-16 for patient and nurse samples. This is consistent with the first study that reported the CBI-16 in 2017, where items were removed from the CBI-24R following the frequency of missing responses and patient comments (Wolf et al., 2017). However, cross-cultural translation and validation of the CBI-16 among patients revealed contradicting solutions, with an Iranian version showing a two-factor structure while a Greek version was unidimensional (Alikari et al., 2021; Ghafouri et al., 2021). These differences in instrument form suggest that the idea of nurse caring behaviors as experienced by patients may be culturally variable. Leininger’s theory on transcultural nursing defines cultural diversity as the variations among and between groups resulting from differences in cultural aspects.

Given the wide range of factors documented in similar research conducted in many countries, it is reasonable to conclude that culture can influence patients’ views of nurses’ caring actions. The findings of our study also show that CBI-16-FIL has a high level of validity and reliability and that it can be used to assess nurses’ caring behaviors.

**Perceptions of Nurse Caring Behaviors**

The results of our study report significantly different scores between nurses and patients on the following CBI items: treating the patient as an individual, spending time with the patient, treating patient information confidentially, meeting the patient’s stated and unstated needs, and giving the patients treatments and medications on time.

According to data from a prior study, patients value technical nursing procedures more than other activities because they are acknowledged by patients more often than other activities, despite the fact that these tasks occupy the majority of nurses' time at the bedside (Papastavrou et al., 2011). According to Watson (1988), giving the patient instrumental care is essential to developing a caring relationship, yet this does not entirely sum up caring. In fact, nurses tend to link caring more with expressive and relational activities than with instrumental care. It would be necessary to address these differences between how nurses and patients perceive acts of kindness.

The items of spending time with the patient and treating the patient as an individual yielded noticeably different results. It is posited that the difference in scores may be related to the nurses' lack of time to provide nursing care. Nurses are often overloaded with work due to overcrowded departments and hospitals. In other words, how the healthcare system is set up results in impersonal nursing (Nelson & Watson, 2012). Another possible reason may be related to family-oriented culture, wherein it is expected that the family's responsibility to spend time and connect with their family members. Therefore, if hospitalization occurs, family is considered an integral part of caregiving (Feliciano et al., 2022).

The CBI item on treating patient information confidentially also reported significantly different scores. This may be because, as health care professionals, nurses consider respect for patient confidentiality an absolute duty (Noroozi et al., 2018). Informed consent, consideration for a patient's privacy, as well as the disclosure of critical information are all essential factors in improving the quality of patient care offered, according to several studies (Susilo et al., 2014). Future research should include variables related to other characteristics of nurses and patients and organizational aspects of health institutions.

As the findings show, there are disparities in how nurses and patients care for each other. This could be due to various variables, including cultural and socioeconomic background, religious beliefs, differing care standards, personal differences, and assumptions between nurses and patients. In these areas, more research may be required.

### Relationships between Respondent Characteristics and Perceptions on Caring Behaviors

The results of this study show that gender is significantly related to nurse caring behaviors, with female nurses reporting higher CBI scores. This may be attributed to the fact that female nurses possess a maternal instinct crucially needed as a nurse. Moreover, this maternal instinct allows them to be more sensitive and receptive to patients' needs compared to their male counterparts (Wang et al., 2012).

In this study, surgical nurses also had higher CBI ratings. This finding is consistent with the results of a Philippine study where it was found that nurses prioritize the medical, technical, and therapeutic aspects of care over other caring behaviors (Tamayo et al., 2022). These results could be explained by the fact that surgery patients require greater physical care throughout the recovery period. Additional investigation is required to identify other personal characteristics, such as knowledge, experience, and abilities, that can influence nurses' tendency to care for others. According to earlier

reports in the literature, caring behaviors can also be affected by other traits, including commitment, responsibility, religious convictions, and personal philosophy (Salimi & Azimpour, 2013). It is also important to remember that nursing practices are significantly impacted by health infrastructure and resources.

Few studies have examined the relationship between patient characteristics and their perceptions of caring behaviors. The most common patient characteristics associated with their perceptions of caring behaviors were found to be age, gender, education, and kind of admission (Jonsdottir, 2002; von Essen & Sjöden, 1991). The findings of this study showed that patients who were female reported higher CBI scores than patients who were male. This finding is consistent with a prior study that found that female patients felt better-taken care of and had a more positive hospital experience than male patients (Chan et al., 2015).

Our study found no significant correlation between patient age and nurse caring behaviors, in contrast to another study's findings that older patients are more favorable in their assessments of those activities (Noroozi et al., 2018). Therefore, it is hypothesized that nurses prefer to pay more attention to senior patients than younger ones or that older patients have lesser expectations of their nursing care (Patiraki et al., 2014).

A related study conducted on nurses and patients in diverse clinical settings discovered a high perception of nurse caring behaviors (Patiraki et al., 2014). Additionally, this study found agreement between nurses' and patients' perceptions of caring actions. However, many investigations indicated the opposite (Modic et al., 2014; Muhammad Esmail et al., 2012). These results contribute to a better understanding of the local patient experience, notably the quality of patient care. Ordonez and Gandeza (2004) suggest that the Philippine culture continues to influence Filipino nurses' health beliefs, behaviors, and practices. Filipinos' flexibility, adaptability, openness, and understanding of other people lead to patient confidence and satisfaction (Ordonez & Gandeza, 2004).

### Strengths and Limitations

This study followed the processes and approaches in the translation, adaptation, and validation of the CBI-16, a version of the Caring Behaviors Inventory with less respondent burden than the longer versions of the instrument. The use of a locally developed tool allowed for more internal validity in studying patients' satisfaction with nursing care. While the sample size for patients was adequate based on the 1:10 rule of thumb, the smaller sample size for nurses was still found to satisfy the assumptions for factor analysis. It is also important to note that further hypothesis testing on differences in perceptions between nurses and patients and the relationships of various study variables were undertaken on the same respondents as with the validation sample.

Furthermore, results might only be generalizable to the present study setting and population and other government hospitals catering to patients with similar socioeconomic statuses. Therefore, more validation research must involve larger sample sizes and different study settings, such as private tertiary hospitals.

## Implications for Nursing Practice

The CBI-16-FIL can be used to measure the patient perceptions of nurse caring behaviors, together with the original CBI-16 for nurses. Results of this study highlight the potential need for interventions focusing on male nurses and non-surgical clinical areas to improve their nurse caring behaviors and drive up patient satisfaction scores and quality of care.

## Conclusion

The translated CBI-16-FIL was found to be a valid, reliable, and unidimensional tool to measure the perceptions of nurse caring behaviors in the Philippines. Despite similar overall perceptions of nurse caring behaviors between Filipino nurses and patients, there were differences in CBI scores regarding sex, nurses' clinical area, and patients' marital status. There is a need for further studies involving other cultures, dyadic samples of nurses and patients, and larger sample sizes. Other instrument properties of the CBI-16-FIL should also be studied, such as test-retest reliability, minimal clinically important differences, and convergent validity with another related instrument.

## Declaration of Conflicting Interest

The authors declare that they do not have conflicts of interest in this study.

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## Authors' Contributions

RJT and RPT led the conceptualization and design of the study. All co-authors contributed to the writing of the study protocol and data collection. RJT led data processing while RPT led the data analysis. All co-authors contributed to the writing and review of the final manuscript. All agreed with the final version of the article to be published.

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## Data Availability

The datasets generated during and analyzed during the current study are available from the corresponding author on reasonable request.

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