The Psychometric Properties of the Nursing Warmth Behavior Scale Chilean version 35-item Likert Scale in the Puerto Rican Sample

Las propiedades psicométricas de la Escala de Comportamiento de Calidez de enfermería versión chilena 35 ítems escala Likert en una muestra puertorriqueña

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El objetivo de este estudio fue evaluar las propiedades psicométricas de la Escala de Comportamiento de Calidez de Enfermería (Escala ECAE: Comportamiento de Calidez de Enfermería), versión chilena de 35 ítems en español de Lagos Sánchez (2017) en la población puertorriqueña. Dado que no había escalas que midan el comportamiento del calor de enfermería en Puerto Rico. Este estudio aplicó muestreos cuantitativos no probabilísticos y tipo instrumental y por cuotas. La muestra estuvo conformada por 316 participantes, de los cuales el 66% fueron mujeres. Se utilizó un análisis factorial confirmatorio para examinar la validez del constructo. Los resultados muestran que hubo un ajuste inadecuado como modelo completo, la escala se redujo a una escala de 8 ítems con índices pobres, pero hubo una mejora en el CFI y el TLI en el Modelo 3, sin embargo, la escala posee una buena alfa de Cronbach de (93).

Palabras claves: Análisis Factorial Confirmatorio, Escala Likert, psicometría, calidez, enfermería, satisfacción

This study aimed to assess the psychometric proprieties of the Nursing Warmth Behavior Scale (Escala ECAE: Comportamiento de Calidez de Enfermería), Chilean 35-item Spanish version by Lagos Sánchez (2017) in the Puerto Rican population. Since there were no scales that measure nursing warmth behavior in Puerto Rico. This study applied quantitative non-probabilistic and instrumental and quota sampling. The sample consisted of 316 participants, and 66% were females. A Confirmatory Factor Analysis was used to examine the construct validity. The results show there was an unsuitable fit as a whole model, and the scale reduced to an 8-item scale with poor indices. However, there was an improvement in the CFI and TLI in Model 3; however, the scale possesses a good Cronbach's alpha of (.93).

Keywords: Confirmatory Factor Analysis, Likert Scale, psychometric, warmth, nursing, satisfaction

Many clinical patients may experience unpleasant customer satisfaction in hospitals and other health facilities when receiving medical treatment. However, patient satisfaction may be measured and noticeable in clinical observations as well as the patient's follow up appointment and treatment provided by nurses and the medical staff. Also, when each patient receives individual attention while integrating a holistic patient care approach can improve the services and customer satisfaction. Hospitals must provide adequate supervision and work with experienced medical staff and management regarding health services, primarily focusing on nursing personnel. Most of the nurses in clinical cases spend more time with aiding patients, and medical care plays an essential role in patient satisfaction. Evaluating patient care satisfaction, some medical facilities and hospitals may not take into consideration that patient satisfaction is an indicator of quality and control. Care satisfaction may help to determine health-care delivery and performance and other health system awareness, especially paying attention to the nursing staff. Nurses have a vital and direct role in the healthcare of clinical patients.

Literature Review

Adhikary et al. (2018) and Hassan, Sabiu, Ndom, Amina, and Ezekiel (2018) argue that patients with higher levels of satisfaction may show higher levels of patient empowerment. Nurses who commit to patient care may show a high possibility that a patient may comply with the medical recommendations from the hospital medical staff. A proper supervised clinical treatment may result in better health outcomes in patients care. Hassan et al. (2018) argue that patient satisfaction has gained attention in the modern-day clinical setting. That a well-planned healthcare delivery system, particularly if it emphasizes patients should highlight on patient's satisfaction. According to research that healthcare providers' interactions with patients and their families have remarkably strong effects on positive clinical outcomes and treatment and even a psychological impact on the patient's medical treatment and progress.

On the one hand, conducting a patient satisfaction survey also plays a vital role in the holistic medical approach in the aspects of healing and the emotional and physical well-being of many patients. First, hospitals and staff with higher levels of engagement with

patients may encourage a better advantage in the performance of clinical standards of patient care and follow-up. Satisfied patients are content with the hospital service and the clinical facility; there are more likely to revisit the facility. Moreover, follow the health instructions and medical recommendations of the clinicians whom they trust. Patient care treatment should emphasize a positive experience with the facilities and services and nursing staff. There is a relationship between a hospital's staff works in teamwork that may show effective organizational leadership and organizational commitment in nurses. (Marama, Bayu, Merga, & Binu, 2018).

Organizational Commitment

Organizational commitment is a psychological state that links an employee with the organization. Employee's commitment may manifest by the emotional-affective stage, which describes as the emotional attachment to the organization. Also, empathy is associated with a healthy workplace climate and easygoing coworkers (Trifiletti, Di Bernardo, Falvo, & Capozza, 2014). Recent studies show that employees committed to the organization usually have good work attendance and performance, and are more likely to engage in extra-role behaviors (Bukhari, & Kamal, 2017). Trifiletti et al. (2014) argue that nurses with a highly active organizational

commitment are more likely to feel and express empathy to the suffering of patients. Even in some cases, nurses do not feel emotionally tied/committed to them. When nurses do not express or feel any empathy and sensibility toward patients, it may harm them. Also, it plays a role in the nurses'job to experience negative affectivity associated with emotionally stressful situations in a clinical setting.

Vandenberghe, Bentein, Michon, Chebat, Tremblay, & Fils (2007) point out that nurses who vow commitment with patients; it is a conceptual adaptation borrowed from the business concept in customer care service. Based on the generalized model of commitment towards clients, Meyer and Herscovitch (2001) and Vandenberghe et al. (2007), proposed that commitment toward customers entails three components: the desire to pursue courses of action of relevance to customers in order to satisfy their expectations; the perceived obligation to meet customers' expectations; and, finally, the perceived cost of failing in meeting customers' expectations.

According to Atsan (2017), states that customer satisfaction is the sense of pleasure that a customer has achieved by practical outcomes of the services received. Customer satisfaction has a dual

relationship, and it can have both favorable or unfavorable emotions in customers and invoke in customers' perception about the performance and the expectations from an organization.

On the other hand, Vandenberghe et al. (2007) agree that emotional contagion is present in employees having a strong affective commitment to customers. When there is empathic contagion in employees, it may also characterize the relationship between nurses with a high affectivity commitment to the patients. Nurses with a high affectivity emotional commitment with patients are more likely to be emotionally overwhelmed by patients' suffering. It may help nurses reduce their emotional burden and thus can be functional to avoid emotional distress.

There are a few studies on nurse's affective organizational commitment in the literature review, but instead, it mentions studies on ethical issues related to the nursing practice. Also, the literature review suggests that human emotions such as warmth are the first fundamental affection as well as sympathy in ethical reasoning in the field of nursing. There is extensive evidence that warmth constitutes a person's empathy behavior. He or she is capable of expressing and transmitting warmth and sympathy towards others, and others can perceive it. Furthermore, there is a positive

relationship between empathy with perceptions of human warmth in health-related settings. There is evidence that individuals experience a perception of warmth and competence from other individuals, it can both be beneficial and vice versa for the patient and nursing staff (Kraft-Todd, Reinero, Kelley, Heberlein, Baer, & Riess, 2017). In other words, warmth has traits of friendliness, trustworthiness, kindness, a desire to be in communion with other people (Falvo, Capozza, Di Bernardo, & Manganelli, 2016).

Competence and Warmth

Oleszkiewicz and Lachowicz-Tabaczek (2016) explain that the observing behaviors of others are an easily accessible source of information about people, which enables us to attribute to them unobservable traits. Many studies indicate the existence of the two critical dimensions by which traits can be categorized: competence and warmth (Abele, Rupprecht, & Wojciszke, 2008). Competence refers to efficacy, ambition, rivalry, success in achieving goals, and independence. Warmth denotes consideration, empathy, sincerity, benevolence, and support (Abele, Uchronski, Suitner, & Wojciszke, 2008; Abele & Wojciszke, 2007). Recent studies suggest that each of the two dimensions might diverge into two subdimensions (Brambilla, Rusconi, Sacchi, & Cherubini, 2011). It has been

demonstrated that competence and respect may depend more on perceived competence; whereas, liking and fondness are associated with perceived warmth. Human warmth may influence social judgments in people in so many ways, but also admiration may depend heavily on perceived competence and patient satisfaction (Lagos Sánchez et al., 2016; Wojciszke, Abele, & Baryla, 2009).

Nursing has its origins from the Christianity-Judeo doctrine that requires nurses to have different degrees of personal involvement. Nurses must have logical-formal thinking and the salience of the hypothetical scenario in any situation. Also, nurses must know how to interpret and manage one's own emotions and the capacity to undergo a process of co-construction of shared meanings that others might consider for problem-solving. When a nurse commits and knows how to manage last-minute inconvenience in the workplace and feels in control and emotionally well balanced, a nurse may direct any concern to the management department. The Human Resources office may also have an impact on patients' care and their families because of the concerns of the nursing staff (Manara, Villa, & Moranda, 2014).

Min-Chi, Shu-Chuan, Ching-Lin, and Bor-Wen (2017) argue that a nurse should always possess the capacity to care, respect the

patient's feelings, exhibit active listening skills, empathy, and cultivate nurture. Which all these are the characteristics and behaviors that many patients appreciate the most. For example, head nurses show their gratitude, warmth, and empathy for others; it can create a "warm" working atmosphere. Other registered nurses may adopt the same work behaviors as head nurses. It would raise the positive experience of happiness in them, and take in part the characteristics of are and in their professional duties. By doing so, registered nurses could deliver medical care in patients with compassion and empathy rather than merely completing their work routine.

Lagos Sánchez, de Mattos-Pimenta, and Urrutia (2016) define warmth as a subjective phenomenon that is fundamental in human relationships, and it can be contagious. It can be a factor in improving the healthcare system as well as a good predictor of patient satisfaction. Furthermore, patient satisfaction can enhance patient loyalty and obedience to the hospital staff and services, and both parties can have effective information exchange communication (Montague, Chen, Xu, Chewning, & Barrett, 2013).

Patient-Provider Interactions

Marama et al. (2018) claim that patient-provider interactions significantly influence patient satisfaction and hospital care. Besides, the surrounding physical environment, interpersonal skills regarding courtesy, respect, practical communication skills, and flow of information with up to date technical skills such as clinical competency and hospital equipment should be taken into consideration.

Lagos Sánchez et al. (2016) explain that in nursing, the interpersonal skills, including warmth, can be predictors of satisfaction because patients are a vital component of nurses' competencies and duties. Even more, nurses expressing kindness, joy, and happiness, smiling to patients, and show interest in them. Also, when nurses have a sense of humor, it can have a positive outcome of satisfaction. According to the Synergy Model, the model mentions that a competent nurse must have compassion and kindness. A nurse is also a facilitator between a patient and families and medical staff, and a nurse should always show interest in the patient's care and guarantee customer satisfaction. Nurses must show eye contact with patients, remember the patient's name, express a positive attitude toward patients and family members.

Also, speak an easily understandable language the patients may comprehend. It can also improve the nurse and patient relationship.

Perspectives in Healthcare

In many of the worldwide healthcare organizations, patient satisfaction is considered an essential aspect of shaping the quality of health system reforms and health care service delivery. Patient satisfaction research has been significant in providing evidence for policymakers to improve health system performance in Europe and the United States. The literature review highlights the importance of patient satisfaction, and it indicates the quality of care. Having satisfied patients can adhere to medical treatment, and it is often the result of patients being satisfied with health care services (Nunu & Munyewende, 2017).

Over the past decade, social psychologists have dedicated increasing attention to social group relationships. According to Leyens, Rodriguez-Perez, Rodriguez-Torres, Gaunt, Paladino, Vaes, and Demoulin (2001) determined that people have the tendency to assign unique human attributions of emotions on groups rather than a group, also known as the infra-humanization effect (Demoulin, Leyens, Rodríguez-Torres, Rodríguez-Pérez, Paladino, & Fiske, 2005). The concept of having the full potential of humanity

is probably associated with the belief that human beings must share the suffering of others and show sympathy and concern (Trifiletti et al. 2014).

Capozza, Andrighetto, Di Bernardo, and Falvo (2012) point out that research has revealed that people tend to attribute uniquely human attributes. Sometimes they categorized what they believe is rationality and morality attributions to their intimate groups rather than to the outsiders of groups. In some cases, people categorize their intergroup relations with attributions of low human qualities such as aggression and discrimination. It somehow reduces levels of empathy in their group and the desire to help others; it can have detrimental consequences in the future (Montague et al., 2013).

For example, labeling patients with deviant categories in which many aspects of modern health care associate with a dehumanized representation of patients. Labeling patients such as illness-related labels (e.g., schizophrenic, psychotic, heart patient) is used to refer to the patients, towards the patients' individuality, is not considered as a person. Instead, some medical facilities emphasize medical technology services rather than the patient's care (Capozza, Boccato, Andrighetto, & Falvo, 2009). Recent studies show that human attributes like honesty and likeability linked to warmth-related

traits in people. For example, it can be a facial expression, and the human face can be a reliable source of information (Oleszkiewicz, & Lachowicz-Tabaczek, 2016). A medical device or any advanced medical equipment lacks off detecting human warmth in patients and families in which human attributes are priceless in the moment of nursing care with patients.

According to the literature review, the relationship between warmth care provided by nurses and patient's satisfaction is limited. However, Lagos Sánchez et al. (2016), argue that it is necessary to examine characteristics of warmth in the nursing staff and services. It can provide some insight, and it may be a relevant factor that describes a patient's satisfaction. It becomes even more critical in the health area, and that nursing professionals have substantial participation in the health workforce in Puerto Rico. Nurses perform a high percentage of the functions in the private and public clinical health institutions. Celik (2017) points out that the patient's satisfaction is vital for health care services. It is an indicator of nursing care quality in many clinical settings. Therefore, each patient should have a holistic approach to raise and improve satisfaction.

In sum, this study aims to preliminary validate the Nursing Warmth Behavior Scale (Escala ECAE: Comportamiento de Calidez

de Enfermería), 35-item Spanish version by Lagos Sánchez (2017) for the general health clinical settings in Puerto Rico. Furthermore, to assess the psychometric properties of the ECAE scale. There are non-existing studies conducted in Puerto Rico that had examined the phenomenon in patient's satisfaction and the perception of affective nursing commitment while receiving healthcare attention. Falvo et al. (2017) and Lagos Sánchez (2017) mention that most of the research on warmth behavior focused more on the employees' perceptions of organizational commitment. A small number of studies analyzed the relationship between affective behavior on customer service satisfaction.

Methodology

This study applied quantitative non-probabilistic, instrumental and quota sampling

(Hernández-Sampieri, Fernández-Collado & Baptista-Lucio, 2014).

Sample

The sample of this study consisted of 316 adults legally 21 years old and older, and it was a non-probability quota sampling. The participants were patients and their companions from different municipalities in Puerto Rico. The following table 1 shows the

demographic characteristics. The criteria of inclusion that the participants or a close family member must have received medical care in the past year in Puerto Rico of both sexes in any medical industry with nursing personnel. The criteria for exclusion of the participants may not be minors and under 21 years old. The snowball sampling and word of mouth were used to reach the participants to complete the study.

Table 1.

Demographic characteristics of participants (N = 316)

Characteristics	N	%
Patient	140	44
Companion	176	56
Sex		
Male	108	34
Female	207	66
Age		
21-30	25	8
31-40	75	24
41-50	93	29
51-60	75	24
61 or more	48	15
Health facility		
Hospitalization	157	50
Emergency room	54	17
Home care	29	9
Ambulatory services	76	24

Note. Tools of percentages are not for every characteristic because of rounding.

Instruments

Two instruments were distributed to the participants as well as collected data and then statistically computed for analysis. The first instrument is the Sociodemographic Questionnaire. It collected the following datum: patient or companion, in the case the patient is unable to answer the instrument, sex, age, and the service place were receiving the nursing healthcare attention. The second instrument was the Nursing Warmth Behavior Scale (Escala ECAE: Comportamiento de Calidez de Enfermería), 35-item Spanish version by Lagos Sánchez (2017) and see Appendix A.

The scale was developed using a theoretical phase to describe behaviors associated with warmth in nursing and identified and interviewed 23 patients and 25 nurses. Next, in the experimental phase, the scale was administrated to patients to 476 patients from public and private institutions in Chile. The psychometric properties were performed using the common factor method, main axes, and oblique rotation, and calculate the Cronbach's Alpha for each dimension. The Exploratory Factor Analysis identified five factors and 35 items. The factors were: F1 describes Non-verbal connection-relationship with the other (α = .94), in F2 describes Empathy (α = .91), in F3 describes Verbal

connection-relationship with the other (α = .91), F4 describes Inclusion (α = .86) and F5 describes Confidence (α = .85). The total Cronbach's Alpha was (.93), and the Tucker-Lewis index was (.90). The construct validity was described as the warmth and the ability to establish and maintain a close, welcoming relationship, through verbal and non-verbal behaviors, connection, and relationship with the other person. Also, empathy, inclusion, and confidence, so that it finally means a pleasant experience for the other person.

Procedure

First, the researcher contacted the author of the scale, and the author granted permission to use the scale for this study. Two researchers with doctoral degrees in Psychology were contacted in Puerto Rico to assist in the data collection, perform statistical analysis, and assist in the study. The participants were informed about the purpose of the study and that their participation is voluntary and confidential. The participants received the questionnaires in paper form and collected in closed envelopes, but other participants used the online version using Google doc forms used as word of mouth.

Data Analysis

The data analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 24 and AMOS version 24 for Windows. SPSS was applied to perform the descriptive statistics, the reliability of the scale using Cronbach's Alpha formula, and check any outliers. A Confirmatory Factor Analysis (CFA) is to measure the construct validity of the scale.

Results

In the evaluation as a whole first model (M1) and (See Figure 1) and regarding this type of validity show $\chi 2 = 10278.182$ (550) $p < .000$ and the indices CFI =.469, TLI =.426, RMSEA = .237 were analyzed to assess the adjustment of the model of 35 items. Since it can be observed in the fit, indices did not comply with the norms and were below acceptable values. Next, the assessment of the normality of the first model (M1) of the scale was examined deeply. The results show it revealed no severe normality violations. The absolute skewness (Sk) and kurtosis (K) values were not higher than 3.0 and 8.0, respectively (Kline, 2005). Descriptive statistics of the items were computed for the first total sample (N = 316) and

(median, standard deviation, minimum and maximum, and skewness and kurtosis), as can be seen in the following table 2.

Table 2:

Descriptive Statistics and Items Distributions for the Warmth Nursing Scale Items

Item	*Median*	*Standard Deviation*	*Skew*	*Kurtosis*
WNCNVR1	2.55	1.21	0.59	-0.28
WNCNVR2	2.50	1.24	0.37	-0.82
WNCNVR3	2.31	1.17	0.62	-0.22
WNCNVR4	2.43	1.20	0.46	-0.57
WNCNVR5	2.53	1.21	0.33	-0.73
WNCNVR6	2.60	1.46	0.42	-1.14
WNCNVR7	2.18	1.33	0.89	-0.49
WNCNVR8	2.39	1.34	0.72	-0.74
WNCNVR9	2.48	1.28	0.48	-0.82
WNCNVR10	2.61	1.52	0.38	-1.33
WNCNVR11	2.21	1.28	0.80	-0.44
WNCNVR12	2.23	1.39	0.66	-0.95
WNE13	2.56	1.56	0.38	-1.41
WNE14	2.56	1.42	0.47	-0.99
WNE15	2.44	1.51	0.48	-1.21
WNE16	2.61	1.45	0.39	-1.21
WNE17	2.89	1.42	0.15	-1.23
WNE18	2.87	1.61	0.16	-1.59
WNE19	2.72	1.38	0.37	-1.07
WNE20	2.07	1.40	0.85	-0.79
WNCVR21	2.27	1.37	0.80	-0.63
WNCVR22	2.47	1.55	0.47	-1.32
WNCVR23	2.51	1.30	0.61	-0.73
WNCVR24	2.28	1.24	0.70	-0.58
WNCVR25	2.76	1.20	0.29	-0.50
WNCVR26	2.61	1.33	0.42	-0.74
WNI27	3.17	1.32	-0.03	-1.11
WNI28	3.32	1.18	-0.07	-0.75
WNI29	3.19	1.35	-0.05	-1.17
WNI30	2.98	1.36	-0.06	-1.33
WNI31	2.93	1.29	0.31	-1.12
WNT32	3.16	1.25	0.22	-1.12
WNT33	2.82	1.16	0.13	-0.59
WNT34	3.18	1.27	-0.20	-0.91
WNT35	2.84	1.38	0.33	-1.23

Note: WNCNVR = Warmth Nursing Connection and non-verbal relationship with the other; WNE = Warmth Nursing Empathy; WNCVR = Connection and verbal relationship with the other; WNI = Warmth Nursing Inclusion; WNT = Warmth Nursing Trust

After deleting the items that show normality violations and examined the regression weights, a total of nine items were analyzed, and another Confirmatory Factor Analysis (CFI) was performed. Item 25 was removed because one item is not feasible for a one-factor solution (Kline, 2005). As a result, only eight items were allowed to perform a CFI analysis. The results indicate that in the evaluation of the second model (M2) and (See Figure 2 validity show $\chi 2 = 568.880$ (17) $p < .000$ and the indices CFI =.782, TLI =.642, RMSEA = .321 were analyzed to assess the adjustment of the model of 8 items. It shows there was an improvement in the index's values, especially the CFI and TLI.

According to Figure 2, it indicates that there are a few correlations with the covariances, and item 17 seems problematic. The eight items went through factor analysis to determine if there is a correlation among the items as well as to modify the model and improve the indices. Inspection of the correlation matrix revealed the presence of coefficients of .30 and above. The KMO value was .83, exceeding the recommended value of .60 (Kaiser, 1970). Bartlett's Test of Sphericity reached significance value, and it supported the factorability of the correlation matrix of the scale (Bartlett, 1954).

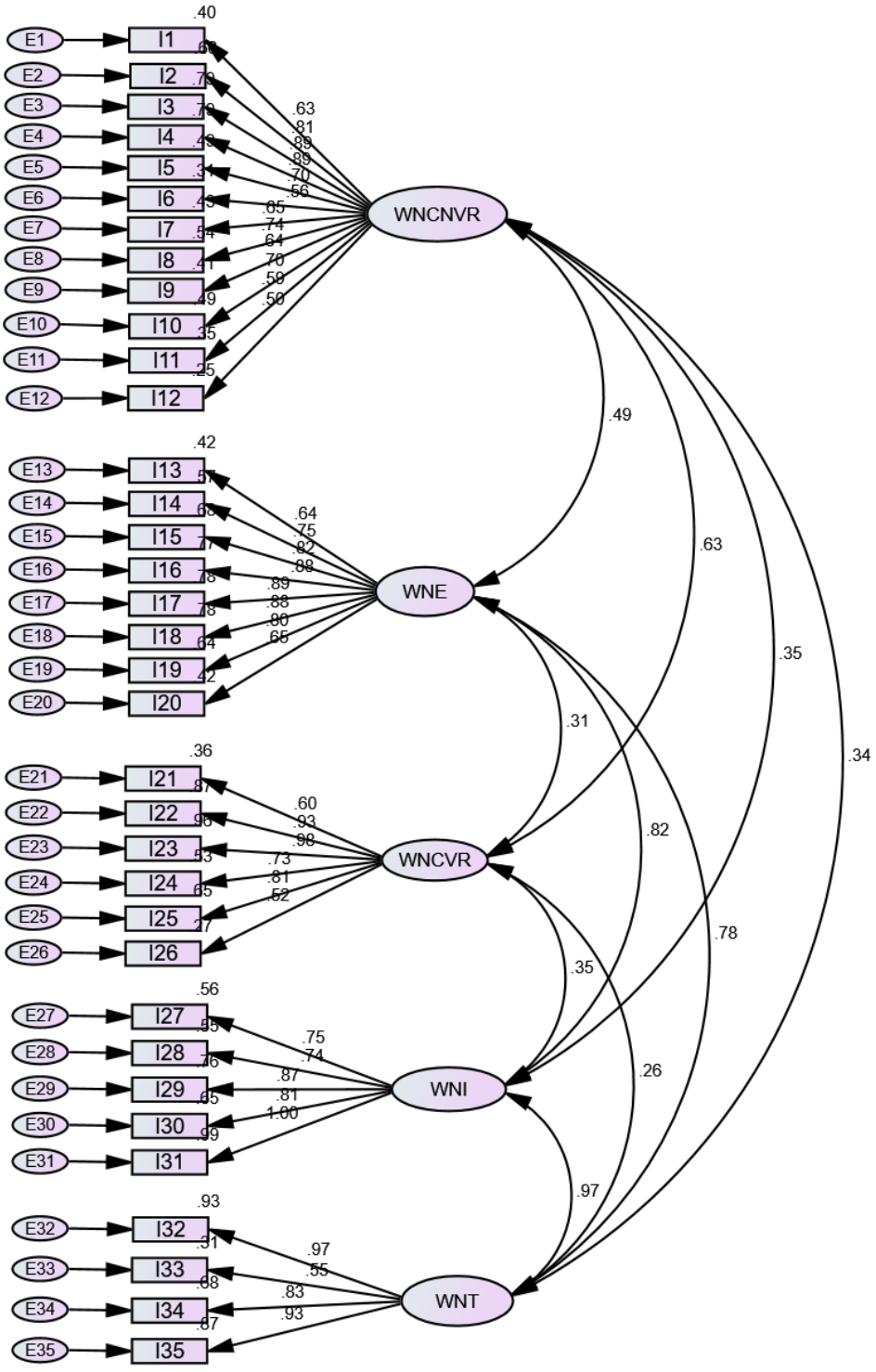

Figure 1: Model 1 (M1) of the 5 factors of the Nursing Warmth Behavior Scale (Escala ECAE)

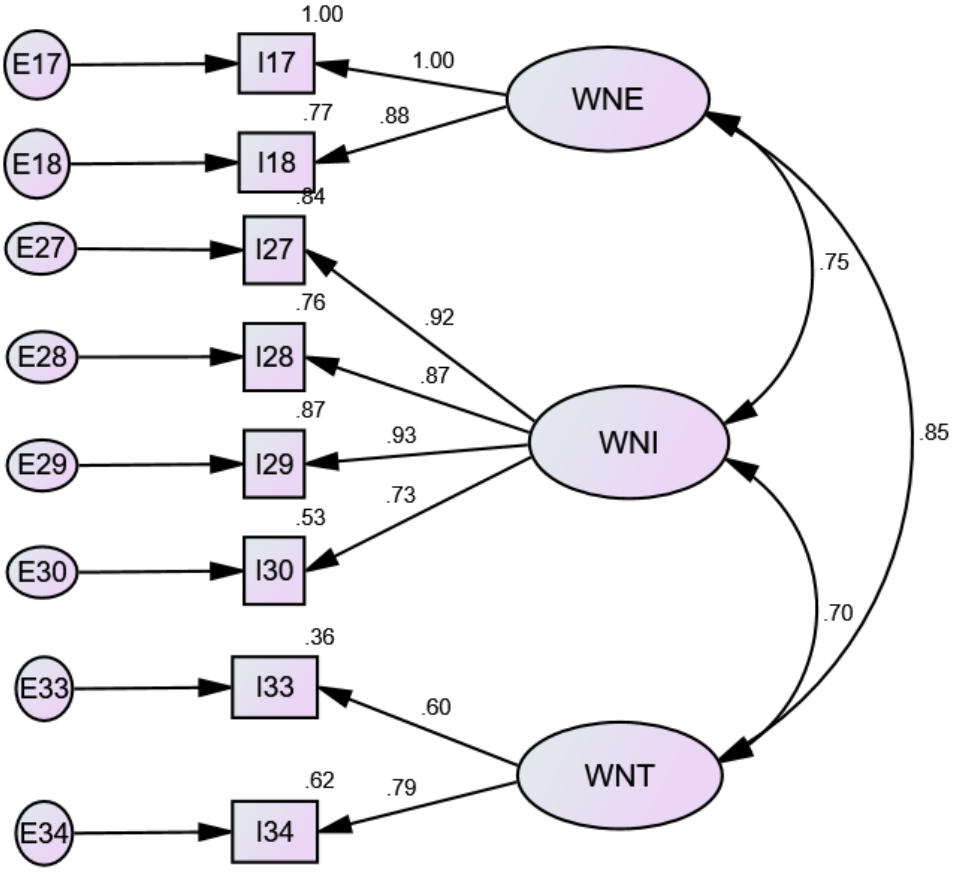

Figure 2: Model 2 (M2) of the 3 factors of the Nursing Warmth Behavior Scale (Escala ECAE)

A principal component analysis showed the presence of one component with eigenvalues exceeding 1, explaining 67% of the variance. An inspection of the screeplot indicated no clear break after the first component. According to Catell's (1966) scree test, it was decided to leave one component. An oblimin rotation was conducted, and the rotated solution showed the presence of a simple structure with a component showing several strong loadings.

Many of the variables loading substantially on only one component. Then another CFI analysis was performed for the third model (M3).

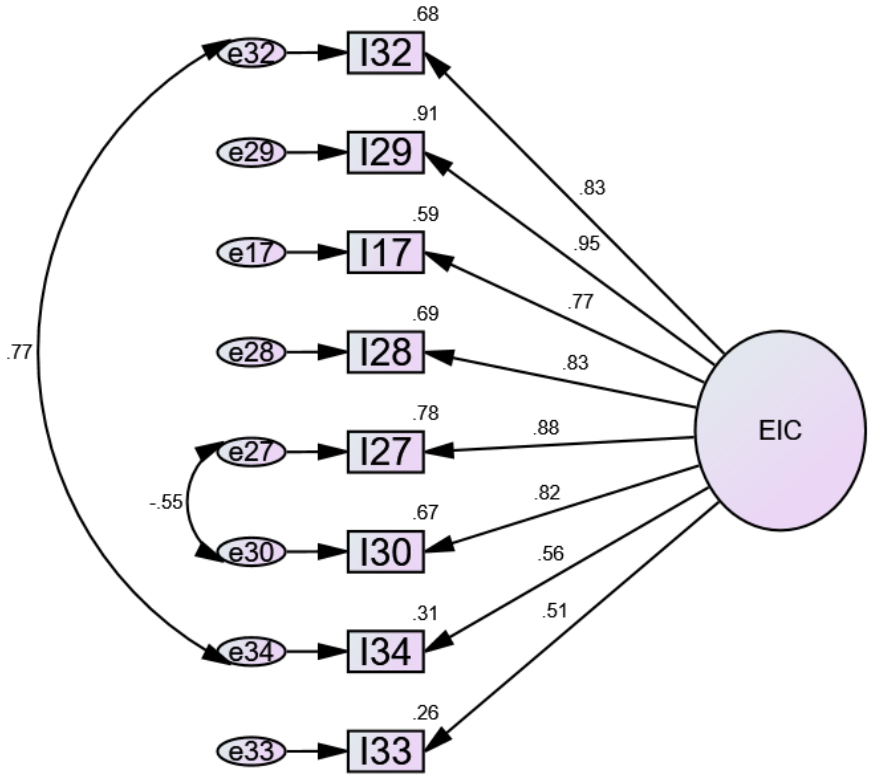

Figure 3. Model 3 (M3) of the one factor of the Warmth Nursing Behavior Scale

The rename scale since an EFA was performed and was labeled dimension EIC. The results indicate the third model (M3) and (See Figure 3) and regarding this type of validity show $\chi 2$ = 508.085 (17) $p < .000$ and the indices CFI =.811, TLI =.707, RMSEA = .294 were analyzed to assess the adjustment of the model of 8 items. It shows there was an improvement in the index's values, especially the CFI and TLI. The 8-item scale possesses a good

Cronbach's alpha of (.93), and according to the literature review, a Cronbach's alpha of .70 or above is considered to be to have acceptable critical value (DeVellis, 2016).

Discussion

This study aimed to assess the psychometric properties of the Nursing Warmth Behavior Scale (Escala ECAE: Comportamiento de Calidez de Enfermería), 35-item Spanish version by Lagos Sánchez (2017) questionnaire in a Puerto Rican sample. The CFA showed an unsuitable fit. The analyses performed to show that some items presented low factorial weights. The scale may be used along with other valid instruments associated with patient care and customer service in nurses and patients in Chile. Even more, the scale was developed specifically for the Chilean context and cultural background in the nursing profession, which show unpromising results for the Puerto Rican population.

Very few studies on patient care and satisfaction have been researched in nurses as well as in many hospitals. It is necessary to further investigate this concept because of the difficulty of accessing these types of samples in medical facilities in Puerto Rico. However, there are plenty of published studies in nursing that only measures the nurse's perception, especially on stress and burnout in Puerto

Rico. Healthcare services can be designed to reduce customer dissatisfaction in patients.

According to the literature review, many authors argue that the indices CFI ≥.90 is acceptable, but a CFI ≥ .95 is considered a good value. The NFI and the TLI ≥.90 is an acceptable value, but an NFI and TLI ≥ .95 is a good value, and RMSEA ≤ .08 is acceptable, but an RMSEA ≤ .05 is considered good (Brown, 2015; Bryne, 2016).

Limitations and Recommendations

First, many of the items in the scale need to be modified and reworded according to the cultural sociolinguistic background of Puerto Rico since there is a noticeable cultural barrier. The items were constructed in the Chilean sociolinguistic and cultural context, which has a significant impact on how the Puerto Rican participants confronted some degree of difficulty interpreting the scale. Second, a robust statistic should be performed with a large sample size and seek a better fit model and indices, and it may show promising results. There are many different opinions by various authors of what is the best sample size for a Confirmatory Factor Analysis. Some authors argue that at least 300 is an adequate sample size, but others believe that it should be more than 300 or between 300 and 500 while others argue more than 500 (Brown, 2015).

In the future, a structural equation modeling to further test and validate the construct validity of the scale after its modifications and adaptation and thus later on applied for the Puerto Rican population. The scale may not be suitable in other Latin speaking countries if the items are not modified accordingly to the participant's sociolinguistic cultural background. Lastly, linguistic experts should reword it and conduct a pilot study beforehand to determine which items will pass. Also, if the entire scale needs to be reconstructed and modified in a new study in Chile — then tested in other Spanish speaking countries which can improve the validity of the scale.

Conclusion

The scale may seem to perform well according to Cronbach's Alpha, but it is not the only indicator to determine the construct validity of the scale. However, it is essential to point out that the scale did not pass during the Confirmatory Factor Analysis. It may be used as a survey study to collect preliminary information from patients and patient's close family members, and in the hospitals in Chile. On the other hand, the scale may not be used in other Latin speaking countries since it may experience similar outcomes as in the Puerto Rican sample.

Patient satisfaction survey plays a vital role in holistic aspects of healing and emotional well-being. When hospitals have engagement with patients, it may improve clinical standards of care and follow-up. Patients who are more likely satisfied with the service can significantly influence a patient-provider interaction. There is a better physical environment, improve interpersonal skills based on courtesy, mutual respect by health care providers, practical communication skills, provide precise information, and technical skills such as clinical competency and hospital equipment (Marama et al., 2018). Patient satisfaction depended on the type of contact (Tranberg et al. 2018).

The Warmth Nursing Scale is a useful survey scale that can provide caregivers and have an insight into the verbal and non-verbal communication of health service users. It serves to improve communication and, therefore, improve nursing services and patient care. Moreover, the scale can be used as a diagnosing tool for need assessment studies and training programs to improve the communication effectiveness and quality of the nursing services provided in hospitals and other clinical medical settings. It is essential to point out that nurses are the first line in the chain of health professionals. Also, spend time with the patient and family

members have the most significant contact during their illness, whether physical or emotional. Therefore, the attention to nursing personnel should have a holistic view.

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Appendix A

ESCALA ECAE: COMPORTAMIENTO DE CALIDEZ DE ENFERMERÍA

"Calidez es la capacidad de establecer y mantener una relación cercana, de acogida, que demuestre por medio de comportamientos verbales y no verbales como son, la conexión y relación con el otro, la empatía, inclusión y confianza, de manera que para el otro signifique una experiencia agradable"

COMPORTAMIENTO	Nada de calidez	Poca calidez	Calidez Intermedia	Mucha calidez	Calidez extrema
1. Se mantiene de brazos cruzados.	0	1	2	3	4
2. Muestra expresión facial de indiferencia.	0	1	2	3	4
3. Mueve con impaciencia el cuerpo cuando está oyendo.	0	1	2	3	4
4. Mantiene una posición corporal de quien está saliendo o yendo.	0	1	2	3	4
5. Evita tocar al paciente.	0	1	2	3	4
6. Usa frases de tono burlesco, irónico o sarcástico.	0	1	2	3	4
7. No sonríe.	0	1	2	3	4
8. Se hace el leso (a).	0	1	2	3	4
9. Contagia con su frialdad.	0	1	2	3	4
10. Es irritable, demuestra mal humor.	0	1	2	3	4
11. Mira a la persona, mas no a los ojos.	0	1	2	3	4
12. Impresiona que hace preguntas solo por obligación o protocolo, no demostrando interés genuino.	0	1	2	3	4
13. Parece que sufre conmigo.	0	1	2	3	4
14. Abraza en situaciones que ameriten.	0	1	2	3	4
15. Le trata como si fuese un familiar o persona conocida.	0	1	2	3	4
16. Toma las manos en situaciones que lo ameriten.	0	1	2	3	4
17. Se involucra y comprende como si fuese la otra persona.	0	1	2	3	4
18. Comprende y "vivencia" con el otro y comparte sentimientos.	0	1	2	3	4

COMPORTAMIENTO	Nada de calidez	Poca calidez	Calidez Intermedia	Mucha calidez	Calidez extrema
19. Demuestra sus sentimientos.	0	1	2	3	4
20. En ocasiones especiales da pequeños "regalos".	0	1	2	3	4
21. Es impaciente y expresa apuro o incomodidad.	0	1	2	3	4
22. Es agresivo, usa "malas" palabras.	0	1	2	3	4
23. Discrimina a paciente y familia.	0	1	2	3	4
24. Habla en tono fuerte, golpeado, autoritario.	0	1	2	3	4
25. Censura a paciente y familia por sus hábitos, opiniones y comportamientos.	0	1	2	3	4
26. No da continuidad a las respuestas y soluciones a los problemas.	0	1	2	3	4
27. Explica cuál es el rol del enfermero (a), que estará a cargo del cuidado y como lo ayudará.	0	1	2	3	4
28. Da orientaciones necesarias sobre eventos o rutinas importantes.	0	1	2	3	4
29. Se presenta con el nombre y su cargo.	0	1	2	3	4
30. Pregunta por su nombre (o como quiere que lo nombren), antes de la atención.	0	1	2	3	4
31. Hace sugerencias oportunas, a usted, familiares o acompañantes, para adaptar sus hábitos a la rutina de la institución.	0	1	2	3	4
32. Impresiona honesto (a) en lo que dice.	0	1	2	3	4
33. Impresiona que no se va a equivocar.	0	1	2	3	4
34. Se nota que domina su área de conocimientos.	0	1	2	3	4
35. Impresiona que las personas creen en su palabra.	0	1	2	3	4

DIMENSIONES

Dimensión 1: Conexión y relación no verbal con el otro 1-12
Dimensión 2: Empatía 13-20
Dimensión 3: Conexión y relación verbal con el otro 21-26
Dimensión 4: Inclusión 27-31
Dimensión 5: Confianza 32-35

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