

Cross-Cultural Validation of the Global Interprofessional Therapeutic Communication Scale© in the Korean context

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Research Article

Keywords: Interpersonal Communication, Therapeutic Relationships, Nurse-Patient Relationship, Instrument Development, Psychometrics

Posted Date: April 1st, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-353852/v1>

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Abstract

Background: Person-centered nursing is pivotal to the high-quality and safe practice of nursing, and therapeutic communication plays an essential role in this process. Therapeutic communication by healthcare professionals is vital in developing and maintaining constructive relationships with patients. The Global Interprofessional Therapeutic Communication Scale[®] (GITCS[®]) measures the therapeutic communication skills of healthcare providers. This scale is useful for assessing the verbal, non-verbal, and culturally sensitive therapeutic communication abilities of healthcare providers in various clinical situations. The purpose of this study was to evaluate the cross-cultural validity and reliability of the Korean version of the Global Interprofessional Therapeutic Communication Scale[®] (K-GITCS).

Methods: A cross-cultural validation of a psychometric evaluation is conducted in the present study. The instrument was translated into Korean using the original developers' translation process.

A convenience sample of 300 registered nurses with more than one year of experience was recruited from a tertiary hospital. Validity was evaluated through a confirmatory factor analysis, and the instrument was tested for psychometric reliability.

Results: The three-factor structure of the K-GITCS was validated. A confirmatory factor analysis of the K-GITCS was conducted, and the results satisfied the statistical criteria with a standardized root mean square residual of 0.06, a non-normed fit index of 0.88, a root mean square error of approximation of 0.07, and a comparative fit index of 0.82. The following factors were correlated: trust and rapport building, power-sharing, and empathy. Cronbach's alpha was 0.94, indicating good internal consistency.

Conclusions: Initial testing with experienced registered nurses in one institution indicated that the K-GITCS[®] instrument has adequate construct validity and reliability to identify therapeutic communication skills in this population. The K-GITCS can be used to assess registered nurses' therapeutic communication. Further research using the GITCS is required to promote the communication skills of healthcare providers. Studies testing with nursing students and nurses in other institutions and interprofessional healthcare providers are also necessary. This instrument can offer valuable insights to guide its development and to devise tailored interventions considering the specific demands of registered nurses. It can be used in nursing education and clinical settings for evaluations of therapeutic communication skills.

1. Background

Therapeutic communication (TC) refers to dynamic interactions among healthcare teams, patients, and caregivers that involve treatment plans, decision making, and evaluations of clinical outcomes [1]. It consists of verbal and nonverbal communication that contains genuine interest and empathy [2]. It plays a vital role when healthcare professionals establish and maintain a therapeutic relationship with clients. Furthermore, suitable communication and rapport are potent predictors of patients' outcomes. A scoping review of previous studies suggested that effective communication and partnerships between patients

and healthcare professionals are crucial to achieving patient healthcare management [3]. The first step in effective healthcare management requires an assessment of patients' health-related needs specific to their symptoms and extensive knowledge of their healthcare needs [3]. During this process, TC plays an essential role between healthcare providers and patients. TC allows patients to participate in their care process and actively promotes their decision-making processes.

Healthcare professionals should provide person-centered care that includes support and comprehensive understanding [4, 5]. Through verbal and nonverbal TC, healthcare professionals can support patients and caregivers, encourage self-management, and help relieve anxiety and depression [6]. Recently, there has been growing interest in investigating communication in clinical fields and providing healthcare providers with communication-related education. MacLean and colleagues [7] found that nursing students and registered nurses (RNs) could simulate actual clinical situations using manikins or standardized patients in simulation programs. This authentic intervention could improve learners' TC skills [7]. Further, a systematic review found that short- and long-term training programs enhanced the communication skills and person-centered care competencies of healthcare providers [8]. Pertinent education for TC can improve nurses' communication skills and make them more empathic.

Even when patients have the same diagnosis, empathic listening and appropriate responses are vital to establishing therapeutic relationships with patients because patients' situations may differ [9]. There are differences between RNs' and patients' awareness of TC [10]. In earlier work, it was found that RNs thought that their communication with the clients was adequate; however, the patients wanted more interactive and responsive communication. This indicates differences in patients and healthcare professionals' thinking, demonstrating the need for a different approach with regard to communication training for RNs.

RNs underestimated the necessity of TC and found it challenging to communicate with patients or caregivers [1]. A previous systematic review of novice nurses' self-reported nursing abilities reported that novice nurses lacked what are known as soft skills, such as empathic communication, and wanted relevant learning opportunities [11]. While knowledge can be acquired at once, skills can only be achieved through cumulative training [12]. To use TC successfully, systematic and substantive education is needed. A consistent instrument that measures communication, an "invisible" soft skill, is essential to evaluate educational effectiveness or assess situations. In this respect, there is a need for reliable instruments to evaluate nurses' skills and competencies after participating in relevant programs.

The essential attributes of TC are person-centeredness, integrative personalized strategies, and goal-directedness [1]. Yoon and Lee [13] analyzed the TC of nursing students and found that it has three attributes: empathic insight, self-consciousness, and the process of building a relationship. Although TC is not a new concept, there is currently broad interest in this concept in nursing education programs. Various educational strategies, such as simulations and problem-based nursing, have promoted the capacity of TC [14, 15]. Meanwhile, a previous systematic review of empathy education for nursing students demonstrated that realistic education could encourage deep engagement. They also found that

objective measurements for evaluations were limited in their ability to measure emotional support and empathy [16], reinforcing the necessity of rigorous instruments to assess the TC of nursing students and RNs.

Campbell and Aredes [17] developed the Global Interprofessional Therapeutic Communication Scale® (GITCS®) to measure specific competence in TC and culturally sensitive communication techniques. It was designed to be used by multiple healthcare professionals to perform a summative evaluation of communication interactions between providers and patients worldwide. The GITCS® can assist instructors in teaching students effectively and accurately assessing students and healthcare providers' TC skills in both simulations and clinical situations. The GITCS® comprises 35 items that measure the performance of TC behaviors, and the scale's coefficient alpha was reported as excellent (0.95) [17]. The interprofessional characteristics of the GITCS® enable its application to multiple disciplines, and its global nature allows it to be translated into other languages for use. Few studies have confirmed the validity and reliability of GITCS® in other countries and cultures. However, it is important to note that communication depends on the cultural background. For example, in East Asia, people say "no thanks," it sometimes means "yes." People from western countries often require much time to understand this culture [18]. Hence, developing different language versions and psychometric evaluations of the GITCS® would be important initial steps promoting its wider use. This study can be used to identify the phenomenon of TC, and develop the suitable program to improve TC skills for RNs.

2. Methods

2.1 Aims

The purpose of the study was to translate the GITCS® into Korean, elucidate its validity and reliability in a cross-cultural context, and clarify its fitness for use with RNs to assess their self-reported TC skills. This study was carried out international regulations based on the STROBE guidelines [19].

2.2 Design

This study uses a methodological research design to confirm the validity and reliability of the Korean version of the GITCS® (K-GITCS).

2.3 Participants

The participants in this study consisted of a convenience sample recruited from a tertiary hospital in Seoul, South Korea. Survey questionnaires were distributed to 300 RNs who were working at that time, and 271 (90.33%) were returned. Finally, 249 participants (83.00%) were included in the analyses after excluding 22 incomplete questionnaires. The appropriate number of participants was considered to be more than five times the number of questions [20]. In this respect, the sample size of 249 was acceptable for a psychometric assessment (35 items x 6 = 210).

2.4 Data collection

For final confirmation validity and reliability of the K-GITCS, the researchers administered the survey to participants during their shift breaks from April to May of 2019. The RNs were asked to fill out the questionnaires in a private space, place the completed surveys in envelopes provided by the research team, and seal them to ensure confidentiality. The K-GITCS took 10 to 15 minutes to complete.

The participants' demographic traits, i.e., age, sex, educational status, clinical experience, were used to check their introductory information. Then, a rubric of the K-GITCS© was used to evaluate the TC skills of the RNs. The GITCS© was developed by Campbell and Aredes [17] in Canada. The original scale was developed as a checklist to be used during simulation education. The researchers used the GITCS© as a self-reported psychometric questionnaire after confirmation by the original authors. A five-point Likert-type scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") was used for the 35 items. The questionnaire has three domains: trust and rapport building, empowering, and empathy. A higher score indicates a higher level of TC. The negatively worded items (9, 12, and 16) were reversely scored. The internal consistency reliability coefficient was 0.95 for the original scale [17].

2.5 Ethical considerations

This study was approved by the Institutional Review Board of Severance hospital (Y-2019-0001). The purpose of the study was explained to the participants by the researchers, and they were assured of confidentiality before they provided informed consent. In order to ensure that the surrounding environments did not affect their voluntary participation, unit managers were not involved in any decisions with regard to the participation of the RNs. Researchers visited wards at the end of the corresponding working hours and held a briefing session with RNs who wished to participate in this study.

2.6 Data analysis

The data in this study were analyzed using the SPSS 25.0 (IBM, Armonk, NY, USA) and STATA 13.0 (StataCorp, College Station, TX, USA) software packages. The participants' demographic factors were determined by means of descriptive statistical analyses. To confirm the content validity, the items were analyzed using corrected item-total correlations. The Cronbach's alpha coefficients were determined to test the internal consistency of the K-GITCS, and a confirmatory factor analysis (CFA) was used to test the validity through structural equation modeling. Like the original GITCS©, the K-GITCS was considered to have three factors.

2.7 Validity, reliability, and rigor

The validation procedure involved two steps: translation and back-translation, and psychometric testing. Translation was conducted according to the GITCS© translation process, adapted by Campbell and Aredes [17]. Figure 1 presents the multiple phases of the translation process.

First, the scale was independently translated from English into Korean by two translators. These two translators and another local researcher, who is responsible for the K-GITCS, synthesized the two translators' results. Second, the GITCS translated into Korean was back-translated into English by a

bilingual researcher of nursing. Third, the scale's translations were evaluated semantically and then adjusted by an expert panel, who verified the final version of the K-GITCS.

For psychometric testing, the content validity of the translated GITCS© was examined by experts. The first version of the K-GITCS was checked by an expert panel, i.e., one nursing professor and two RNs with more than two years of clinical experience. The linguistic validity of the scale was then reviewed independently by a researcher of Korean literature. After the first version of the K-GITCS was completed, our research team discussed a semantic adjustment with Campbell and Aredes, the original authors of GITCS©. This discussion was conducted based on the back-translation of the K-GITCS. The mutual agreement with the original authors was reached without revision.

The construct validity and internal consistency reliability of the K-GITCS were also evaluated. First, a CFA was conducted to identify its structure. Second, Cronbach's alpha was used to examine whether the K-GITCS was internally consistent, elucidating how appropriately the items test the same construct [21].

3. Results

3.1 Participants' demographics and characteristics of the K-GITCS

The average age of the participants was 31.92 ± 7.10 years. Most of the participants were women ($n = 232, 93.17\%$), and the majority had a bachelor's degree in nursing ($n = 199, 79.91\%$). Their workplaces included the medical-surgical ward ($n = 159, 63.85\%$) and the intensive care unit ($n = 90, 36.14\%$).

Table 1 shows the number of responses to each item by the participants. Most participants responded with scores of either 4 or 5 on the scale. The highest score was for item number 15, "Describes what they are going to do before doing it." The lowest score was for item number 31, "Encourages feedback and input from the patient."

3.2 CFA

To measure the elements' fit to the data, a CFA was conducted on 35 items of the K-GITCS (Table 2 and Figure 2). The result from a chi-square test was statistically significant ($\chi^2 = 11298.07, df = 557, p < .001$).

Hooper, Coughlan, and Mullen [22] suggested that when reporting fit indices, the standardized root mean square residual (SRMR) should be included along with the non-normed fit index (NNFI), root mean square error of approximation (RMSEA), or the comparative fit index (CFI). The CFA's results were as follows: SRMR = 0.06, NNFI = 0.81, RMSEA = 0.07 and CFI = 0.82. An SRMR value lower than 0.08 is deemed acceptable for well-fitted models [23]. Further, it is recommended that the value of the NNFI, which is also known as the Tucker-Lewis index, should exceed 0.80 as the cutoff for a good fit [22]. The RMSEA is sensitive when choosing a model with fewer parameters, and the upper limit for a well-fitting model is

0.08 [22]. Meanwhile, it is argued that the CFI should exceed 0.70 [24], while another source proposes that a value above 0.95 is proper to ensure a good fit [23].

In addition to a model evaluation, the RMSEA and CFI should consider the number of estimates for the variables and the multifactor structure [25]. As a result, the CFA showed a good fit for the three-factor structure, which was acceptable and statistically significant at $p < .001$.

3.3 Criterion validation

The three subscales were correlated; however, the Pearson's correlation coefficients differed (0.26–0.71). This variation indicates that the three subscales evaluate different domains [26]. Thus, these findings suggest that the K-GITCS has good criterion validity (Table 3).

3.4 Descriptive statistics for the scores of the three domains

The three factors of the K-GITCS' scores were measured to assess ceiling and floor effects. There were no large clusters of cases at the end of the statistical distribution for any factor according to tests of additional histograms. In this respect, there was no evidence of skewness or kurtosis (Table 4).

3.5 Reliability analysis

The Cronbach's alpha was applied to inspect the internal consistency of the K-GITCS. In this study, the Cronbach's alpha for the entire scale was 0.94, indicating good internal consistency (Table 5). The elimination of some items resulted in reduced alphas, except for three items: 9, 12, and 16. For example, the removal of item number 12 in the K-GITCS reduced the coefficient alpha to 0.94.

The reliability coefficient for each of the three domains ranged from 0.49 to 0.94. Two of the K-GITCS subscales—trust and rapport building (23 items, Cronbach's alpha = 0.94) and power-sharing (seven items, Cronbach's alpha = 0.83)—showed high reliability. In comparison, empathy (five items, Cronbach's alpha = 0.49) had low reliability. The K-GITCS empathy subscale did not show good internal consistency in the self-reported questionnaire.

The corrected item-total correlation, i.e., the correlation between each item and the total score of the scale, was > 0.40 after excluding three items (9, 12, and 16). An item-total correlation coefficient exceeding 0.40 suggests a suitable correlation between the item and the total score [27].

4. Discussion

Mutual and goal-directed communication among healthcare professionals and patients is TC, which promotes the quality of care [1]. TC can encourage person-centered and integrated care because RNs can contribute to good health outcomes through timely verbal and nonverbal communication [1]. Hence, appropriate instruments to measure TC and suitable programs that can be used to identify and enhance the TC skills of RNs are required. This cross-cultural validation study presents a psychometric evaluation of the K-GITCS and certifies its fitness for RNs. Through this study, the hypothesis that the K-GITCS is a valid and reliable instrument for measuring the TC of RNs was confirmed. We investigated the construct validity, criterion validity, and reliability of the K-GITCS through a sample of RNs working at a tertiary hospital.

The goodness of fit of the K-GITCS was demonstrated by means of a CFA. The current study adopted the three-factor structure of the original instrument [17]. The CFA revealed that it is a good fit for the data and that it has a three-factor structure. However, no previous studies investigated the exploratory factor analysis (EFA) of the GITCS©. Further discussion about the instrument's factor structure and its use in actual clinical settings is necessary, as is additional research. More specifically, an EFA can confirm the latent variables and identify groups of items [21].

The reliability analysis evaluated the translated instrument's internal consistency. The suggested Cronbach's alpha for an evaluation tool is above 0.70 [21]. The K-GITCS© had a Cronbach's alpha value of 0.94 for the overall questionnaire, demonstrating good internal consistency. The values for trust and rapport building and for power sharing all exceeded 0.80, which are considered acceptable [21]. However, empathy, which consists of five items, had a Cronbach's alpha value of 0.49. When translating an instrument into other languages, cultural adaptation should be taken into account. Further, historical, social, and present situations can affect people's thinking and meaning interpretations [28]. Empathy is a key concept of genuine TC, and it ultimately depends on the relationships between practitioners, patients, and family members [29, 30]. Thus, empathy is a culturally and linguistically distinct concept. Depending on the culture or language, people can understand the same sentence in different ways. For example, item numbers 5 and 30 of the K-GITCS could be perceived as contradictory items. Item 5 states "maintain an appropriate distance" whereas item 30 is "stay beside the patient." Subjects may have thought that maintaining an appropriate distance is the opposite of staying beside the patient, although these two items are both TC competencies.

Cultural differences are imperative factors for communication instruments. Existing references demonstrated that the cultural background is considerable for validity and reliability as a measurement invariance [31–33]. Nursing researchers have to substantiate the measurement invariance after identifying the validity and reliability of a cross-cultural developmental instrument [34]. Further studies need to evaluate the measurement invariance between groups or longitudinal designs.

Additionally, differences in clinical environments, such as those caused by the different patient–RN relationships between South Korea and Canada, the atmospheres of different hospitals, and the scopes of nurses' authority, can also affect the validity and reliability of the GITCS©. In this context, North

American and East Asian clients have unique views of healthcare providers of each other. Asian cultures emphasize politeness or respect; communication is more earnest and weighed than in other cultures [1]. Depending on this cultural background, interpersonal relationships appear different, and RNs are required to consider the context to communicate with patients effectively. As empathy can occur in therapeutic relationships between RNs and their clients, we should accept the differences in atmospheres between these cultures. For example, Asian and Hispanic cultures attach significance to the family. It is therefore crucial to understand the dynamics of family interactions with empathy for patients and accept family-centered decision-making for Asians and Hispanics [1]. The core of person-centered care is to respect the values and preferences of patients or caregivers [35]. When nurses listen carefully to patients or caregivers in challenging clinical situations, it will help in the decision making regarding care plans with healthcare providers. It is clear that advanced communication skills, such as empathy, are pivotal for a person-centered care process [36]. Therefore, more studies are needed to learn about empathy in various cultures and their effects on TC between patients and healthcare providers.

Patients can feel left alone in a hospital, especially when they need unfamiliar healthcare services in a strange place [37]. The curing of diseases can be evidence-based without the individual, but the caring should consider individualization [38]. Person-centeredness has become a central concept in nursing and healthcare services, reflecting the shift in focus from healthcare providers to patients. The key to nursing care is the caring practice itself considering the interests of the patients and their characteristics [38]. Kawandi [39] noted that TC was the most important aspect provided by healthcare professionals in high-tech medical environments. Among healthcare professionals, RNs who remain at the patient's side for 24 hours are given much weight in patients' therapeutic relationships. In terms of the importance of TC, the abilities of RNs to acquire and interpret patients' psychosocial status or experiences are essential. Furthermore, advanced communication is paramount in person-centered nursing for optimal clinical nursing practice. Nurses must involve patients in their care process through positive, attentive interaction, and information sharing. Person-centered communication can improve patient satisfaction with the quality of nursing and reduce issues related to patient safety.

4.1 Limitations

This instrument-development study has several limitations. First, this study was surveyed in only one tertiary hospital with a group of experienced RNs. Consequently, careful should be exercised when generalizing the scope of the results. Second, the GITCS© was initially developed to evaluate the effects of simulation education. Although Campbell and Aredes, the developers of the GITCS©, explained that the GITCS© can be used as a self-reported scale, differences in results cannot be ruled out. Finally, additional research is needed to confirm the validity and reliability of the K-GITCS in different settings, including learning environments that use simulations.

5. Conclusion

Overall, this study found that the K-GITCS has suitable validity and reliability as an instrument to measure the TC skills of RNs working in a tertiary hospital. This study has the significance of being the first effort to exhibit the psychometric properties of the Korean version of the GITCS. The original instrument was developed to enable instructors to assess their students' TC skills, but this study confirmed that the instrument can be used for self-reported assessments. The K-GITCS can accurately evaluate the TC skills of RNs and provide useful insights and can serve as the basis for appropriate and competent interventions. Future research can verify the K-GITCS's utility by testing its psychometric properties, such as patients' perspectives toward the care they receive, with various groups, including nursing students and other healthcare providers. Additionally, the next step for future studies can be to assess and explore the factors associated with TC by using the K-GITCS to provide a well-structured and tailored educational intervention program for healthcare professionals.

6. Abbreviations

GITCS[®]: The Global Interprofessional Therapeutic Communication Scale[®]

K-GITCS: The Korean version of the Global Interprofessional Therapeutic Communication Scale

TC: Therapeutic Communication

RN: Registered Nurse

CFA: Confirmatory Factor Analysis

SRMR: Standardized Root Mean Square Residual

NNFI: Non-Normed Fit Index

RMSEA: Root Mean Square Error of Approximation

CFI: Comparative Fit Index

EFA: Exploratory Factor Analysis

7. Declarations

7.1. Ethics approval and consent to participate

This study obtained approval from the Institutional Review Board of Severance hospital (Y-2019-0001). Researchers obtained permission from the division of nursing of a tertiary hospital in Seoul, Korea. Written consent was procured from all registered nurses prior to the start of the survey. All methods were carried out in accordance with relevant guidelines and regulations.

7.2. Consent for publication

Not applicable

7.3. Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author upon a reasonable request.

7.4. Competing interests

The authors declare that they have no competing interests.

7.5. Funding

This work was supported by a 2018 grant from Yonsei University College of Nursing, and the institution had no role in the collection, design, analysis, or writing of the manuscript.

7.6. Authors' contributions

JHL (PI), SHC, and SH contributed substantially to the conceptualization and design. Field data collection was conducted by SH. JHL (PI) and SH participated in the investigation, formal analysis, and writing and revising of the paper. SHC and NDAA made substantial contributions to the validation of the study and to the reviewing and editing of the paper.

7.7. Acknowledgements

The authors would like to thank the registered nurses who participated in this study for their time and patience.

7.8. Authors' information

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Tables

Table 1

Distribution of responses to each item on the K-GITCS (N=249)

No.	Items	Numbers of RNs giving each response					M ± SD
		1	2	3	4	5	
<i>Trust and Rapport Building</i>							
10	Asks permission to touch BEFORE doing anything to the patient (e.g. blood pressure, dressing, palpitation)	1	4	30	106	108	4.27 ± 0.77
11	Personalizes questions providing the patient an opportunity for active communication (open-ended question versus close-ended question)	0	1	20	137	91	4.28 ± 0.62
13	Conducts the communication in a culturally safe manner	0	12	78	118	41	3.76 ± 0.78
14	Uses questions in a balanced way, avoiding patient's passive participation (e.g. only responding to questions)	0	3	53	141	52	3.97 ± 0.69
15	Describes what they are going to do BEFORE doing it	0	0	10	116	123	4.45 ± 0.57
17	Makes direct eye contact, if in a face-to-face communication encounter, as appropriate to the culture	0	4	42	137	66	4.06 ± 0.70
18	Provides appropriate feedback encouraging communication	0	4	32	140	73	4.13 ± 0.69
19	Allows expression of feelings and thoughts	0	5	39	143	62	4.05 ± 0.70
20	Identifies potential conflict and finds opportunities to gather information to minimize or manage it	0	2	47	140	60	4.04 ± 0.68
21	Maintains contact appropriate to the culture when talking with the patient and/or family (e.g. eye contact, distance, spatial approximation)	0	3	34	154	58	4.07 ± 0.64
22	Listens attentively and answers questions	0	0	15	146	88	4.30 ± 0.58
23	Provides balanced time on psychosocial and clinical aspects of patient care depending on the context	0	8	71	130	40	3.81 ± 0.74
24	Seeks input from the patient regarding their feelings and goals	0	2	23	160	64	4.15 ± 0.60

25	Balances listening and talking	0	8	46	152	43	3.92 ± 0.70
26	Recognizes and responds to patient's non-verbal reactions	0	5	57	146	41	3.90 ± 0.68
27	Touches the patient in a culturally respectful manner	0	3	40	154	52	4.02 ± 0.65
28	Speaks in an appropriate tone and volume given the situation	0	0	38	152	59	4.08 ± 0.62
29	Encourages feedback and input from patient	0	5	41	156	47	3.98 ± 0.66
31	Encourages patient reflection on their behavior to mobilize change	0	20	112	90	27	3.50 ± 0.79
32	Offers patient opportunities to organize and express their thoughts about the messages	0	13	62	125	49	3.84 ± 0.80
33	Explains differently if necessary according to patient's feedback	1	4	52	142	50	3.95 ± 0.71
34	Where possible provides for privacy and minimal interruptions during the interaction	0	6	54	134	55	3.96 ± 0.71
35	Demonstrates knowledge about patient's case or situation	0	1	24	150	74	4.19 ± 0.61
<i>Power-Sharing</i>							
1	Introduces self by name and title without prompting	0	3	38	118	90	4.18 ± 0.73
2	Provides a professional greeting given the context	0	5	15	126	103	4.31 ± 0.68
3	Verifies comprehension (patient understands information)	0	1	8	123	117	4.43 ± 0.58
4	Verbalizes interest in patient and their perspective, encouraging rapport	0	4	25	129	91	4.23 ± 0.70
6	Encourages feedback and enhances clarity of	0	2	22	139	86	4.24

	communication session						± 0.64
7	Purposefully explains mutually established goals for the visit	0	2	29	113	105	4.29 ± 0.71
8	Provides accurate information to the patient at the level they understand	0	1	23	144	81	4.22 ± 0.62
Empathy							
5	Demonstrates appropriate proximity to the patient or family according to culture and context	0	0	25	171	53	4.11 ± 0.55
9	Infers falsely, jumps to conclusions related to patient's behaviors	7	16	33	160	33	3.79 ± 0.86
12	Gives advice rather than explain options and alternatives	10	23	63	132	21	3.53 ± 0.92
16	Gives unsupported (false) reassurance	4	11	31	123	80	4.06 ± 0.88
30	Sits or remains level with the patient when possible given the context/situation	0	9	61	130	49	3.88 ± 0.76

Table 2

Goodness of fit indices The Korean Version of the Global Interprofessional Therapeutic Communication Scale (K-GITCS) (N=249)

Chi-square (χ^2)	1298.07
Degrees of freedom (<i>df</i>)	557
Standardized root mean square residual (SRMR)	0.06
Non-normed fit index (NNFI)	0.81
Root mean square error of approximation (RMSEA)	0.07
Comparative fit index (CFI)	0.82

Table 3

Correlation among Three Factors of the Korean Version of the Global Interprofessional Therapeutic Communication Scale (K-GITCS) (N=249)

	Factor 1	Factor 2	Factor 3
Factor 1	1		
Factor 2	0.71**	1	
Factor 3	0.40**	0.26**	1
Factor 1=trust and rapport building, Factor 2=Power-sharing, Factor 3=Empathy ** p<.001			

Table 4

Descriptive statistics for the scores on the three factors (N=249)

	Factor 1	Factor 2	Factor 3
Mean	0.00	0.00	0.00
SE of Mean	0.06	0.06	0.05
Median	-0.03	0.03	0.18
SD	0.87	0.81	0.72
Skewness	-0.05	-0.02	-1.1
SE of Skewness	0.15	0.15	0.15
Kurtosis	0.36	-0.38	1.79
SE of Kurtosis	0.31	0.31	0.31
Minimum	-2.69	-3.11	-3.31
Maximum	2.18	1.89	1.74
Factor 1=trust and rapport building, Factor 2=Power-sharing, Factor 3=Empathy			

Table 5

Cronbach's alpha of each subscales of the Korean Version of the Global Interprofessional Therapeutic Communication Scale (K-GITCS) (N=249)

Subscale	No. of Items	Mean \pm SD	Cronbach's alpha
Total	35	141.98 \pm 13.99	0.94
Factor 1 Trust and rapport building	23	92.69 \pm 10.40	0.94
Factor 2 Empowering	7	29.92 \pm 3.27	0.83
Factor 3 Empathy	5	19.37 \pm 2.30	0.49
Factor 1=trust and rapport building, Factor 2=Power-sharing, Factor 3=Empathy			

Figures

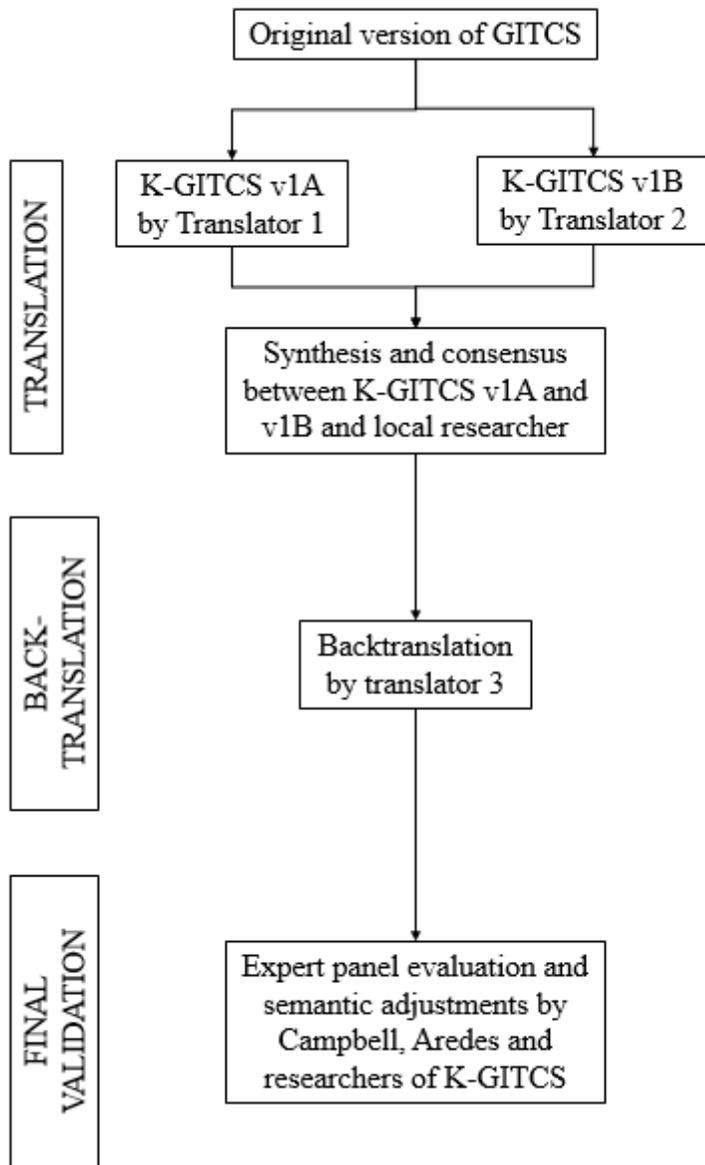


Figure 1

Translation process of GITCS

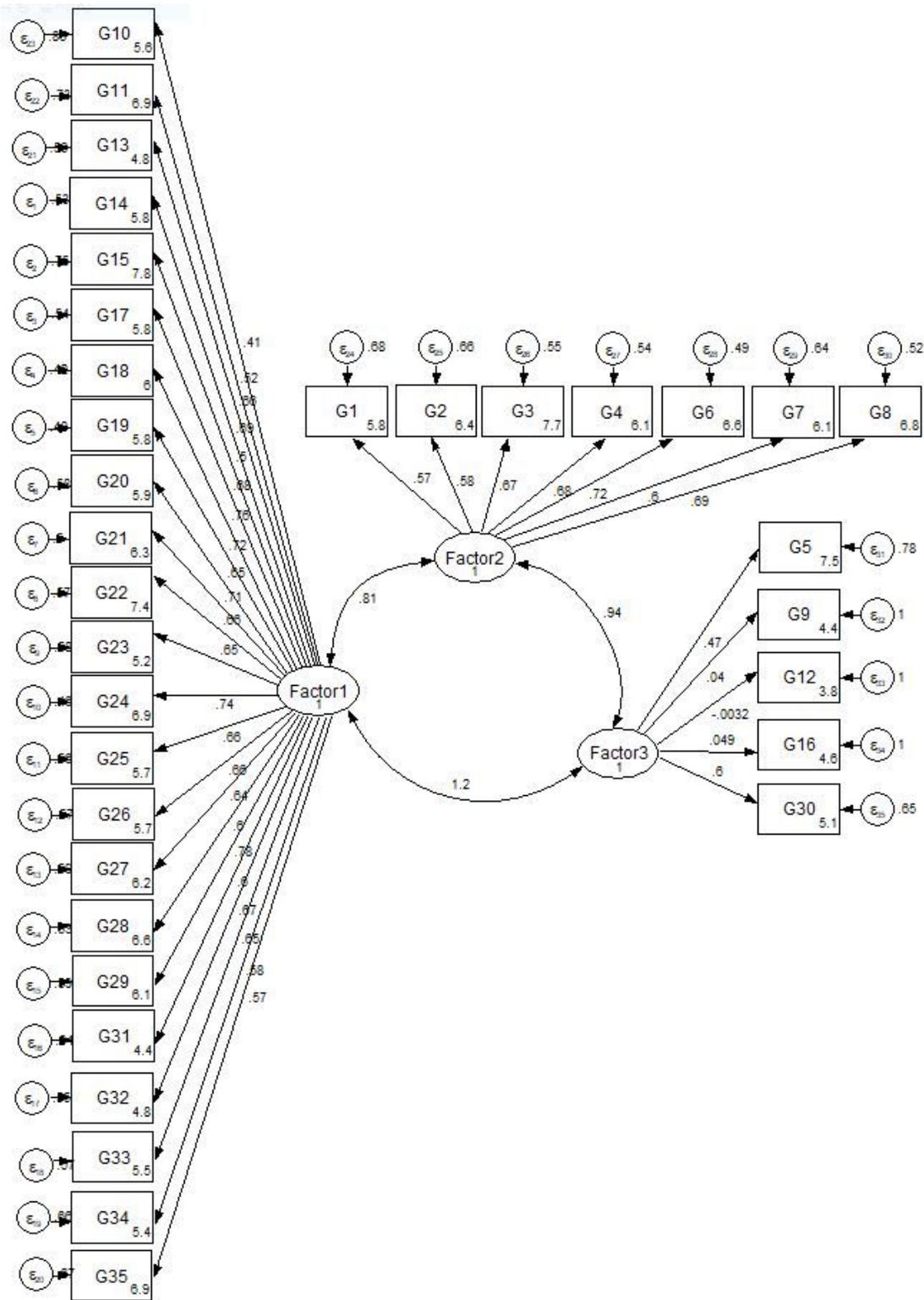


Figure 2

Items and factors' Cronbach's alpha coefficients.