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Featured Article

Global Interprofessional Therapeutic Communication Scale© (GITCS©): Development and Validation

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empowerment;
patient participation;
patient advocacy

Abstract

Background: This article reports the development and psychometric testing of the Global Interprofessional Therapeutic Communication Scale© (GITCS©), an instrument designed to measure culturally appropriate provider-patient communication, giving formative and summative evaluation for multiple health professionals.

Method: Using DeVellis' (2016) eight-step instrument process, the 44-item GITCS© was developed with input from a team of interprofessional experts and tested with 592 unique crowd source viewers using International Nursing Association Clinical and Simulation Learning Standards of Best Practice—based videos to evaluate the Likert-type scale. Psychometric reliability (coefficient alpha) and validity (confirmatory factor analysis) were tested using R.

Results: The second-order model contained a single latent variable representing overall quality of the therapeutic relationship and three lower level constructs: Factor 1: trust and rapport building (23 items); factor 2: power sharing (9 items); and factor 3: empathy (9 items). Two items were excluded based on experts' opinion, and one item was deleted because it was repetitive.

Conclusion: The GITCS© demonstrates initial reliable measurement of therapeutic communication with strong statistical support of its underlying factors. It has the potential to facilitate faculty teaching and assessment of student's therapeutic communication skills, in both simulation and clinical settings. It needs further testing to demonstrate the multifaceted conceptualization of reliability in simulated, clinical, and virtual environments by faculty, health professionals, and students.

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Background

The fundamental theme of health communication and therapeutic relationship has long been a focus of health professional education, and nursing aims to educate reflective practitioners who are effective communicators. There is a lack of reliable and valid instruments for use in simulation, clinical assessment, and evaluation, especially for the assessment of nontechnical skills (Campbell, Aredes, & Dhari, 2018). Today, practitioners need to align their

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communication with ever-changing patient and population needs, allowing for collaboration and partnering to strengthen health at a system level (Strada, Vegni, & Lamiani, 2016).

The Global Interprofessional Therapeutic Communication Scale© (GITCS©) was developed to be used during initial and continuing education of interdisciplinary students in simulated or clinical settings by faculty, peers, or individuals self-assessment, allowing for benchmark, formative, and summative evaluation.

Key Points

- Teaching, assessing, and enhancing communication during patient-provider interactions in health care settings needs valid and reliable instruments to measure the behaviors.
- Using simulation to teach, assess, and role model effective therapeutic communication requires a method of evaluation such as GITCS©.
- Therapeutic relationships start with health communication that is empathetic, builds rapport and trust, and focuses on advocacy and empowerment of patients.

When done well, communication supports patients' treatment and care and is described in the nursing literature as therapeutic communication (Bhui et al., 2015). This method of developing relationship through communication can lead to well-being, safety, comfort, and enhanced trust in individual interactions between providers and patients (Deering, Johnston, & Colacchio, 2011). In addition, when performed at multiple levels between providers, administrations, and patients, it can enhance trust in the health care system (Hofmeyer & Marck, 2008; IPEC, 2011).

The provision of therapeutic communication addresses patients and family's concerns with empathy and focuses on their well-being. Professionals who anticipate situations where conflict may arise and offer information to improve patients' understanding of what is happening in all areas of health prevention, promotion, and recovery are communicating well (Bhui et al., 2015; Zwingmann, Baile, Schmier, Bernhard, & Keller, 2017). Historically, nursing theorists have advocated for a therapeutic use of self to develop interpersonal relationships with patients that lead to healing and health (Peplau, 1991). Through therapeutic communication, health care professionals contribute to patient-centered care and quality improvement, global goals of health care.

Communication is critical to safe, quality-focused, patient-centric health care delivery, yet health professionals communicate diversely using many different approaches. Research demonstrates that patients relate to the different approaches with positive and negative responses (McFarland, Shen, & Holcombe, 2017; Zwingmann et al., 2017). Personality and individual preferences can affect relations mediated by communication, thus requiring health care professionals to be conscious of their own biases and adopt a level of cultural sensitivity (Henderson & Barker, 2018). This article will describe the development, reliability, and validity testing of GITCS©.

Theoretical Basis for Instrument Development

This research project is based on the underlying middle range nursing theory of interpersonal relations and therapeutic use of self in the nurse-client relationship (Council, 2014; Peplau, 1991; Zarea, Maghsoudi, Dashtebozorgi, Hghighizadeh, & Javadi, 2014) and experiential learning theory (Kolb, 1984), as well as incorporating two frameworks for the development and testing of the scale. The first framework relates to the importance of communication as a critical element in nursing education, and the ability to teach and assess it using simulation is included in the Framework for Simulation Learning in Nursing Education (Daley & Campbell, 2018). Secondly, DeVellis'(2016) best practice approach to instrument development was used to guide the creation and testing of GITCS©. Daley and Campbell (2018) posit that thinking critically, communicating effectively, and intervening therapeutically are three core components of being a nurse and that simulation is a method by which nursing students can translate knowledge to practical application in a safe environment. Simulation as an experiential learning strategy incorporates Kolb's theory (1984) and can be implemented within behaviorist or constructivist philosophical paradigms or educational theories (Parker & Myrick, 2009). The development of GITCS© took into consideration the interactive nature of health communication within the development of a therapeutic relationship, the venue of simulation for learning about, practicing, and developing skills in this area, and the experiential learning opportunity that simulation provides.

Considering the gap and level of inconsistency in teaching, assessing, and enhancing communication (Kameg, Howard, Clochesy, Mitchell, & Suresky, 2010; Pagano et al., 2015), this research aimed to develop a reliable and valid instrument to support therapeutic communication education that incorporates interprofessional and culturally flexible perspectives. The goal was to create an instrument that could be used by faculty and students to assess communication skills in a simulated, clinical, or virtual environment. This article will explore the development and testing of an instrument to measure patient-provider communication.

Methods

This section is organized by DeVellis' (2016) eight-step process for instrument development, providing detail for each phase to outline the rigor of the work and be replicable. Ethical review was approved by the University

of British Columbia Behavioural Research Ethics Board (Project# H16-03398).

Step 1: Clearly determine what is to be measured—consult a team of experts (DeVellis, 2016). Before developing a new instrument, which is a time-consuming process, it is important to review the literature for other scales that may measure the concept. GITCS© development began when the authors tried using the Health Communication Assessment Tool© (Pagano et al., 2015) in Canada and translating it into Portuguese for use in Brazil (Goes, Aredes, Hara, Fonseca, & Campbell, 2017). The scale had low inter-rater reliability when tested in a province in Canada and had elements that represented a United States medical-centric perspective. The researchers examined the literature further, going back to the roots of mental health nursing and Peplau's theory (Peplau, 1991) to identify definitions and concepts related to therapeutic communication. They set out to develop items that would be globally and interprofessionally relevant to assess provider-patient communication. Thus, combined findings from scientific literature on therapeutic relationship and health communication, theoretical underpinnings, specific references in the theme, and empirical observations in both simulated lab practice and supervision of students in clinical practicum were used to develop this scale.

The review of literature identified many instruments used to measure health communication and to analyze the elements of therapeutic relationship, but most were specific to medical students (Baumann, Baumann, Le Bihan, & Chau, 2008; Caron et al., 2013; Siminoff et al., 2011), nursing students (Campbell, Pagano, O'Shea, Connery, & Caron, 2013; Pagano et al., 2015), or specific populations and health conditions such as patients with cancer (Aranda & Yates, 2009). These instruments were compared and discussed fully (Campbell et al., 2018), and the researchers' decision was to create a new scale to measure provider-patient therapeutic communication in a culturally sensitive manner from an interprofessional and global perspective.

Step 2: Generate a pool of items—literature review and content experts (DeVellis, 2016). After reviewing the literature, GITCS© was developed creating 44-items based on the main constructs of empathy, education, trust and rapport building, and power sharing. In addition, methods of active communication were considered when developing the items: active listening, asking questions, nonverbal communication, cultural factors, verbal interventions, barriers, and boundaries. Each item was then contemplated from a global perspective to provide a general sense of therapeutic communication worldwide and respect differences among cultures, especially related to greetings, eye contact, and spatial proximity. As one researcher has a US/Canadian perspective with years of international collaboration and the other a Brazilian perspective with a bilingual and multicultural perspective, they worked very closely and carefully on each item dissecting the meaning of individual words and capturing the measurement of the various constructs and methods of therapeutic communication.

Step 3: Decide on the format for measurement—behavioral observation rubric (DeVellis, 2016). The scale incorporated a Likert rating format, varying from never to always, with the intermediaries: rarely, sometimes, and usually (see Table 1), considering that during each communication episode, it is ambiguous to classify the behavior event as "agree" or "disagree" and is too limited to classify them as "yes" or "no." In addition, a field, "not applicable," was included for instances when the item was not expected to happen depending on the situation. After carefully examining the research (Kalton, Roberts, & Holt, 1980; Moors & Kieruj, 2010; Saris & Gallhofer, 2014), descriptors and their definitions were agreed on through an iterative and collaborative process with the experts. Given that the scale is assessing behaviors that are expected, but may occur more than once, the decision was made to provide descriptors that reflect opposites. The descriptor "never" is opposite to "always," "rarely" is opposite to "usually," and "sometimes" is not neutral, it is less

Table 1 Descriptor Rubric as Basic Instructions to Guide the Use of GITCS©

Descriptor Code	Meaning
Never	Behavior described is not observed, however, was expected (e.g. does not verify comprehension when educating)
Rarely	Behavior is performed once, however, was expected to occur more times or always
Sometimes	Behavior happens more than once but not consistently (use the proportion 2 of 5 occurrences during communication event)
Usually	Behavior occurs most of the time (use the proportion 3 of 5 occurrences during communication event)
Always	Consistently acts accomplishing what the item describes (e.g. introducing self is marked as always, despite occurring only at the beginning because it is expected to happen just once and listening attentively during all communication event if performed as expected)
Not applicable	Behavior not expected considering the context of interaction (e.g. does not ask permission to touch because no procedures are performed)

Note. GITCS = Global Interprofessional Therapeutic Communication Scale©.

frequent than ''usually'' and more frequent than ''rarely''; it is progressive, and it indicates that the behavior did occur. Participants using the scale were provided with specific definitions and examples of the descriptors.

Step 4: Review of initial item pool by experts—face validity by content experts (DeVellis, 2016). Initial face validity testing was done on the entire scale by ten nurse and physician educators, who are also seasoned faculty and experts in simulation. The two-step process of Lynn (1986) was followed to establish content validity of GITCS©. During the development stage, content domains were identified, items were generated, and item construction resulted in 44 items. During the judgment stage, the expert panel was solicited and participants were selected based on their expertise, job positions, knowledge of health education, health communication, instrument development, and availability. The expert panel was provided the items and given definitions of the constructs and methods and identified the underlying construct and method of each item. Correlations for all items were compared and supported which items to keep.

Step 5: Validation of items—content validity appraisal and revision (DeVellis, 2016). Content validity, feasibility, and usability was done by a panel composed of sixteen experts with 3 to 35 years of experience in teaching, who were members of faculty teams, working in theory, simulated, and practicum scenarios with interdisciplinary students. After the 44-item scale was reviewed and edited by the principal investigators, it was pilot-tested with the panel using a video of therapeutic and nontherapeutic communication. The experts watched the videos simultaneously during a research team workshop, completed the scale, and then compared scale results as a group, providing feedback on wording, descriptors, and redundancies of items. The expert panel reviewed the scale in two rounds; the principal investigators were present at both rounds. Ten of these experts then evaluated the three professionally developed videos as part of the crowdsourcing confirmatory factor analysis (CFA), and their scores were used to determine intraclass correlations for each of the items.

Concurrently, three videos were scripted and produced based on International Nursing Association Clinical and Simulation Learning Standards of Best Practice (INACSL, 2016) and on a simulation scenario that was tested in nursing simulation over multiple years (Mager, 2012). These videos represented therapeutic communication, nontherapeutic communication, and mixed aspects of therapeutic and nontherapeutic communication, by using variations of communication behaviors during the interaction between a public health nurse and an older adult with diabetes during a professional home visit. Figure 1 shows the setup for the professionally developed videos.

Step 6: Administer to development sample—pilot sample (DeVellis, 2016). Past testing of other communication instruments have included international and interprofessional experts, often using videos and asking the experts to use the scale to assess the video and then doing CFAs (Pagano et al., 2015). Considering the time and participant burden of the use of a 44-item scale with long videos (eight to thirteen minutes in length), the authors explored the idea of using a crowdsourcing format to test the instrument.

In the past, crowdsourcing has been used to get robust feedback quickly on specific technical skills such as surgical operation procedures (Chen et al., 2014; Holst

Figure 1 Scenes during video-recording for GITCS© testing. *Note*. GITCS = Global Interprofessional Therapeutic Communication Scale©.

Table 2 Validation Process for GITCS© Based on DeVellis' Method (DeVellis, 2016)

Type of Validation	Goal	Method Used
Step 4: Face	GITCS© measures therapeutic communication between the provider and patient by experts' first analysis	Expert panel review (n = 16)—reviewed professionally developed videos of effective, ineffective, and mixed communication Pilot feedback incorporated
Step 5: Content	GITCS© content is relevant to improve therapeutic communication	Expert panel reviewed three videos professionally developed for effective, ineffective, and mixed communication
Step 4: Construct	Content of items matches therapeutic communication constructs	Expert panel review (n = 10) reviewed each item and identified construct, ICC calculated
Step 7: Inter-rater reliability	The scale is reliable when different people measure the same performance	Crowdsourcing (n = 592) compared with 10 people expert panel reviewers based on three professionally developed videos
Concurrent	The scale provides different results compared to another validated instrument in the same theme	Initial testing with HCAT demonstrated some similarity—requires further testing
Predictive	GITCS© predict improvement in therapeutic communication performance	Future testing through students' performance in simulated scenarios and clinical practice assessment

Note. GITCS = Global Interprofessional Therapeutic Communication Scale©; HCAT = Health Communication Assessment Tool©.

et al., 2015; Vernez et al., 2017). The strategy works well when one aims to reach large sample sizes, and it is a feasible method that requires low resource investments. Studies on crowdsourcers have found that it can improve quality, diminish cost and time (Deal et al., 2016), and also achieve similar scoring when comparing professional (expert) evaluators and the general public (Ranard et al., 2014).

Collaborating with the professionals at C-SATS (a performance management system and team), the researchers used crowdsourcing via their platform to recruit a total sample of 592 unique crowd workers who reviewed 887 videos (approximately 300 views per video). These completed instruments were compiled and compared with the ten experts for intraclass correlation determination and for CFA.

Intraclass correlation was calculated from the full set of 30 expert ratings (10 experts, rating all three videos) using Stata reports (StataCorp, 2017) and a two-way random-effects model looking for absolute agreement at the individual level. Because this scale was developed for individual faculty or student use (and not three or more faculty ratings that would be averaged), we used the individual output results. Statistical analysis applied intraclass correlation (ICC) and internal consistency through coefficient alpha to supply ICCs on each item. The researchers used the following cutoffs: poor if ICC <0.40, fair if between 0.40 and 0.59, good if between 0.60 and 0.74, and excellent if between 0.75 and 1.0 (Cicchetti, 1994). This led to retaining or deleting specific items.

A summary of the methodology and validation process is described in Table 2.

Results

Results of Development Phase of GITCS©

After a thorough review of the literature (between July and September 2016) examining instruments previously created to measure health communication, five possible instruments were identified: Siminoff Communication Content and Affect Program (Siminoff et al., 2011), Objective, Structured Communication Assessment of Residents (Caron et al., 2013), T-Com-skill scale (Baumann et al., 2008), Health Communication Assessment Tool (Pagano et al., 2015), and Competency Assessment Tool for Therapeutic Communication (Aranda & Yates, 2009).

The purpose of these instruments varied from codifying health communication interactions, training medical students in communication skills, measuring patients' perception of medical doctors' communication, communication skills of nurses dealing with patients with cancer, and finally describing an instrument's use in the education of nursing students during simulations.

The development phase analyzed each one of the instruments using as a guide Peplau's theory of interpersonal relationships (Peplau, 1991), the mental health references related to the theme of therapeutic communication, and keeping in mind the need to address different cultural

Table 3 Examples of Changes Made Based on Experts' Suggestions

Previous Item	Suggested Change
… offers patient opportunities to organize and express their thoughts about the messages.	… offers patient opportunities to organize and express their thoughts.
… asks questions that showed their interest and	… encouraged feedback and input from patient/family.
… uses encouraging communication purposefully providing appropriate feedback	… provides appropriate feedback encouraging communication.
… gives advice.	… gives advice rather than explain options and alternatives.

contexts. Despite the strengths of each instrument, none presented a global perspective for diverse types of use. The authors were looking for an instrument that went beyond flexibility at different levels of the health care system, and also incorporated uses for distinct cultures, taking into consideration how items might translate and fit a global context for all health care professionals. Despite the fact that some of the instruments found in the literature review share some aspects with GITCS©, the new scale is different from others because it features an interprofessional approach to therapeutic communication and the global perspective that recognizes respect for others' culture. Next, the group of experts evaluated the content validity of the items developed.

Content Validity, Feasibility, and Usability

A carefully selected panel of experts included sixteen faculty members: 14 nurses, one physician, and one physiotherapist, the majority MS/PhD prepared, with expertise in simulation pedagogy and health care communication. In round 1, the 44 items of the instrument were categorized into constructs: introduction, empathy, trust building, education, power sharing, develop rapport, or other. This resulted in expert-construct consistency scores calculated using SPSS® (IBM Crop, 2017) ranging from 12.5% (the three reverse scored items) to 93.8%. When key areas were combined (develop rapport and trust building; power sharing and education; and empathy), round two of expert panel review resulted in higher expert-construct consistency scores (Jonsson & Svingby, 2007). The expert-construct consistency scores and the qualitative data supplied by the expert panel provided input for edits to the items that enhanced item validity related to constructs, clarity, and readability. The sixteen members of the expert panel suggested changes that were made to improve clarity and fit with constructs, as the examples in Table 3 outline.

Experts also identified those items that may not be appropriate under certain circumstances, for example, the initial item "encourages patient reflection on their behavior to mobilize change" may not be applicable if the patient received a recent diagnosis of cancer or was experiencing exposure to violence or past trauma.

Finally, the scale was used in a live scenario with students and standardized patients, then students, and faculty compared the assessments made using GITCS©. This was a pilot for feasibility testing that allowed further consideration of the items. This experience and informal live testing of the scale led to nearly unanimous consensus by faculty on the videos observed. This resulted in informal feasibility and usability testing of the scale, and faculty experts stated its usefulness and importance for health students' education. The final results of this phase resulted in the 44-item scale described previously and led to the next phase of testing, CFA.

Results of Testing Phase: Confirmatory Factor Analysis

A representation of the results can be found in Figure 2, providing a visual depiction of the workflow method used in this research.

Initial item generation included those related to active listening, empathy, empowerment, verbal and nonverbal communication, rapport and trust building, barriers, and cultural boundaries. The two rounds of expert panel reviews pared the scale to 44 items, identifying three corresponding constructs: empathy, power sharing, and rapport/trust building. Reliability and construct validity of the 44-item GITCS© was assessed using data from 592 unique crowdsource viewers who watched 887 videos, one or more of the three professionally developed videos, and used the GITCS© to evaluate the health care provider.

The 44 items of the GITCS© were subjected to CFAs using R (R Core Team, 2013). Before performing the CFA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Olkin value was 0.98, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974), and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance supporting the factorability of the correlation matrix.

Confirmatory factor analysis indicated that a second-order factor model of general therapeutic relationship containing three subfactors (empathy, trust and rapport, and power sharing) provided a good fit to the data (chi square [776 degrees of freedom {DF}] = 2,798.978, $p < .01$; root mean square error of approximation = 0.054 [90% CI: 0.052-0.056]; comparative fit index = 0.913; standardised root mean square residual = 0.048). An inspection of the scree plot revealed

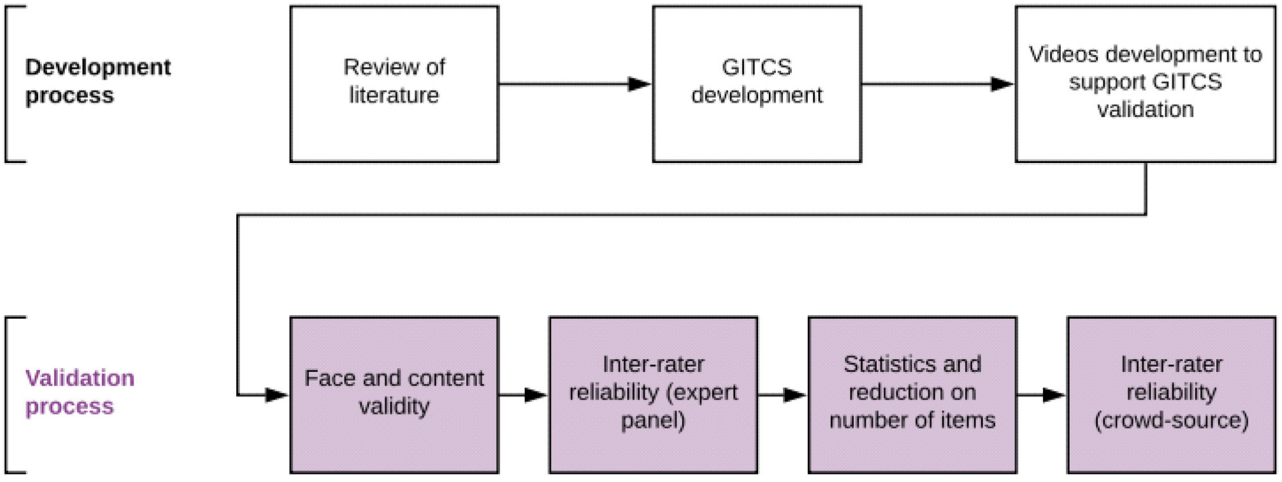

Figure 2 Method workflow for development and validation of GITCS©. *Note*. GITCS = Global Interprofessional Therapeutic Communication Scale©.

a clear break after the third component. Using Cattell (1966) scree test, it was decided to retain three components for further investigation (Cattell, 1966; Ledesma, Valero-Mora, & Macbeth, 2015). The one-factor solution explained 50.8% of the variance.

The second-order model also provided a significantly better fit than a single factor model (Satorra-Bentler scaled chi square difference [3DF] = 763.975, $p < .01$), which demonstrated moderate to good fit (chi square [779 DF] = 3,562.953, $p < .01$; root mean square error of approximation = 0.063 [90% CI, 0.061-0.066]; comparative fit index = 0.880; standardised root mean square residual = 0.049). The three-factor solution explained 59.8% of the variance. Coefficient alpha for the GITCS© scale was excellent (0.95).

The final 35-item scale with retained items is composed of reverse scored items (9, 12, and 16) and incorporates the constructs: power sharing (items 1, 4, 6 and 8); empathy (items 5, 9, 12, 16, and 30); and trust and rapport building (10, 11, 13-15, 17-29, and 31-35). A nonorthogonal oblimin rotation was chosen, in consultation with the statistician, to allow for correlation among the factors. The rotated solution revealed the presence of simple structure (Thurstone, 1947), with the three components showing a number of strong loadings and all variables loading substantially on only one of the three components. Figure 3 represents main constructs of therapeutic communication of GITCS© associated with the perspective of a multicultural world using a global, interprofessional point of view.

The final 35-item GITCS© that resulted from the CFA is represented in Figure 4.

Reliability by Expert Panel and Crowdsourcing—Retaining and Excluding Items

Single-measure consistency intraclass correlation (ICC) was good (11 items) to excellent (26 items) for 37 of the 44 items (ICC >0.60); therefore, the poor and fair items were reviewed for exclusion. A judicious review of all items, comparing the poor and fair ICC items constructs/variables to the remaining good and excellent items, resulted in the exclusion of all but three of the poor/fair ICC items. The researchers decided to keep these items related to their belief that they were measuring an important component of therapeutic communication not represented by the remaining items and an area that needed further testing. In addition, four items classified as good, yet were excluded because other items classified as excellent had similar meaning in the scale and matched the desired related constructs.

In summary, item 28 was maintained instead of item 24 because the researchers believed it provided a more global

Figure 3 Single latent variable of GITCS©—therapeutic relationship, with main constructs: empathy, power sharing, trust and rapport building. *Note*. GITCS = Global Interprofessional Therapeutic Communication Scale©.

Global Interprofessional Therapeutic Communication Scale (GITCS)

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(1) Never – does not happen while is expected for the interaction observed
(2) Rarely – happens once but not again (if appropriate/required) (e.g. introduction may happen once and be considered "always", listens and answers questions may happen 1 out of 5 times)
(3) Sometimes – happens more than once but not consistently – (e.g. expect explanation of actions each time, and happens 2 out of 5 times)
(4) Usually – happens most of the time – (e.g. expect verification of comprehension each time, and happens 3 out of 5 times)
(5) Always – consistently does the behavior as expected
(NA) Not applicable – behavior not expected for interaction observed (e.g. does not ask permission to touch because is not doing any procedures)

1	Introduces themselves by name and title without prompting	1 2 3 4 5 NA	
2	Provides a professional greeting given the context	1 2 3 4 5 NA	
3	Verifies comprehension	1 2 3 4 5 NA	
4	Verbalizes interest in patient and their perspective, encouraging rapport	1 2 3 4 5 NA	
5	Demonstrates appropriate proximity to the patient or family according to the context	1 2 3 4 5 NA	
6	Encourages feedback and enhances clarity of the communication session	1 2 3 4 5 NA	
7	Purposefully explains mutually established goals for the visit	1 2 3 4 5 NA	
8	Provides accurate information to the patient at the level they understand	1 2 3 4 5 NA	
9	Infers falsely, jumps to conclusions related to client's behaviors	1 2 3 4 5 NA	
10	Asks permission to touch BEFORE doing anything to the patient (e.g. blood pressure, dressing, palpation)	1 2 3 4 5 NA	
11	Personalizes questions providing the patient an opportunity for active communication (open-ended question versus close-ended question)	1 2 3 4 5 NA	
12	Gives advice rather than explain options and alternatives	1 2 3 4 5 NA	
13	Explains the reason for the communication in a culturally safe manner	1 2 3 4 5 NA	
14	Uses questions in a balanced way, avoiding patient's passive participation (e.g. only responding to questions)	1 2 3 4 5 NA	
15	Describes what they are going to do BEFORE doing it	1 2 3 4 5 NA	
16	Gives unsupported (false) reassurance	1 2 3 4 5 NA	
17	Makes direct eye contact, if in a face-to-face communication encounter, as appropriate to the culture	1 2 3 4 5 NA	
18	Provides appropriate feedback encouraging communication	1 2 3 4 5 NA	
19	Allows expression of feelings and thoughts	1 2 3 4 5 NA	
20	Identifies potential conflict and finds opportunities to gather information to minimize or manage it	1 2 3 4 5 NA	
21	Maintains contact appropriate to the culture when talking with the patient and/or family (e.g. eye contact, distance, spatial approximation)	1 2 3 4 5 NA	
22	Listens attentively and answers questions from the recipient	1 2 3 4 5 NA	
23	Provides balanced time on psychosocial and clinical aspects of patient care depending on the context	1 2 3 4 5 NA	
24	Seeks input from the patient regarding their feelings and goals	1 2 3 4 5 NA	
25	Balances listening and talking	1 2 3 4 5 NA	
26	Recognizes and responds to patient's non- verbal reactions	1 2 3 4 5 NA	
27	Touches the patient in a culturally respectful manner	1 2 3 4 5 NA	
28	Speaks in an appropriate tone and volume given the situation	1 2 3 4 5 NA	
29	Encourages feedback and input from patient	1 2 3 4 5 NA	
30	Sits or remains level with the patient when possible given the context/situation	1 2 3 4 5 NA	
31	Encourages patient reflection on their behavior to mobilize change	1 2 3 4 5 NA	
32	Offers patient opportunities to organize and express their thoughts about the messages	1 2 3 4 5 NA	
33	Explains differently if necessary according to the patient's feedback	1 2 3 4 5 NA	
34	Where possible provides for privacy and minimal interruptions during the interaction	1 2 3 4 5 NA	
35	Demonstrates knowledge about patient's case or situation	1 2 3 4 5 NA	

Overall communication:

0 1 2 3 4 5 6 7 8 9 10

Non-therapeutic communication — Therapeutic Communication

GITCS rate:

0 1 2 3 4 5 6 7 8 9 10

Hard to use — Easy to use

Figure 4 Global Interprofessional Therapeutic Communication Scale©—GITCS©.

perspective; item 43 was maintained because of the lack of items related to privacy and the importance of this in the establishment of rapport (Chadwick, 2012); and item 44 was maintained related to the importance of understanding a patient's situation to express caring behaviors and establish a therapeutic relationship (Khalaila, 2014). Table 4 represents the decisions made, some variances from the rule of exclusion, and the rationale based on the ICC statistics. The average intraclass correlation of the remaining factors was high (0.99), and coefficient alpha for the GITCS© scale was excellent (0.95).

As a measurement of overall therapeutic communication, GITCS© results in scores from 170 (the highest possible score) to 34 (lowest). If items fall into the not-applicable field (not expected for that interaction), scoring will be different, and scoring as a mean between 1 and 5 may better represent an overall score. For a mean score between one and five, the total score can be summed and divided by the number of items recorded (not counting those not-applicable). Calculating an overall score between one and five is possible, the closer to 1—never doing the behaviors, the less therapeutic the interaction, whereas the closer to 5—always performing the behaviors, the more therapeutic the interaction.

In addition, when using this scale, we provided an analog scale for graphic feedback and as a way of measuring construct validity of the scale. This analog scale used faces where 0 = nontherapeutic communication was represented by a frown and 10 = therapeutic communication was represented by a smile. A lower overall score on GITCS© (or mean on the Likert-type scale) should correlate to a lower score on the analog scale.

Discussion

Given the important role of communication within the context of health care, nursing and allied health faculty

Table 4 Items Included or Excluded According to Intraclass Correlation Classification

Item	ICC Classification	Included or Excluded	Variance on Rule Explanation
(15) … asks clear questions using language according to patients' level of health literacy	Good	Excluded	Excluded because the item 11 (excellent) covers the variable
(17) … uses social responses (clichés) not focusing on client's feelings	Good	Excluded	Excluded because the item 33 (excellent) covers the variable
(23) … uses technical terms that are confusing to the patient	Good	Excluded	Excluded because the item 11 (excellent) covers the variable
(24) … makes direct eye contact, if in a face-to-face communication encounter, as appropriate to the culture	Excellent	Excluded	Excluded because the item 28 (good) covers the variable
(32) … uses language that may imply value judgments (e.g. words such as good, bad, or nice)	Good	Excluded	Excluded because the item 13 (excellent) covers the variable
(22) … gives unsupported (false) reassurance	Poor	Included	Included because it was the only item from the original version which is compatible with empathy construct as a reverse score
(43) … where possible provides for privacy and minimal interruptions during the interaction	Poor	Included	Item included because it seems to be relevant to preserve clients' privacy during conversation because it impacts on their response
(44) … demonstrates knowledge about patient's case or situation	Fair	Included	Included because it might reflect a key component: therapeutic trust

need reliable and valid tools by which to teach and assess student's learning. The results show that GITCS© was developed in a context of robust theoretical, content, construct, validity, and reliability testing with feedback from health care faculty experts in simulation, communication, and education.

Teaching with simulation is a powerful strategy because it stimulates nursing faculty to "unpack" their knowledge from silos and apply it to reality. It allows for changing paradigms focused on technical skills to include higher level cognitive and attitudinal decision-making and critical thinking, which includes communication as an important component (Daley & Campbell, 2018). By using simulation to enhance communication skills, faculty provides learning experiences to develop a sense of professional identity and discuss better ways to communicate, pondering challenges, barriers, and successes.

Simulation has made strong advances in health care curriculum as a strategy to practice and improve skills in cognitive, procedural, and behavioral domains. Depending on faculty's focus, technical skills and behaviors can override important nontechnical skills (sometimes referred to as "soft skills") such as therapeutic relationship development and communication. Some disciplines such as psychology and mental health nursing deal more specifically with communication, despite the adoption in these areas it needs to be more fully disseminated throughout all health care practitioner education (Alexander, Sheen, Rinehart, Hay, & Boyd, 2018).

The importance of teaching, learning, and assessment of communication skills is worthy of integration across the curriculum and inclusion in interprofessional education. To provide safe and high-quality care that impacts patients' understanding of and adherence to treatment (Street, Makoul, Arora, & Epstein, 2013), therapeutic relationships and effective communication are paramount. This will lead to patients' confidence in the health care system and confidence in the professionals involved in their care through relationships built on empathy, power sharing, rapport and trust (Campbell et al., 2018).

The International Nursing Association for Clinical Simulation and Learning proposes standards of best practice (INACSL, 2016) to guide the development, facilitation, debriefing, and evaluation of simulation—including learning objectives around nontechnical skills such as communication. We believe that it is feasible to use a simple scale such as the GITCS© in every simulation and allow for teaching and learning about communication regardless of the scenario's other objectives. Research supports that nursing students' use of patient health records in simulation environments affects their intertextual relationship and social interactions with their patients (Campbell, 2017), opening up discussion for multiple forms of communication teaching formats and more areas in need of evaluation. Another study examining communication found that students had difficulty establishing communication with the high-fidelity manikins, especially because of the lack of nonverbal communication through facial or body language, elements that play a core role in the communication process (Goes et al., 2017). Further exploration of the use of simulation for teaching health communication and assessing that in multiple ways in a variety of environments is needed.

Much of the research in simulation evaluating student behaviors has examined students' perceptions of their communication and learning (Graham, Atz, Phillips, Newman, & Foronda, 2018; Kameg, Englert, Howard, & Perozzi, 2013; van Schaik, Regehr, Eva, Irby, & O'Sullivan, 2016). Developing and testing a rubric to provide a reliable and valid scale to evaluate health communication of oneself or another in a more objective way, and in flexible time frames, during or after clinical encounters, was the goal of this project. GITCS© provides this objective measurement to assess communication in all health courses, for multiple disciplines, in a flexible manner (on paper or survey application), and in all types of scenarios: laboratory simulation, practicum, and/or virtual reality.

This scale was developed and validated to assess and provide a systematized analysis of a student and patient interaction, allowing for deeper discussion during debriefing guided by theory, communication constructs, and identification of specific communication skills or barriers demonstrated during the interaction. Using GITCS© during the simulation or clinical experience, faculty, peers, or patients (volunteers and actors) can use it to evaluate the interaction and provide concrete feedback to those involved. Further debriefing allows analysis of the actions, attitudes, knowledge and skills the student demonstrates during the interaction with a patient, leading to discussion of essential elements of communication and offering a meaningful opportunity for learning, based on their performance.

The use of instruments to support debriefing was described in the literature as an interesting approach to guide the process of reflection and consolidation of meaningful learning in simulated scenarios (Dreifuerst, 2015), reinforcing the relevance of the scale presented in this work. In addition, using the same scale can provide formative feedback overtime (during a course or semester) and/or be used as summative evaluation. Beyond guidance for debriefing, this repeated measure approach can add to students' reflection-on-action, reflection-in-action, and reflection-beyond-action (Dreifuerst, 2015; Kolb, 1984), allowing for intentional behavior change.

The experiential learning being measured by this instrument reflects Kolb (1984) theory and takes into consideration the complexity of learning therapeutic use of self (Peplau, 1991), beyond cognitive, to engage students and allow them to practice therapeutic communication. Learning about the importance of active listening, empathy, trust and rapport building, and sharing power requires also practicing it, reflecting on one's actions to organize knowledge and conceptualize ways of approaching it differently. The relevance of GITCS© lies in its easy access and use as an instrument for faculty to teach communication more systematically and for faculty, students, and practitioners to evaluate themselves and others.

In addition to the use of the scale in simulation, GITCS© can strengthen the education of communication skills in a clinical practice context as well, which supports the requirement to measure students' competencies in this area. Finally, GITCS© aggregates a core concept of therapeutic relationship and communication considering the context of globalization and the need for respect within a variety of cultures.

The process of development and validation was rigorously designed and conducted, adopting a new method for instrument testing, crowdsourcing. Researchers have not previously used crowdsourcing as a way to test reliability and validity of instruments for nontechnical skill assessment such as communication, so the statistical analysis of GITCS© using crowdsourcing was piloted in this study. Its use was carefully planned for this study, balancing the risks and benefits.

According to Wexler, 2011, use of crowdsourcing for data collection must be preceded by the following actions: (1) recognize benefits and challenges, (2) evaluate quality of crowdsource data comparing to internal sourcing or outsourcing, and (3) prepare resources to approach the crowd. A factor enriching the data collected and validity of the instrument is related to the universal experience of provider-patient communication in a health situation. For an instrument examining therapeutic relationship and health care communication, it seems imperative to get validation from patients.

We were provided support by C-SATS to guarantee the quality, time, and resources to proceed with an online data collection, adherence of participants to directions, and sample size that met our power analysis needs (Law, Gajos, Wiggins, Gray, & Williams, 2017).

Finally, Law et al., 2017 added that it is interesting to use crowdsourcing when the workflow is decomposable (as was done by dividing the three videos among all participants), if the processing and data analysis is sequential and if the theme does not require advanced knowledge from a specialist.

This article has described in detail the developing, testing, and validation of the GITCS© and has found that it demonstrates reliable measurement of therapeutic communication. It has the potential to facilitate faculty assessment of student's therapeutic communication skills, for formative and summative evaluation purposes, and provides a useful rubric for teaching therapeutic communication in simulation and clinical settings. Further testing in live simulated environments by faculty and health professional students and further construct validity testing is required.

Limitations

One of the major limitations of the research was the participant burden related to the length of the videos (8 to over 13 minutes), the online completion of the survey, and the fact that the crowdsourcers were being paid to watch the videos and do the assessment. It was the first time that crowdsourcing was used to explore instrument reliability and validity. It is also possible that an interaction observed

in real-time might be scored differently than the one viewed in a video. Another limitation is that although the goal in development of the instrument was to include an interdisciplinary and multicultural lens, assessment of health communication behaviors in disciplines outside of nursing is warranted and international testing of translated versions of the scale. Other sources of measurement error may be related to the variability in scoring among raters, especially without any training on use of the scale. Providing inter-rater training and practice may enhance the usability of the scale for dynamic clinical interactions (simulated or live) and lead to enhanced reliability. The use of what some may perceive as nonsymmetrical descriptors/responses for the Likert scale has been shown to increase measurement error (Saris & Gallhofer, 2014). An iterative and collaborative process with our panel of experts resulted in the descriptors for this scale, and we will continue that process. Another limitation in factor extraction is that only Kaiser's criterion (eigenvalue) and scree test were used; a parallel analysis (Pallant, 2013, p. 191; Preacher & MacCallum, 2003) would have added strength to factor identification. Finally, recognizing the complexity of evaluating students' clinical performance (Irby & Dohner, 1976), traditional reliability methodology may not be the ideal method of instrument development and testing (Prion, Gilbert, & Haerling, 2016).

Conclusion

This study reported the development of GITCS© from the theoretical foundation of therapeutic communication and the framework for simulation learning in nursing education to create the items. It described the development of International Nursing Association Clinical and Simulation Learning Standards of Best Practice—based videos for testing the scale and the process of validation, which findings suggest that GITCS© has evidence of internal consistency when used by a diverse population of patients viewing a professionally developed video of a nurse-patient home visit scenario. GITCS© coefficient alpha with a crowdsourcing sample was 0.95, and the scale's statistical robustness was maintained when re-examined with the 35 items that had the stronger construct loadings and ICCs after expert panel review.

Future Research

The robust development and testing of GITCS© will allow for further feasibility testing research in live simulations, which is in process in a Canadian province at seven schools of nursing using its updated version as presented in Figure 3. Feasibility testing this scale in multiple environments and with different disciplines is the next phase of testing.

In addition, further construct validation of GITCS© comparing its results to another instrument examining similarities and differences in measuring communication is in process.

Testing with translations of the GITCS© will evaluate its usefulness in different countries and determine whether its constructs are maintained in the context of several cultures. The 35-item GITCS© has been translated into French by researchers in Belgium and Montreal, and one French version is being tested. In addition, a Portuguese version is ready for testing in Brazil and Portugal. The authors have developed a translation workflow for the international teams maintaining concept validity and reliability during the methodological process. Future research using GITCS© has repercussions for students, helping to assist their learning and continued mastery of the skill and art of therapeutic communication, and will be useful in the context of interprofessional foundation health courses.

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