Developing and validating the Unhurried Conversations Assessment Tool (UCAT)

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ARTICLE INFO

ABSTRACT

Objective: Given the importance of unhurried conversations for providing careful and kind care, we sought to create, test, and validate the Unhurried Conversations Assessment Tool (UCAT) for assessing the unhurriedness of patient-clinician consultations.
Methods: In the first two phases, the unhurried conversation dimensions were identified and transformed into an assessment tool. In the third phase, two independent raters used UCAT to evaluate the unhurriedness of 100 randomly selected consultations from 184 videos recorded for a large research trial. UCAT's psychometric properties were evaluated using this data.
Results: UCAT demonstrates content validity based on the literature and expert review. EFA and reliability analyses confirm its construct validity and internal consistency. The seven formative dimensions account for 89.93% of the variance in unhurriedness, each displaying excellent internal consistency ($\alpha > 0.90$). Inter-rater agreement for the overall assessment item was fair (ICC = 0.59), with individual dimension ICCs ranging from 0.26 (poor) to 0.95 (excellent).
Conclusion: UCAT components comprehensively assess the unhurriedness of consultations. The tool exhibits content and construct validity and can be used reliably.
Practice implications: UCAT's design and psychometric properties make it a practical and efficient tool. Clinicians can use it for self-evaluations and training to foster unhurried conversations.

1. Introduction

Due to the industrialization of healthcare [1], clinicians and patients often feel pressed for time during consultations, leading to a sense of rushed and depersonalized interactions [2]. These perceptions of hurried consultations can have detrimental effects on care, including limited understanding of patient concerns and unaddressed healthcare issues [2–4]. While clinicians and patients have limited control over *how much time* is allotted for consultations—dictated by macro-level temporal structures prioritizing efficiency and healthcare demands—-they have more agency over *how the time* is spent, which is determined by the micro-level communicative practices of patients and clinicians [5, 6].

These agentic communicative practices of patients and clinicians have consequential effects on the rhythm and pace of healthcare consultations. Several researchers emphasize the impact of communicative behaviors (e.g., asking open-ended questions, engaging in small talk) on the perceived pace of consultations [4,5,7,8]. Notably, Montori and

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Phase One	Conceptual and Operational Development	▪ Literature Review (see *Table 1*) ▪ Research Team Deliberations ▪ Preliminary Testing
Phase Two	Tool Design and Piloting	▪ Pilot Testing ○ Research team and volunteer coders ▪ Updating UCAT Iteratively ○ Content, structure, design, & instructions
Phase Three	Tool Testing	▪ UCAT Testing ○ Independent raters assess unhurriedness of previously recorded clinical encounters ▪ Inter-rater Reliability Assessments
	Tool Validation	▪ Data from UCAT Testing Used for: ○ Exploratory Factor Analysis ○ Internal-consistency Assessments

UCAT and Instruction Manual
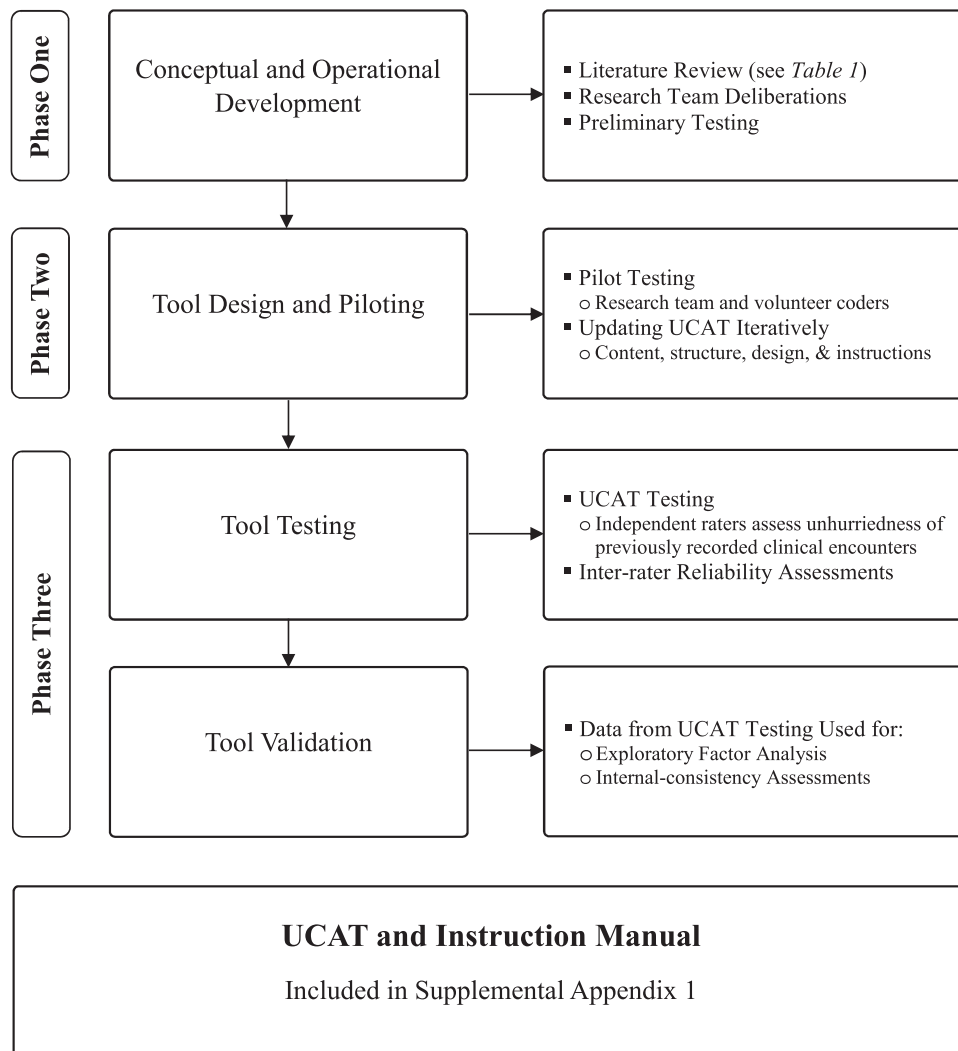
Included in Supplemental Appendix 1

Fig. 1. Summary of UCAT's Design and Validation Steps.

colleagues [8] advocate for *unhurried conversations*, a communicative practice co-created by patients and clinicians, that prioritizes the quality of consultation time over quantity, providing opportunities for creating tailored care plans that make emotional, practical, and intellectual sense for patients [1,8–12].

Unhurried conversations are conceptualized not in terms of duration or speed; instead, the unhurriedness of conversations is determined by the perceived rhythm and participation during conversations [8]. Conversational rhythm represents an organically emerging tempo that the conversational partners mutually construct. Participation refers to the cognitive and emotional availability of the participants during conversations. When participants perceive synchronous rhythm and participation, they can engage in unhurried conversations appropriate for the demands of care, allowing patients and clinicians to engage in shared decision-making and develop tailored care plans.

Although this conceptual work offers a rich understanding of unhurried conversations, translating these ideas into practice necessitates additional efforts in identifying specific, measurable attributes that characterize unhurried conversations. Therefore, building on Montori and colleagues' [8] conceptual work, we operationalized unhurried conversations as an ongoing, mutual accomplishment between patient and clinician that proceeds through a range of verbal and nonverbal communicative practices, including pace, pauses, emotionality, shared turn-taking, inviting questions, off-task topics, embodiment, conversational interruptions, external interruptions, and delaying topics. Subsequently, we saw the potential for converting these behaviors into an assessment tool to gauge the unhurriedness of patient-clinician consultations or guide novice practitioners seeking to enhance their ability to engage in unhurried conversations.

Owing to the practical utility of creating the unhurried conversation assessment tool (UCAT), our primary objective was to develop a user-friendly tool and validate it by evaluating the unhurriedness of previously recorded patient-clinician encounters. The ensuing sections detail the tool development and validation processes completed over 18 months. The paper concludes with a discussion of the key findings, implications, and future research directions.

2. Methods

To design and validate the unhurried conversation assessment tool (UCAT), this study was conducted in three phases, as summarized in Fig. 1 and elaborated in the sections below. The clinical consultations analyzed using UCAT were obtained during a clinical trial in which investigators recorded visits with and without a shared-decision making (SDM) intervention. The Mayo Clinic Institutional Review Board (IRB) approved the source study from which video recordings were drawn and the analyses of these recordings in this study. All participants provided written consent for the use of these recordings for future research purposes.

2.1. Phase one: conceptual and operational development

Building on Montori and colleagues' [8] multi-level model of the determinants of unhurried conversations and relevant literature from the domains of communication, time studies, and shared decision-making, a team of researchers and clinicians operationalized unhurried conversations as *an ongoing, mutual accomplishment between patient and clinician that proceeds through a range of verbal and nonverbal communication practices wherein one or more participants (mutually) regulate the sequence, spacing (temporal and spatial) and speed of interaction to make themselves available to the other and remove or suspend distractions from the environment in order to improve care.* While Montori et al. [8] discuss both micro-level individual characteristics and macro-level organizational (e.g., scheduled duration of appointments) features that facilitate or hinder conversational participation and rhythm, our focus was identifying micro-level communicative practices

that influence the unhurriedness of conversations. Through a thorough literature review and six months of weekly deliberations and debates, we identified ten observable elements of unhurried conversations: pace, pauses, emotionality, shared turn-taking, inviting questions, off-task topics, embodiment, conversational interruptions, external interruptions, and delaying topics. These dimensions and their conceptual and operational definitions were extrapolated from prior literature and are outlined in Table 1.[1]

Based on these operational definitions, three to six items focusing on the verbal and nonverbal communicative markers for each dimension were crafted. For instance, statements reflecting emotionality included: (a) Participants expressed emotion that was acknowledged by the other, (b) Participants expressed emotions, and (c) An expression of emotion was given time to be processed. These statements were accompanied by one global item to provide an overall assessment of each dimension. While the items within each dimension directed attention to specific communicative behaviors, the global ratings focused on providing collective scores of these behaviors. The use of global ratings for summative assessments is well supported by prior research [13–15]. Thus, a final global item was also included in the tool to measure the overall perceptions of unhurriedness.

The first version of UCAT consisted of 55 statements assessing the ten dimensions and the overall unhurriedness perceptions. However, during preliminary testing of two recorded patient-clinician encounters, the researchers identified 14 items that were redundant, ambiguous, or inaccurate. These items were subsequently removed from the tool. Additionally, some items were rephrased to better represent the dimensions of unhurried conversations.

The resulting tool comprised 41 items: three items for each of the ten dimensions, a global item assessing each dimension, and a final item assessing the overall perception of unhurriedness. The face and content validity of these dimensions and respective items was bolstered by an expert peer review [16]. The tool was shared with a physician with research expertise in communication and time studies. We held multiple meetings with the expert to discuss the tool's development. These discussions confirmed that the generated items reflected the ten dimensions of unhurried conversations.

Notably, the ten dimensions included in UCAT serve as formative indicators of unhurried conversations [17]. These formative indicators are considered determinants of the unhurriedness of conversations rather than the effects of the conversation's unhurriedness. To elaborate, unhurried conversations result from a combination of these ten dimensions, and an increase in any of these dimensions is associated with heightened perceptions of consultation unhurriedness. Conversely, an increase in perceptions of unhurriedness may not necessarily be accompanied by an increase in all ten dimensions. Fig. 2 visually illustrates the formative model of unhurried conversations, incorporating the ten dimensions.

2.2. Phase two: designing, piloting, and refining UCAT

2.2.1. Designing UCAT

Based on phase one, a working draft of UCAT was created that incorporated the ten dimensions of unhurriedness—each assessed through three statements and one global item. The design of UCAT was centered on usability and quick referencing, considering its concurrent use by raters during the observation of recorded clinical encounters. Consequently, drawing from assessment tools used in different contexts [13,15,18] and considering the ease of use of Likert rating scales, each statement was designed to be answered on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). To account for the possibility of some dimensions being absent (e.g., no external interruptions

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[1] These ten dimensions are explained in detail in a related conceptual paper, currently under review, developed in parallel with this manuscript.

Table 1

Conceptual and Operational Definitions of the Dimensions of UCAT [a].

Dimensions	Conceptual Definitions	Operational Definitions and Examples
Pace	An unhurried pace refers to a rhythm of conversation that makes it possible for both participants to speak without rushing or having to constrain their rhythm choices to accelerate or decelerate due to reasons extraneous to care.	Alignment between participants' speech rates (i.e., number of words per unit of time). Example: a. A clinician matches the speech rate of the patient.
Pauses	Unhurried conversations involve pauses and moments of silence, allowing the participants to reflect and respond to relevant conversational and cognitive demands.	A break or rest in conversation arising in the form of pauses or silence. Examples: a. The physician is silent as they consider answering the patient's question. b. The patient is allowed to pause and reflect on the news they receive or the answer to a question.
Emotionality	Unhurried conversations permit either participant to express and discuss their emotions (i.e., state of mind deriving from one's circumstances, mood, or relationships with others) during the conversation.	Display and discussion of emotions during the conversation. Examples: a. A patient cries, laughs, or openly expresses their emotions verbally or nonverbally. b. A clinician cries, laughs, or openly expresses their emotions verbally or nonverbally.
Inviting Questions	Unhurried conversations entail the use of questions that invite the other to share and elaborate their answers, allowing both participants to freely share information and inquire to learn more.	Open-ended questions that give the participants an opportunity to share information freely. Examples: a. How are you feeling? b. Could you describe that symptom further?
Shared turn-taking	In unhurried conversations, the ratio of turn-taking is roughly even or negotiated so that both participants behave as if they have an equal opportunity to speak.	The ratio of turn-taking between the physician and patient during the conversation. Examples: a. Participants take appropriate turns to speak. b. The clinician allows the patient to respond to questions.
Conversational Interruptions	Conversational interruptions prevent participants from completing their turn in a way that disrupts the flow of conversation.	The frequency of conversational interruptions initiated by the patient or clinician. Example: a. The clinician or patient "cuts off" the other mid-sentence to change the conversational topic.
External Interruptions	External interruptions occur when a conversation is interrupted by another person (e.g., a staff member) or an event (e.g., a technological problem). Unhurried conversations are characterized by less frequent external interruptions.	The frequency of external interruptions due to another person or event. Examples: a. Another staff member comes into the room. b. The technical equipment fails and requires attention.
Embodiment	Unhurried conversations are supported through open body language.	Participants' body language (e.g., head nods, leaning forward, closed arms) during the conversation. Examples:

Table 1 (*continued*)

Dimensions	Conceptual Definitions	Operational Definitions and Examples
		a. Open body language: Open arms; Head nods. b. Closed body language: Closed arms; Walking away.
Off Task Topics	Unhurried conversations involve a discussion of topics unrelated to medical problems or diagnoses that enhance the depth of conversation.	References to topics unrelated to medical problems or diagnoses. Examples: a. Questions about weekend plans. b. Discussing hobbies or personal goals.
Delaying Topics	To support unhurried conversations, participants may delay addressing non-immediate topics so that more time and attention can be given to pertinent topics.	Delaying or delegating topics to a different time/person. Examples: a. We'll discuss that next time. b. Someone else will be taking it from here.

[a] Extrapolated from [7,8,10,37–68].

may occur during an encounter) or difficult for observers to assess (e.g., participant's back is facing the camera, making it challenging to observe body language), a "*not applicable*" option was included.

The first version of UCAT was created to include ten dimensions, each assessed through four items using a 5-point Likert scale and one overall item evaluating perceptions of unhurriedness. The tool also included an initial section dedicated to collecting descriptive information about the rater and the patient-clinician encounter video. To ensure convenience, the entire rating tool was meticulously organized to fit on a single side of an A4 paper. To further improve ease of use, the rating tool was presented in a user-friendly PDF format, including fillable fields and buttons. Other design features that improved the ease of reading and evaluation included tabular formatting of each dimension and colored font to distinguish between global items and statements within each dimension.

To enhance rating consistency and minimize training requirements, an instruction manual explaining observable behaviors associated with each dimension was developed for UCAT. Noteworthy clarification aspects of the manual included: (1) unhurried conversations can be brief or long, and raters aren't evaluating the length of conversations, (2) the term "participants" in UCAT refers to the clinician, patient, or both, (3) some dimensions in UCAT may be absent or challenging to assess, allowing raters to select the "not applicable" option, (4) emphasis on not interpreting the absence of these dimensions as evidence of unhurriedness or hurriedness, and (5) instructing raters to take brief notes and determine final ratings after reviewing the entire video, rating the entire encounter rather than specific parts. The instruction manual—included in Supplemental Appendix 1—was also presented as a PDF and designed in a tabular format with appropriately highlighted words and phrases, drawing attention to critical information.

2.2.2. Piloting and refining UCAT

The pilot testing of the tool occurred in two stages. In the first stage, four researchers (DM, DB, VM, and CSJ) evaluated the unhurriedness of five recorded clinical encounters using UCAT. As in the first phase, each researcher rated the encounter on the ten dimensions. Based on the ambiguities and difficulties noted during the rating process, we made further modifications to UCAT. The discussion and feedback led to refining item phrasing to improve clarity. Dimensions with the "not applicable" option were reordered to appear at the end in a sequential order to reduce the cognitive load of switching between different anchor sets [19]. Last, the structure and design of the UCAT and instruction manual were modified to facilitate measurement.

For the second pilot testing stage, two external raters evaluated five videos to assess the tool's usability without extensive training and
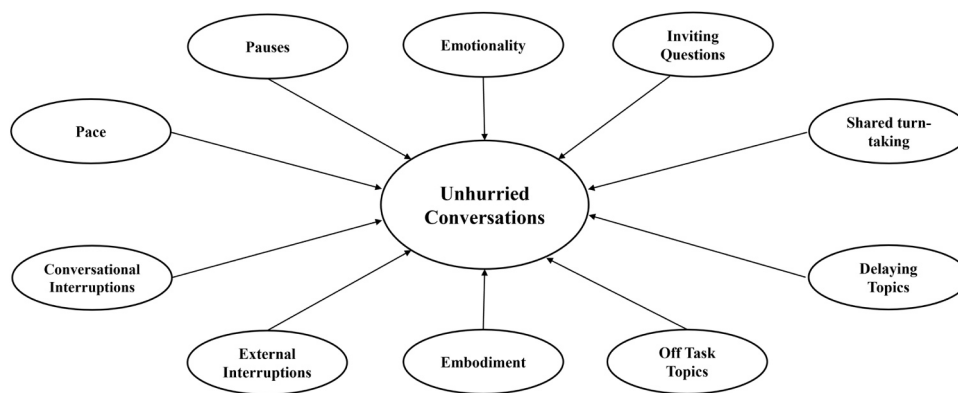
Fig. 2. Formative Model of Unhurried Conversations.

expertise. After a brief training meeting, the raters received the instrument and instruction manual. Valuable feedback and results from this round prompted a crucial change: Removing dimension labels (e.g., speech rate) as these seemed to introduce distortions in the assessments (i.e., assessing the number of words spoken per unit of time instead of the synchrony between participants' speech rates). Thus, all dimension labels were replaced by a numeric title (i.e., 1, 2…10). This round of piloting also resulted in more precise rating instructions and a better layout of the scoring sheet. The refined UCAT comprised 41 items organized in three segments: 10 main unlabeled domains containing three individual items each, global measures containing ten items, and the overall unhurried conversation item.

2.3. Phase three: testing and validating UCAT

After establishing content validity in previous phases, the final phase tested and validated UCAT for internal structure and construct validity. This involved assessing the inter-rater reliability, as well as the factor structure and internal consistency of the dimensions of unhurried conversations. To ensure methodological rigor, the study followed content analysis and scale validation procedures recommended by previous research [20–22]. The following sections provide a detailed description of these procedures.

2.3.1. Sample

The consultations analyzed using UCAT were sampled from previously recorded clinical encounters that took place during eight practice-based randomized and one quasi-randomized clinical trials conducted between 2007 and 2015. These trials evaluated the effect of usual care with or without SDM tools designed to support conversations about the treatment of Graves disease, osteoporosis, diabetes mellitus, and atrial fibrillation (for more details, see [23–26]).

Eligible recordings captured complete patient-clinician consultations conducted in English in which a single clinician participated. For our purposes, a clinical encounter was considered complete if it comprised an introduction (such as asking open-ended questions about patients' complaints and describing the appointment's purpose), a medical discussion, and an appointment closure (where the clinician clearly indicated that the appointment had concluded). By adhering to these criteria, we ensured that all ten dimensions of UCAT could be assessed and any differences in evaluations of unhurriedness were not influenced by recordings that commenced or ended abruptly.

From a pool of 184 eligible recordings, we randomly (using a random number generator) selected 100 consultation videos for content analysis. The videos had an average length of $M = 32.63$ min ($SD = 16.72$), with the patient-clinician encounter duration averaging at $M = 28.91$ min ($SD = 13.71$). Participants were, on average, 60.7 years old ($SD = 17.5$), and 61.2% were women. These patients met with male (48%) and female (47%) clinicians, with 5% of data missing for

Table 2
ICCs, Mean, and SD results for UCAT.

Dimensions	ICC (95% CI)	p-value	Mean (SD)	
			Rater 1	Rater 2
Grand Item	0.59 (0.444 to 0.704)	0.001	4.93 (.35)	4.93 (.41)
Global Items	0.45 (0.266 to 0.597)	0.001	3.54 (.40)	3.69 (.45)
Speech Rate	0.34 (0.154 to 0.502)	0.001	4.94 (.27)	4.92 (.50)
Pauses	0.26 (0.042 to 0.412)	0.01	4.00 (1.37)	4.72 (.93)
Emotionality	0.41 (0.234 to 0.561)	0.001	4.55 (.69)	3.99 (1.52)
Inviting Questions	0.95 (0.928 to 0.967)	0.001	4.96 (.30)	4.96 (.40)
Shared Turn-Taking	0.77 (0.678 to 0.840)	0.001	4.90 (.38)	4.96 (.40)
Conversational Interruptions	0.36 (0.175 to 0.518)	0.001	4.91 (.37)	4.95 (.25)
External Interruptions	0.65 (0.522 to 0.751)	0.001	0.81 (1.56)	0.89 (1.58)
Embodiment	0.43 (0.252 to 0.575)	0.001	4.28 (.85)	4.93 (.52)
Off-task Topics	0.57 (0.420 to 0.688)	0.001	1.62 (2.00)	2.69 (2.42)

Note. Delaying Topics was excluded from the results because it was observed in only four videos.

clinicians' sex.

2.3.2. Coding procedure

Two raters, proficient in English, were provided with these 100 recordings to assess the unhurriedness of each consultation using UCAT. To ensure UCAT's usability without extensive training, only the instruction manual was shared with the raters, and no additional training was provided. To calibrate their ratings, the raters independently rated five randomly selected pilot videos and discussed the scores to identify any disagreements and their underlying reasons. One of the authors (CSJ) participated in these discussions and updated the instruction manual to address the disagreements. Subsequently, the raters independently rated another set of five randomly selected videos and discussed their scores and any disagreements.

This calibration process aimed to achieve interrater reliability—assessed by intraclass correlation coefficient [27] using absolute agreement—of 0.70 or higher [28]. The interrater reliability for the pilot videos exceeded this criterion (ICC = 0.814; $p < 0.001$). Following this calibration process and setting a threshold for interrater reliability, our objective was to attain reliable and consistent ratings using UCAT for the sampled patient-clinician encounters. The raters then independently rated the remaining videos without any discussion of scores.

2.3.3. Reliability and validity assessments

After the raters completed their evaluations, the inter-rater reliabilities using ICCs were computed for the overall rating as well as for the global and individual items for the ten dimensions. The coders' ratings on individual items for each dimension were aggregated by calculating means. The ICCs for the ten dimensions are based on these aggregate ratings and were computed using single measures, absolute agreement, two-way mixed-effects model [29].

The raters' evaluations for each item pertaining to the ten dimensions were averaged to create composite scores for each item. Adhering to best practices for scale development [30,31], an exploratory factor analysis (EFA) was performed on the composite scores to examine both the dimensionality of unhurried conversations and the quality of items. Preliminary analyses before running EFA included an examination of the correlation matrix, Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO >.50), and Bartlett's Test ($p < .001$) values.

To evaluate whether items within each UCAT dimension were consistently scored in the same direction, the internal consistency of the tool was assessed using Cronbach's α coefficients. The IBM SPSS V.29.0.1.0 package was used for all analyses.

3. Results

3.1. Inter-rater reliability results

Table 2 presents the inter-rater reliabilities and descriptive statistics for UCAT's ten dimensions and global items. Inter-rater agreements for the overall assessment item (ICC = 0.59) and the mean of the ten global items (ICC = 0.45) were *fair* (between 0.40 and 0.60) per Cicchetti's [27] criteria. The ICCs ranged from 0.26 (poor) to 0.95 (excellent) for the tool's individual dimensions.

3.2. EFA and internal consistency results

Before interpreting the EFA results, we examined the correlation matrix for all scale items and found both positive and negative eigenvalues [32]. Closer inspection revealed that the negative eigenvalue was extremely close to zero, suggesting its impact on the factor solution was negligible [33]. We also identified four items (1–3, 2–2, 4–1, and 5–2) deemed redundant as they had exceptionally high inter-item correlations (~1) and thus provided no meaningful additional information [33]. Their removal resulted in a positive definite correlation matrix.

With a KMO value of 0.66 and a significant Bartlett's Test (χ^2 (325) = 5012.54, $p < .001$), the data met the necessary assumptions for conducting a factor analysis. We proceeded with principal components factor analysis using varimax rotation to identify the factor structure and eliminate items with poor loadings. Factors were retained if (a) they had eigenvalues greater than 1.00 and were located above the bend in the scree plot, and (b) the loadings were greater than .60 on the primary factor and lower than .40 on any secondary factor [34]. To facilitate the interpretation of the rotated component matrix, loadings lower than .35 were suppressed.

The rotated component matrix yielded a seven-factor solution, accounting for 89.93% of the variance in the unhurriedness of conversations (Table 3). Notably, dimensions including pauses, emotionality, external interruptions, embodiment, off-task topics, and delaying topics loaded on distinct factors, whereas speech rate, inviting questions, shared turn-taking, and conversational interruptions all loaded on a single factor. Upon closer consideration and after consulting the literature, it became clear that these four dimensions—in contrast to others—are uniquely focused on the tempo and rhythm of patient-clinician conversation that is co-constructed through paralanguage (modulating speech rate, avoiding interruptions) and verbal (asking inviting questions and managing turn-taking) means. Thus, we named it Participation and Rhythm, as Montori et al. [8] point to the role of participation in shaping a conversation's tempo. Whereas the other factors relate to

Table 3

Results of Exploratory Factor Analyses – Seven Dimensions of Unhurried Conversations.

Scale Items, Cronbach Alphas, and Means and Standard Deviations	Factor Loadings
Participation and Rhythm	
■ Participants did not try to rush the conversation.	.845
■ Participants held the conversation at a natural pace.	.845
■ Participants asked open-ended questions that encouraged participation from the other.	.943
■ Participants asked questions that allowed the other to share additional information.	.966
■ Each of the participants took appropriate turns in the conversation.	.962
■ Both participants contributed to the conversational rhythm.	.958
■ Participants helped maintain the flow of conversation.	.954
■ Participants were able to complete their conversational turns without the other interrupting.	.727
■ Participants allowed the other to speak without interruption.	.704
Cronbach's Alpha (α)	0.97
Mean (SD)	4.94 (0.30)
Pauses	
■ Participants were able to pause without being interrupted by the other.	.959
■ Participants allowed each other to pause.	.947
Cronbach's Alpha (α)	0.99
Mean (SD)	4.36 (0.91)
Emotionality	
■ Participants expressed emotions.	.890
■ Participants expressed emotions that were acknowledged by the other.	.867
■ Participants allowed time for the expressions of emotion to be processed.	.950
Cronbach's Alpha (α)	0.92
Mean (SD)	4.27 (0.99)
External Interruptions	
■ An external factor (e.g., person, event) interrupted the conversation.	.929
■ An external factor disrupted the flow of conversation.	.934
■ Either participant was prevented from completing their conversational turn because of outside factors.	.928
Cronbach's Alpha (α)	0.94
Mean (SD)**	2.74 (1.17)
Embodiment	
■ Participants displayed body language that was open to the other.	.911
■ Participants displayed body language that indicated they were available for the conversation.	.968
■ Participants were visibly engaged in what the other was saying.	.968
Cronbach's Alpha (α)	0.97
Mean (SD)	4.65 (0.37)
Off-task Topics	
■ Participants discussed topics unrelated to the medical conversation.	.968
■ Participants sought to establish rapport by asking questions about the other's personal life or work.	.976
■ Participants engaged in conversation to get to know each other (outside of clinical roles).	.968
Cronbach's Alpha (α)	0.99
Mean (SD)**	3.54 (1.16)
Delaying Topics	
■ Participants indicated that certain issues could be discussed in the future to have adequate time.	.942
■ To maintain a deliberate pace, some issues were held for another time.	.958
■ Participants prioritized a topic to allow for a more deliberate pace.	.930
Cronbach's Alpha (α)	0.97
Mean (SD)**	1.91 (0.42)

Note. The redundant items with exceptionally high inter-item correlations, including items 1-3 (Participants spoke at an unhurried pace), 2-2 (Participants paused during the conversation), 4-1 (Participants asked questions that allowed the other to share freely), and 5-2 (Both participants contributed to the flow of the conversation), were removed from the EFA analysis.

* * Mean and SD calculated based on data for videos in which the behaviors were observed.

behaviors that either no one controls (external interruptions), only one person controls (delaying topics), or that are useful but not central to the pace of the conversation (showing emotion, making small talk, having open body language), the items in the participation and rhythm factor explicitly concern how participants co-construct a shared rhythm.

The first factor, *participation and rhythm*, comprised nine items, explaining 29.47% of the variance, and exhibited high internal consistency with a Cronbach's α of .97. The subsequent five factors were each composed of three items. They showed the following accounted variance and Cronbach's α values: *off-task topics* (16% accounted variance, $\alpha = .99$), *delaying topics* (13.24% accounted variance, $\alpha = .97$), *embodiment* (11.63% accounted variance, $\alpha = .96$), *external interruptions* (7.59% accounted variance, $\alpha = .94$), and *emotionality* (7.03% accounted variance, $\alpha = .92$). The seventh factor, *pauses*, comprising two items ($\alpha = .99$), accounted for 5% of the variance in assessments of unhurried conversations.

Last, Pearson correlations were calculated for the pairwise combination of the composite measures of the seven factors describing unhurried conversations (see Table 4). The analysis revealed that the seven factors exhibited limited statistically significant correlations. Precisely, only the following combinations were correlated: *participation and rhythm* was significantly related to *pauses* ($r = .30$, $p < .01$), *off-task topics* was related to *emotionality* ($r = .26$, $p < .01$), *delaying topics* was correlated with *embodiment* ($r = -.38$, $p < .01$) and *external interruptions* ($r = .26$, $p < .01$), and *external interruptions* was related to *emotionality* ($r = -.23$, $p < .05$).

4. Discussion and conclusion

This study identified ten dimensions of unhurried conversations and used them to develop the unhurried conversation assessment tool (UCAT). The UCAT was then subjected to a rigorous validation process, resulting in a comprehensive assessment tool comprised of seven formative dimensions measured through 37 items. The ready-to-use final tool and the companion coding manual are included in Supplemental Appendix 1.

4.1. Key findings and implications

The UCAT components were derived from a thorough review and grounded in clinicians' experiences. Their content validity was further established through expert peer review. Testing the UCAT to assess the unhurriedness of consultations revealed promising inter-rater reliability. Inter-rater agreements for the overall assessment item and the domain-level composite scores were fair. Inter-rater agreements for individual UCAT dimensions ranged from poor to excellent.

The EFA and reliability analyses confirm the UCAT's strong construct validity and excellent internal consistency. The UCAT's formative dimensions account for 89.93% of the variance in the unhurriedness of conversations. Interestingly, contrary to our proposed ten-dimensional

model, unhurried conversations can be effectively represented by seven formative dimensions. These include speech rate, inviting questions, shared turn-taking, and conversational interruptions that loaded together to form the Participation and Rhythm dimension—aligned with Montori and colleagues' [8] focus on participation in shaping conversation tempo. The remaining six dimensions loaded independently, representing behaviors beyond conversational partners' control (e.g., external interruptions), controlled by one party (e.g., delaying topics), or valuable but ancillary to shaping conversation's pace (e.g., expressing emotion, taking pauses, open body language, small talk). Each dimension displayed excellent internal consistency, with Cronbach's alpha values exceeding 0.90 [27].

The primary theoretical contribution of this study lies in the formative representation of unhurried conversations, highlighting that the dimensions are not interchangeable or correlated. Therefore, all seven dimensions are necessary for a comprehensive representation of unhurried conversations: Omitting any dimension is akin to removing a part of the construct [17]. Indeed, the seven dimensions in our model represent distinct verbal and nonverbal communication behaviors, as evidenced by the limited significant correlations between them. Even the dimensions that exhibited correlations showed weak relationships ($r < .40$) [35], further emphasizing the unique contributions and uninterchangeable nature of these dimensions. Overall, our formative model underscores the importance of examining distinct communication behaviors that collectively contribute to unhurried patient-clinician consultations.

4.2. Study limitations and future research opportunities

This study has several limitations that warrant future research attention. First, the study's rigorous design and validation procedures, along with the results, provide reliability and validity evidence for UCAT; however, the psychometric support is limited to the specific patient-clinician consultations analyzed using UCAT. This limitation—common in all rating instruments [13]—imposes the need for further validation from diverse and larger patient-clinician consultation samples. These validation efforts must be additionally substantiated with other forms of validity (e.g., concurrent and predictive) to obtain more definitive psychometric evidence.

Second, inter-rater agreements for some UCAT dimensions were poor, possibly due to range restrictions and difficulty in observing specific behaviors [36]. Independent raters tested UCAT in the context of lengthier consultations (part of clinical trials evaluating the effects of SDM tools), resulting in limited variability and consistently high unhurriedness scores (see Table 2). Moreover, in some videos, behaviors like embodiment and emotionality were unobservable because patients or clinicians were facing away from the recording device. These results, derived from a range-restricted consultation sample, emphasize the need for additional UCAT testing with more diverse patient-clinician encounters.

Last, to establish the factor structure and reliability of UCAT dimensions, we created multiple items per dimension following scale development best practices [20]. However, this resulted in a 37-item

Table 4
Bivariate Correlations Among UCAT's Dimensions.

Variable		1	2	3	4	5	6	7
1	Participation and Rhythm	—						
2	Pauses	.30 * *	—					
3	Emotionality	.06	.03	—				
4	External Interruptions	-.06	-.15	-.23 *	—			
5	Embodiment	.08	.02	.01	-.06	—		
6	Off-task Topics	.15	.15	.26 * *	.08	.10	—	
7	Delaying Topics	-.10	.05	.04	.26 * *	-.38 * *	-.02	—

Note. $N = 100$
* $p < .05$; * * $p < .01$

Table 5

From Quantity to Quality of Consultation Time: Suggestions for Clinical Practice.

Dimensions	Research-Based Rationale	Actionable Recommendations
Participation and Rhythm	*Pace*: An unhurried pace refers to a conversational rhythm that allows both participants to speak without rushing. Research suggests that convergence of speech rates positively influences trust, mutual intelligibility, cooperation, comfort, and reciprocal interaction between patients and clinicians[38,49–51,69].	• Modulate the pace of your speech to align with that of your patients. • Avoid speaking too rapidly, especially while sharing medical information. • After sharing complex information, allow for pauses and time for patients to process and respond.

	Inviting questions: Unhurried conversations are marked by questions that encourage the free exchange of information between patients and clinicians. Clinicians' use of open-ended questions has been positively associated with fostering open dialogue, building stronger relationships, enhancing engagement, and increasing patient satisfaction[43,52,53,55].	• Utilize open-ended questions that allow patients to share information freely.
		• Encourage patients to ask questions about their condition or treatment.
		• Examples of open-ended questions:
		  ◦ How have you been managing your symptoms?
		  ◦ What is your experience with the prescribed medication?

	Shared turn-taking: In unhurried conversations, the ratio of turn-taking is negotiated so that participants have relatively equal opportunities to speak.
	Research findings related to turn-taking:
	
	• Clinicians are primarily responsible for establishing shared turn-taking[70].
	• Shared turn-taking doesn't necessarily prolong consultations; studies suggest patients use fewer words and provide valuable information[54].
		• Deliver information in segments, creating chances to confirm patient understanding or allow questions.
		• Use probing questions or prompts to elicit patients' concerns or thoughts.
		  ◦ Does this align with your understanding?
		  ◦ What factors should we consider before deciding on your treatment?
		  ◦ How do you feel about this course of treatment?

	Conversational interruptions prevent participants from completing their turns and disrupt the conversation flow. • Clinicians often interrupt patients—typically within 11 s[56,57]. • These interruptions are usually intrusive, lacking cooperation, and can adversely affect patient satisfaction[58]. • Unacknowledged interruptions can leave patients feeling unimportant and negatively impact their relationship with clinicians[45].	• Engage in active listening; be mindful of tendencies to interrupt patients early in their responses. • Interrupt patients in a cooperative manner—providing support or asking clarifying questions—to foster a collaborative, patient-centered dialogue. • Verbally acknowledge patient interruptions, validating and emphasizing their contributions to the consultation.
Pauses	Unhurried conversations incorporate pauses and moments of silence, allowing participants to reflect and respond to relevant conversational and cognitive demands. Prior research suggests that pauses—including those prompted by clinicians using electronic medical records (EMRs) during consultations—contribute to patient comfort, agency, and participation[71].	• Be intentional with pauses, particularly after sharing vital medical information or posing a question. • Strategically use EMRs during consultations to introduce pauses that allow patients to reflect or ask questions. • Explain the benefits of pauses by emphasizing their purpose in inviting patient participation.
Emotionality	Unhurried conversations allow participants to express and discuss their emotions during consultations. Research suggests that when clinicians display emotions and empathy during consultations, it results in enhanced patient-clinician rapport and communication, simultaneously decreasing patients' psychological distress[41,59]	• Avoid censoring or deflecting patients' emotions during consultations. • Acknowledge patients' emotions using verbal and nonverbal communication—e.g., nodding, actively listening. • Use simple gestures (e.g., greetings, compliments) to incorporate a warm demeanor into consultations.
External Interruptions	Unhurried conversations involve fewer external interruptions (e.g., technical issues or staff interruptions). While these interruptions may not impact patient satisfaction, they do impede communication quality and prolong consultation times, resulting in increased clinician stress levels[46,60,61,72].	• Minimize interruptions during consultations by blocking technical notifications and creating protocols with staff for handling (non-)urgent matters. • Inform patients about possible interruptions during consultations and request their understanding. • Practice self-care to reduce stress and burnout caused by interruptions.

Embodiment	Unhurried conversations are supported through open body language, exemplified by behaviors like leaning forward, smiling, nodding, and sitting close. The use of open body language during consultations has been associated with patient participation, satisfaction, and collaboration[57,62–64,73].	• Demonstrate engagement and active listening through:
		  ◦ Open body language (e.g., sitting down, leaning forward, and orienting your body towards patients).
		  ◦ Facial reinforcers (e.g., nodding, animated expressions).

Off Task Topics	Light-hearted discussion about off-task topics such as weekend plans or hobbies can establish a natural conversational rhythm conducive to unhurried conversations. This off-task chatting can assist in building rapport, enhancing conversational depth, reducing hurriedness perceptions, and increasing patient satisfaction[7,48,59,65].	• Engage in off-task topics during the initial phases of consultation (e.g., history-taking) to build rapport. • Incorporate off-task topics while using EMRs; however, balance this with providing opportunities to pause. • Off-task topics may include the weather, jokes, hobbies, weekend plans, etc.

Delaying Topics	To support unhurried conversations, participants may delay addressing non-immediate topics, allowing more time for major concerns. This approach may allow for careful consideration of major issues while keeping consistent visit length[47]. Discussing several topics in a single visit may lead to hurriedness perceptions and a decline in care quality[66]. However, delaying minor topics comes with the caveat of potential additional consultations, which can be handled by other care team members or through telemedicine[67,68].	• At the start of the visit, jointly determine the urgent or major topics for discussion. Sample questions include:
		  ◦ What are the major concerns you would like to discuss?
		  ◦ Are there any other concerns that you would like to address?
		• Defer less urgent topics to a later time, perhaps delegating to other members of the care team or addressing them through telemedicine follow-ups.

instrument, including 10 global and 1 grand item(s), that may contain redundant items, potentially causing response fatigue. Our future goal is to create a tool consisting of only these 11 items (relying upon global and grand assessments), but additional work is required to verify the reliability and validity of this shorter instrument.

4.3. Practice implications

The study's iterative design and testing procedures facilitated the development of UCAT as a convenient rating tool. Additionally, the 5-point Likert scale simplifies the assessment process for healthcare

practitioners without much need for detailed note-taking. These design features, along with the promising psychometric properties, make UCAT practical and efficient. Consequently, UCAT may prove useful not only for evaluating the impact of unhurried conversations in larger research studies but also as a guiding tool for clinicians and medical students looking to assess their consultation practices. To aid clinicians in enhancing their proficiency across the verbal and nonverbal communicative dimensions of UCAT, recommendations for specific actions clinicians can take during consultations—based on prior research—are included in Table 5.

5. Conclusion

The components of UCAT provide a comprehensive assessment of unhurried conversations. The tool exhibits content and construct validity and can be used by healthcare professionals without extensive training. Using the UCAT may support practitioners in improving their ability to facilitate unhurried conversations, which is the cornerstone of careful and kind care.

CRediT authorship contribution statement

Dron M. Mandhana: Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Victor M. Montori:** Writing – review & editing, Supervision, Methodology, Investigation, Conceptualization. **Lillian Su:** Validation. **Cristian Soto Jacome:** Writing – review & editing, Visualization, Resources, Project administration, Methodology, Investigation, Conceptualization. **Yohanna Tesfai:** Writing – review & editing, Visualization, Resources. **Dawna I. Ballard:** Writing – review & editing, Supervision, Methodology, Investigation, Conceptualization. **Sandra Algarin Perneth:** Writing – review & editing, Investigation. **Nataly R. Espinoza Suarez:** Writing – review & editing, Investigation. **Michael R. Gionfriddo:** Writing – review & editing, Investigation. **Sarah B. Johnson:** Writing – review & editing, Visualization, Resources, Investigation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.pec.2024.108237.

References

[1] Montori VM. Turning away from industrial health care toward careful and kind care. Acad Med 2019;94(6). ⟨https://journals.lww.com/academicmedicine/fulltext/2019/06000/turning_away_from_industrial_health_care_toward.25.aspx⟩.
[2] Prasad K, Poplau S, Brown R, Yale S, Grossman E, Varkey AB, Williams E, Neprash H, Linzer M. Time pressure during primary care office visits: A prospective evaluation of data from the healthy work place study (for the Healthy Work Place I) J Gen Intern Med 2020;35(2):465–72. https://doi.org/10.1007/s11606-019-05343-6.
[3] Geraghty EM, Franks P, Kravitz RL. Primary care visit length, quality, and satisfaction for standardized patients with depression. J Gen Intern Med 2007;22 (12):1641–7. https://doi.org/10.1007/s11606-007-0371-5.
[4] Braddock CH, Snyder L. The doctor will see you shortly. J Gen Intern Med 2005;20 (11):1057–62. https://doi.org/10.1111/j.1525-1497.2005.00217.x.
[5] Assing Hvidt E. Time work": An analysis of temporal experiences and agentic practices in the "good" doctor-patient relationship in general practice. Health 2024;28(1):144–60. https://doi.org/10.1177/13634593221116504.
[6] Pieterse AH, Stiggelbout AM, Montori VM. Shared decision making and the importance of time. JAMA 2019;322(1):25–6. https://doi.org/10.1001/jama.2019.3785.
[7] Gross DA, Zyzanski SJ, Borawski EA, Cebul RD, Stange KC. Patient satisfaction with time spent with their physician. J Fam Pract 1998;47(2):133–8.
[8] Montori V, Hargraves IG, Breslin M, Shaw K, Morera L, Branda M, Montori VM. Careful and kind care requires unhurried conversations. Catal Carryover 2019;5(5). https://doi.org/10.1056/CAT.19.0696.
[9] Hargraves I, LeBlanc A, Shah ND, Montori VM. Shared decision making: The need for patient-clinician conversation, not just information. Health Aff 2016;35(4):627–9. https://doi.org/10.1377/hlthaff.2015.1354.
[10] Montori VM. Removing the blindfold: The centrality of care in caring for patients with multiple chronic conditions. Suppl 1 Health Serv Res 2021;56(Suppl 1):969–72. https://doi.org/10.1111/1475-6773.13865.
[11] Montori VM, Ruissen MM, Hargraves IG, Brito JP, Kunneman M. Shared decision-making as a method of care. BMJ Evid-Based Med 2023;28(4):213–7. https://doi.org/10.1136/bmjebm-2022-112068.
[12] Dominique A, Sreenivas K, Ryan A, Victor M. Leadership for careful and kind care. BMJ Lead 2022;6(2):125. https://doi.org/10.1136/leader-2021-000451.
[13] Brett-Fleegler M, Rudolph J, Eppich W, Monuteaux M, Fleegler E, Cheng A, Simon R. Debriefing assessment for simulation in healthcare: Development and psychometric properties. Simul Healthc 2012;7(5):288–94. https://doi.org/10.1097/SIH.0b013e3182620228.
[14] Martin JA, Regehr G, Reznick R, Macrae H, Murnaghan J, Hutchison C, Brown M. Objective structured assessment of technical skill (osats) for surgical residents. BJS (Br J Surg) 1997;84(2):273–8. https://doi.org/10.1046/j.1365-2168.1997.02502.x.
[15] Regehr G, MacRae H, Reznick RK, Szalay D. Comparing the psychometric properties of checklists and global rating scales for assessing performance on an osce-format examination. Acad Med 1998;73(9):993–7. ⟨https://journals.lww.com/academicmedicine/fulltext/1998/09000/comparing_the_psychometric_properties_of.20.aspx⟩.
[16] Worthington RL, Whittaker TA. Scale development research:A content analysis and recommendations for best practices. Couns Psychol 2006;34(6):806–38. https://doi.org/10.1177/0011000006288127.
[17] Diamantopoulos A, Winklhofer HM. Index construction with formative indicators: An alternative to scale development. J Mark Res 2001;38(2):269–77. https://doi.org/10.1509/jmkr.38.2.269.18845.
[18] Runnacles J, Thomas L, Sevdalis N, Kneebone R, Arora S, Cooper M. Development of a tool to improve performance debriefing and learning: The paediatric objective structured assessment of debriefing (osad) tool. Postgrad Med J 2014;90(1069):613–21. https://doi.org/10.1136/postgradmedj-2012-131676.
[19] Dillman DA, Smyth JD, Christian LM. Internet, phone, mail, and mixed-mode surveys: The tailored design method. John Wiley & Sons,; 2014.
[20] Hinkin TR. A brief tutorial on the development of measures for use in survey questionnaires. Organ Res Methods 1998;1(1):104–21. https://doi.org/10.1177/109442819800100106.
[21] Kline R. Exploratory and confirmatory factor analysis. In: Petscher y, Schatsschneider ve c, editors. Applied Quantitative Analysis in the Social Sciences İçinde. New York: Routledge; 2013. p. 171–207.
[22] Neuendorf K.A. The content analysis guidebook. sage; 2017.
[23] Brito JP, Castaneda-Guarderas A, Gionfriddo MR, Ospina NS, Maraka S, Dean DS, Castro MR, Fatourechi V, Gharib H, Stan MN, Branda ME, Bahn RS, Montori VM. Development and pilot testing of an encounter tool for shared decision making about the treatment of graves' disease. Thyroid 2015;25(11):1191–8. https://doi.org/10.1089/thy.2015.0277.
[24] Montori VM, Shah ND, Pencille LJ, Branda ME, Van Houten HK, Swiglo BA, Kesman RL, Tulledge-Scheitel SM, Jaeger TM, Johnson RE, Bartel GA, Melton LJ, Wermers RA. Use of a decision aid to improve treatment decisions in osteoporosis: The osteoporosis choice randomized trial. Am J Med 2011;124(6):549–56. https://doi.org/10.1016/j.amjmed.2011.01.013.
[25] Weymiller AJ, Montori VM, Jones LA, Gafni A, Guyatt GH, Bryant SC, Christianson TJH, Mullan RJ, Smith SA. Helping patients with type 2 diabetes mellitus make treatment decisions: Statin choice randomized trial. Arch Intern Med 2007;167(10):1076–82. https://doi.org/10.1001/archinte.167.10.1076.
[26] Espinoza Suarez NR, LaVecchia CM, Morrow AS, Fischer KM, Kamath C, Boehmer KR, Brito JP. Able to support patient financial capacity: A qualitative analysis of cost conversations in clinical encounters. Patient Educ Couns 2022;105 (11):3249–58. https://doi.org/10.1016/j.pec.2022.07.016.
[27] Cicchetti DV. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. Psychol Assess 1994;6(4):284–90. https://doi.org/10.1037/1040-3590.6.4.284.
[28] Abell N, Springer DW, Kamata A. Developing and Validating Rapid Assessment Instruments. Oxford University Press,; 2009.
[29] Koo TK, Li MY. A guideline of selecting and reporting intraclass correlation coefficients for reliability research. J Chiropr Med 2016;15(2):155–63. https://doi.org/10.1016/j.jcm.2016.02.012.
[30] Baxter LA, Babbie ER. The Basics of Communication Research. Cengage Learning,; 2003.
[31] Carpenter S. Ten steps in scale development and reporting: A guide for researchers. Commun Methods Meas 2018;12(1):25–44. https://doi.org/10.1080/19312458.2017.1396583.

[32] Wothke W. Testing structural equation models. In: Bollen KA, Long JS, editors. Nonpositive Definite Matrices in Structural Modeling. Newbury Park, CA: Sage; 1993. p. 256–93.

[33] Lorenzo-Seva U, Ferrando PJ. Not positive definite correlation matrices in exploratory item factor analysis: Causes, consequences and a proposed solution. Struct Equ Model: A Multidiscip J 2021;28(1):138–47. https://doi.org/10.1080/10705511.2020.1735393.

[34] McCroskey JC, Young TJ. The use and abuse of factor analysis in communication research. Hum Commun Res 1979;5(4):375–82. https://doi.org/10.1111/j.1468-2958.1979.tb00651.x.

[35] Overholser BR, Sowinski KM. Biostatistics primer: Part 2. Nutr Clin Pract 2008;23 (1):76–84. https://doi.org/10.1177/011542650802300176.

[36] Hallgren KA. Computing inter-rater reliability for observational data: An overview and tutorial. Tutor Quant Methods Psychol 2012;8(1):23–34. https://doi.org/10.20982/tqmp.08.1.p023.

[37] Bensing JM, Verheul W, Jansen J, Langewitz WA. Looking for trouble: The added value of sequence analysis in finding evidence for the role of physicians in patients' disclosure of cues and concerns. Med Care 2010;48(7):583–8. https://doi.org/10.1097/MLR.0b013e3181d567a5.

[38] Boltz MG. Temporal dimensions of conversational interaction:The role of response latencies and pauses in social impression formation. J Lang Soc Psychol 2005;24 (2):103–38. https://doi.org/10.1177/0261927x05275734.

[39] Eli K, Hawkes C, Perkins GD, Slowther A-M, Griffiths F. Caring in the silences: Why physicians and surgeons do not discuss emergency care and treatment planning with their patients — an analysis of hospital-based ethnographic case studies in england. BMJ Open 2022;12(3):e046189. https://doi.org/10.1136/bmjopen-2020-046189.

[40] Booth A, LeCouteur A, Chur-Hansen A. The impact of the desktop computer on rheumatologist–patient consultations. Clin Rheumatol 2013;32(3):391–3. https://doi.org/10.1007/s10067-012-2140-z.

[41] Fujimori M, Shirai Y, Asai M, Kubota K, Katsumata N, Uchitomi Y. Effect of communication skills training program for oncologists based on patient preferences for communication when receiving bad news: A randomized controlled trial. J Clin Oncol 2014;32(20):2166–72. https://doi.org/10.1200/jco.2013.51.2756.

[42] Jenkins L, Cosgrove J, Ekberg K, Kheder A, Sokhi D, Reuber M. A brief conversation analytic communication intervention can change history-taking in the seizure clinic. Epilepsy Behav 2015;52:62–7. https://doi.org/10.1016/j.yebeh.2015.08.022.

[43] Pawlikowska T, Zhang W, Griffiths F, van Dalen J, van der Vleuten C. Verbal and non-verbal behavior of doctors and patients in primary care consultations – how this relates to patient enablement. Patient Educ Couns 2012;86(1):70–6. https://doi.org/10.1016/j.pec.2011.04.019.

[44] Plug L, Lennon R, Smith R. Measured and perceived speech tempo: Comparing canonical and surface articulation rates. J Phon 2022;95:101193. https://doi.org/10.1016/j.wocn.2022.101193.

[45] Realini T, Kalet A, Sparling J. Interruption in the medical interaction. Arch Fam Med 1995;4(12):1028–33. https://doi.org/10.1001/archfami.4.12.1028.

[46] Rhoades DR, McFarland KF, Finch WH, Johnson AO. Speaking and interruptions during primary care office visits. Fam Med 2001;33(7):528–32. ⟨http://europepmc.org/abstract/MED/11456245⟩.

[47] Tai-Seale M, McGuire TG, Zhang W. Time allocation in primary care office visits. Health Serv Res 2007;42(5):1871–94. https://doi.org/10.1111/j.1475-6773.2006.00689.x.

[48] White S, Stubbe M. D'yuh like porridge": Social talk as a relational, interactional, and clinical component of surgical consultations. Qual Health Commun 2022;1(1): 4–25. https://doi.org/10.7146/qhc.v1i1.125968.

[49] Bourhis RY, Roth S, MacQueen G. Communication in the hospital setting: A survey of medical and everyday language use amongst patients, nurses and doctors. Soc Sci Med 1989;28(4):339–46. https://doi.org/10.1016/0277-9536(89)90035-X.

[50] Manson JH, Bryant GA, Gervais MM, Kline MA. Convergence of speech rate in conversation predicts cooperation. Evol Hum Behav 2013;34(6):419–26. https://doi.org/10.1016/j.evolhumbehav.2013.08.001.

[51] Ishikawa H, Hashimoto H, Kinoshita M, Fujimori S, Shimizu T, Yano E. Evaluating medical students' non-verbal communication during the objective structured clinical examination. Med Educ 2006;40(12):1180–7. https://doi.org/10.1111/j.1365-2929.2006.02628.x.

[52] Stewart MA. What is a successful doctor-patient interview? A study of interactions and outcomes. Soc Sci Med 1984;19(2):167–75. https://doi.org/10.1016/0277-9536(84)90284-3.

[53] Visser LNC, Kunneman M, Murugesu L, van Maurik I, Zwan M, Bouwman FH, Schuur J, Wind HA, Blaauw MSJ, Kragt JJ, Roks G, Boelaarts L, Schipper AC,

Schooneboom N, Scheltens P, van der Flier WM, Smets EMA. Clinician-patient communication during the diagnostic workup: The abide project. Alzheimer'S Dement: Diagn, Assess Dis Monit 2019;11(1):520–8. https://doi.org/10.1016/j.dadm.2019.06.001.

[54] Roter DL, Larson SM, Beach MC, Cooper LA. Interactive and evaluative correlates of dialogue sequence: A simulation study applying the rias to turn taking structures. Patient Educ Couns 2008;71(1):26–33. https://doi.org/10.1016/j.pec.2007.10.019.

[55] Bertakis KD, Roter D, Putnam SM. The relationship of physician medical interview style to patient satisfaction. J Fam Pract 1991;32(2):175–81.

[56] Singh Ospina N, Phillips KA, Rodriguez-Gutierrez R, Castaneda-Guarderas A, Gionfriddo MR, Branda ME, Montori VM. Eliciting the patient's agenda- secondary analysis of recorded clinical encounters. J Gen Intern Med 2019;34(1):36–40. https://doi.org/10.1007/s11606-018-4540-5.

[57] Zulman DM, Haverfield MC, Shaw JG, Brown-Johnson CG, Schwartz R, Tierney AA, Zionts DL, Safaeinili N, Fischer M, Thadaney Israni S, Asch SM, Verghese A. Practices to foster physician presence and connection with patients in the clinical encounter. JAMA 2020;323(1):70–81. https://doi.org/10.1001/jama.2019.19003.

[58] Li HZ, Zhang Z, Yum YO, Lundgren J, Pahal JS. Interruption and patient satisfaction in resident-patient consultations. Health Educ 2008;108(5):411–27. https://doi.org/10.1108/09654280810900026.

[59] Levinson W, Gorawara-Bhat R, Lamb J. A study of patient clues and physician responses in primary care and surgical settings. JAMA 2000;284(8):1021–7. https://doi.org/10.1001/jama.284.8.1021.

[60] Ting YY, Reid JL, Treloar E, Lee WSB, Tee JY, Cong WJP, Peng D, Edwards S, Ey J, Edwardes N, Granchi N, Maddern GJ. Do you have any questions? An analysis of question asking patterns in surgical outpatient consultations. ANZ J Surg 2022;92 (6):1388–93. https://doi.org/10.1111/ans.17642.

[61] Dearden A, Smithers M, Thapar A. Interruptions during general practice consultations— the patients' view. Fam Pract 1996;13(2):166–9. https://doi.org/10.1093/fampra/13.2.166.

[62] Harrigan JA, Oxman TE, Rosenthal R. Rapport expressed through nonverbal behavior. J Nonverbal Behav 1985;9(2):95–110. https://doi.org/10.1007/BF00987141.

[63] Duggan AP, Parrott RL. Physicians' nonverbal rapport building and patients' talk about the subjective component of illness. Hum Commun Res 2006;27(2):299–311. https://doi.org/10.1111/j.1468-2958.2001.tb00783.x.

[64] Robinson JD. Getting down to business: Talk, gaze, and body orientation during openings of doctor-patient consultations. Hum Commun Res 2006;25(1):97–123. https://doi.org/10.1111/j.1468-2958.1998.tb00438.x.

[65] Eide H, Graugaard P, Holgersen K, Finset A. Physician communication in different phases of a consultation at an oncology outpatient clinic related to patient satisfaction. Patient Educ Couns 2003;51(3):259–66. https://doi.org/10.1016/S0738-3991(02)00225-2.

[66] Abbo ED, Zhang Q, Zelder M, Huang ES. The increasing number of clinical items addressed during the time of adult primary care visits. J Gen Intern Med 2008;23 (12):2058–65. https://doi.org/10.1007/s11606-008-0805-8.

[67] Tai-Seale M, McGuire T. Time is up: Increasing shadow price of time in primary-care office visits. Health Econ 2012;21(4):457–76. https://doi.org/10.1002/hec.1726.

[68] Heritage J, Robinson JD, Elliott MN, Beckett M, Wilkes M. Reducing patients' unmet concerns in primary care: The difference one word can make. J Gen Intern Med 2007;22(10):1429–33. https://doi.org/10.1007/s11606-007-0279-0.

[69] Berger CR, Calabrese RJ. Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. Hum Commun Res 2006;1(2):99–112. https://doi.org/10.1111/j.1468-2958.1975.tb00258.x.

[70] Frosch DL, May SG, Rendle ASK, Elwyn G CT. Authoritarian physicians and patients' fear of being labeled 'difficult' among key obstacles to shared decision making. Health Aff 2012;31(5):1030–8. https://doi.org/10.1377/hlthaff.2011.0576.

[71] McGrath JM, Arar NH, Pugh JA. The influence of electronic medical record usage on nonverbal communication in the medical interview. Health Inform J 2007;13 (2):105–18. https://doi.org/10.1177/1460458207076466.

[72] Santos CN, Pedrosa BF, Martins M, Gouveia F, Franco F, Vardasca MJ, Pedro B, Nogueira JD. Interruptions during general practice consultations: Negative impact on physicians, and patients' indifference. Fam Pract 2022. https://doi.org/10.1093/fampra/cmac129.

[73] Griffith III CH, Wilson JF, Langer S, Haist SA. House staff nonverbal communication skills and standardized patient satisfaction. J Gen Intern Med 2003;18(3):170–4. https://doi.org/10.1046/j.1525-1497.2003.10506.x.