

Development of an instrument to measure the quality of standardized/simulated patient verbal feedback

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Abstract

Standardized/simulated patients (SPs) are being asked to provide formative verbal feedback to medical students. There is a need to objectively measure the quality of this feedback. This paper describes the theoretical and empirical development of the Quality of Standardized Patient Feedback form (QSF), an instrument designed to measure the quality of standardized/simulated patient verbal feedback. The QSF consists of 7 categories derived from existing literature on feedback. Interrater and internal consistency reliabilities of QSF scores were calculated through two pilot studies. In the first, 2 standardized patient educators (SPEs) analyzed 14 videos of SP verbal feedback (weighted kappa = 0.73). In the second study, 14 SPs rated 3 videos (Intraclass correlation coefficient = 0.92. Internal reliability was 0.79 (Cronbach's alpha). Twenty-one expert SPEs were asked to rate the QSF categories as to their importance in providing feedback to learners. SPEs agreed on the importance of five of the seven categories, but were split on the importance of two categories. We found theoretical and practical support for the QSF categories. The QSF is a useful instrument for evaluating the quality of SP verbal feedback.

Introduction

Traditionally, the role of standardized/simulated patients (SPs) has been to portray patients during student teaching and testing. SPs are usually skilled and consistent at simulating real patients in terms of providing patient history and physical findings,^{1,3} but we found they are less skilled in providing feedback. More often now, SPs are being asked to provide formative feedback to learners from the perspective of the patient.^{1,4,5} Receiving direct and candid feedback from a patient's viewpoint provides a rare opportunity for medical students and physicians to hear how their communication is perceived,⁶ and this feedback can be a powerful influence on learning,

achievement^{7,8} and motivational levels.⁹ Although efficacy of SP feedback has been measured from the students' viewpoint,¹⁰ a search of the literature revealed only one instrument, Maastricht Assessment of Simulated Patients (MaSP), that contained a verbal feedback assessment scale for SPs.¹¹ The feedback scale of the MaSP lacked some items relevant for SP verbal feedback, and contained items considered irrelevant in our program. We found no instruments that quantified the quality of SP verbal feedback.

To meet the above need, the QSF was developed and published as part of a SP training package.^{12,13} However, the theoretical development and reliability of the instrument has never been reported. This paper describes the QSF's theoretical rationale and reliability data.

Innovation

The setting for developing the QSF was a U.S. medical school SP training program. The development involved twenty-eight SPs.

We selected the principles, characteristics, and models of providing feedback most relevant for SP verbal feedback, and condensed them into seven categories divided into 19 items (Figure 1). Theories on effective feedback predominantly involved feedback to learners by faculty.¹⁴⁻²⁰ SPs in our institution are specifically instructed by SPEs not to provide feedback on medical content of cases they portray. The areas of an encounter that SPs best provide feedback relate to the patient/physician interaction (interpersonal and communication skills) from the patient's point of view. The following were the theoretical rationale for inclusion of each category.

Standardized/simulated patients asked student to reflect.

Reflection is essential for a practitioner to identify gaps in performance, and numerous organizations have called for the incorporation of reflection at all three levels of medical education.²¹⁻²³ The effectiveness of feedback is enhanced if learners are trained to reflect and self-assess.²⁴

Standardized/simulated patients gave specific positive feedback

After receiving positive feedback, students were more likely to be interested in and persist in the activity,²⁵ but feedback needed to be specific to what was observed.²⁶ Providing positive feedback prior to negative (constructive) feedback made negative feedback much more acceptable.²⁷

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Key words: standardized/simulated patients, quality of standardized patient feedback form.

Conflict of interest: the authors report no conflicts of interest.

Received for publication: 3 August 2011.

Revision received: 10 February 2012.

Accepted for publication: 22 February 2012.

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Medical Education Development 2012; 2:e3

doi:10.4081/med.2012.e3

Standardized/simulated patients gave constructive feedback

Constructive/corrective feedback was considered essential for motivating and unfreezing recipients from their typical patterns of thought and behavior.²⁸ Specific and behavioral feedback is generally more powerful and effective than general and emotional feedback,²⁰ and corrective feedback was regarded as helpful by the recipient when delivered appropriately.²⁹

Standardized/simulated patients showed empathy for distressed student

Emotions can take up space in working memory and can interfere with cognitive processing and motivation.³⁰ The QSF requires SPs to be aware of the emotional environment, and act in an empathic manner when necessary. Inclusion of this category was supported by the PEARLS approach to feedback with the *E* standing for *empathic understanding*.³¹

Standardized/simulated patients finished with positive feedback (sandwich)

Research has consistently identified the sequence of constructive/corrective feedback delivery to be an important factor in acceptance.³² Corrective feedback was found to be more acceptable when it either followed or was sandwiched between positive feedback messages.³³

Standardized/simulated patients verified student's learning

Hearing a student summarize feedback may reveal any misunderstandings, which the SP can immediately correct.³⁴

At end of session, standardized/simulated patients asked student if s/he had other questions

Asking the student whether he or she had any questions about the encounter allowed students to further reflect upon the encounter and to clarify fuzzy feedback.²⁶ *Thanking the student* models social courtesy and ends the encounter on a positive note, increasing the likelihood that the student will remember and apply what was heard.²⁷

The greatest challenges in developing the QSF were i) determining the most relevant factors that contribute to the concept of *quality of verbal feedback*, ii) choosing the optimum number of items for both reliability and ease of evaluation, and iii) wording the items so they were free of ambiguity to raters.

Evaluation

Reliability

We evaluated the inter-rater reliability and

the internal reliability of the QSF using kappa, ICC and Cronbach's alpha. In study one, two experienced SPEs used the QSF to independently rate 14 randomly selected videos in which SPs gave verbal feedback to students.

In study two, we asked 14 SPs to use the QSF to independently rate three recorded video encounters of other SPs giving feedback to students.

Rater agreement between two SPEs rating the same videos was 0.73 (weighted kappa), indicating acceptable inter-rater agreement. When 14 SPs rated three videos, the intraclass correlation coefficient (ICC 2,1) was 0.92, suggesting a high level of rater agreement among these SPs. This model of ICC was chosen because all 14 SPs rated the three videos and they were considered a subset of all SPs. Internal reliability for six categories was 0.79 (Cronbach's alpha). Category IV (empathy) was dropped from the analysis because no students exhibited distress in the videos viewed. Item-test correlation of the category scores showed that each score correlated favorably with the overall scale (Table 1). Schlegel *et al.* (2012) reported on a modified version of the QSF (mQSF) used in Switzerland, and found acceptable validity evidence. Reliabilities ranged from 0.63 with one judge on one occasion to 0.88 using three judges and three occasions. Internal reliability (Cronbach's alpha) with 17 items was 0.80.³⁵

Content validity

In 2010, we surveyed 21 SPEs listed in the Association of Standardized Patient Educators registry to ascertain how essential they thought each category on the QSF was for effective feedback. The survey listed the category followed by four choices: essential, preferable, optional, not needed. The SPEs rated most of the categories on the QSF as being essential or preferable, but were nearly equally split on whether *addressing student distress* and *providing additional positive feedback* were needed for effective feedback (Table 2). Similarly, Schlegel found that one of the lowest rated items was item 12 : SP confirmed the feelings with student - an item under Category 4 *SP showed empathy for distressed student*.

Conclusions

We found theoretical and practical support for all of the QSF categories. QSF scores showed favorable internal and inter-rater reliabilities. We therefore conclude that the QSF is a useful instrument for evaluating the quality of SP verbal feedback.

Future studies will explore the effectiveness of the QSF to standardize and improve quality of verbal feedback by SPs.

Table 1. Item-test correlations by categories.

Category	Item-test correlation	Item-rest correlation	α^*
I. SP asked student to reflect (4 items)	0.4396	0.2277	0.8299
II. SP gave positive feedback (3 items)	0.7895	0.7041	0.7380
III. SP gave constructive feedback (3 items)	0.6829	0.4803	0.7839
V. SPs finished with positive feedback (1 item)	0.8802	0.8139	0.7024
VI. SP verified student's learning (2 items)	0.8818	0.7663	0.7008
VII. SP asked if student had other questions (2 items)	0.5825	0.4629	0.7836
Total scale	0.7936		

*Internal reliability coefficient of the test if item is removed. Note: Category IV (Empathy) omitted because constant in the sample; SP, standardized/simulated patient.

Table 2. Standardized patient educators' ratings of quality of standardized patient feedback form categories (cells indicate n. selecting each category).

Category	Essential	Preferable	Optional	Not needed
I. Ask student to reflect	17	4	0	0
II. Give specific positive feedback	16	4	0	1
III. Give specific constructive feedback	19	1	0	1
IV. Address student distress/defensiveness	5	6	8	1
V. Add additional positive feedback	4	7	7	2
VI. Verify student can recall feedback	5	10	3	2
VII a. Ask whether student has questions	13	4	4	0
VII b. Thank the student	12	3	5	1

Date _____
 Case ID _____
 Rater ID _____

I. SP asked student to reflect

- 1. SP: *So, how do you think it went?* 1
- 2. SP: *So, what are some things you think you did well?* 1
- 3. SP: *Is there anything you would do or say differently if you could do this over again?* 1
- 4. Gave student adequate time to answer questions before continuing 1

II. SP gave positive feedback

- 5. SP first gave positive feedback 1
- 6. SP's positive feedback referred to specific changeable behaviors 1
- (Check if positive feedback **MOSTLY** specific—some generalization okay)
- 7. SP gave feedback from patient's perspective 1

III. SP gave constructive feedback

- 8. SP's negative feedback referred to specific changeable behaviors (feedback not destructive) 1
- 9. SP limited the constructive feedback to 2 or fewer points. 1
- 10. SP gave constructive feedback from patient's perspective. 1

IV. SP showed empathy for distressed student (if student not distressed go to question #14)

- 11. SP stopped feedback and acknowledged students' feelings 1
 SP: *I'm feeling that you might be upset by this feedback.*
- 12. SP confirmed the feelings with student. 1
 SP: *Are you feeling [sad, angry, upset], or, is this true?*
- 13. SP reassured student about purpose of feedback 1
 SP: *Giving you feedback is our way to help you...*
- 14. If student didn't appear distressed by feedback, check box at right and go to question #15. 3

V. SP finished with positive feedback (sandwich)

- 15. SP finished feedback on a positive note. 2

VI. SP verified student's learning

- 16. SP asked student to summarize feedback given. 1
 SP: *What have you learned from this feedback session?*
- 17. The SP ensured that the student understood what s/he (the student) needed to work on 2

VII. At end of session, SP asked student if s/he had other questions

- 18. SP continued to ask student if he/she had questions until student said "no." 1
 SP: *Do you have any other questions or comments? Anything else you would like to ask?*
- 19. SP thanked the student. 1
 SP: *Thank you for your effort here today. I feel privileged to be part of your education.*

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TOTAL SCORE

Figure 1. Quality of standardized patient Feedback Form.

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