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TO BE OR NOT TO BE: SIMULATED PATIENTS' DRAMATIC PERFORMANCE AND MEDICAL STUDENTS' CLINICAL COMMUNICATION TRAINING

Vasco José Pinto de Almeida

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FACULDADE DE **MEDICINA**

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Mestrado

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O conhecimento é um caminho longo a percorrer. Porém, tenho a sorte de não o percorrer sozinho.

Tenho a sorte de ter um pai que caminha ao meu lado, um irmão incansável e exímio na ajuda que presta, um companheiro que nunca deixa de acreditar em nós, parceiras de boa viagem preparadas para qualquer situação, uma Telma João amiga do coração que é sempre bondosa e generosa, um Miguel Leal que acolhe e ensina a ser artista e uma Júlia, uma Júlia que caminha sempre comigo e está disposta a lutar ao meu lado. E, sobretudo, uma orientadora que nunca baixou os braços e nunca deixou de apoiar um projeto pelo qual tenho tanto carinho.

Tive o privilégio da companhia de todas estas pessoas durante a viagem que aqui termina, espero eu, em bom porto.

A todos o meu mais sincero obrigado. Espero que caminhemos muito mais.

This fellow is wise enough to play the fool;
And to do that well craves a kind of wit:
He must observe their mood on whom he jests,
The quality of persons, and the time,
And, like the haggard, check at every feather
That comes before his eye. This is a practise
As full of labour as a wise man's art
For folly that he wisely shows is fit;
But wise men, folly-fall'n, quite taint their wit.

WILLIAM SHAKESPEARE, Twelfth Night

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To be or not to be: simulated patients' dramatic performance and medical students' clinical communication training

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To be or not to be: simulated patients' dramatic performance and medical students' clinical communication training

Abstract

Simulation techniques have been used in medical student training, linking theory to its practical application, namely, through the usage of simulated patients (SP). Different SP types, as peers and students or professional SP with acting background, tailored to each teaching environment, could influence learning outcomes. We aim to understand how medical students evaluate their experience with different types of SP (actor vs. peer) in their clinical communication training, and their importance in learning.

The study followed a cross-sectional observational design, consisting in the application of a questionnaire to both current and former medical students that have been formally trained in clinical communication, recruited through convenience sampling (n=212).

Average age was 20 years old, 75% female, and most enrolled in the 2nd year. Participants consider SP techniques useful in clinical communication skill assessment, teaching and training, but interruption for feedback are not appreciated. Actor SP were preferred, except for post-simulation discussion. E-learning, though a valuable asset, can't replace in-person contact. Greater preparation and training of both SP types is possibly required, since students didn't perceive online simulations to be convincing or effective.

Students value the participation of SP in learning and evaluating communication skills, and identified differences between actor and students' performance during simulation. Further studies should follow a controlled trial design, and more objectives measures of communication ability, to further contribute in defining which SP performative techniques are more useful and efficient in communication skills training and assessment in medical education.

Keywords: actor; simulation; teaching; theatre; e-learning.

Introduction

The acquisition of competencies, skills and abilities obtained through deliberate, systematic and sustained effort to carry out complex tasks in a smooth and adjusted manner, has been taking a central role in medical education (Abelsson, 2017; Agency for Healthcare Research and Quality, 2020; Kerr et al., 2013; Liddell et al., 2002; McGaghie et al., 2011). To link theory to its practical application, using simulation techniques – by which real experiences are replaced or amplified through guided experiences, often of an immersive nature, that evoke or replicate aspects of the real world in a fully interactive way (Gaba, 2007) – has proved to be a valuable and efficient asset in student training either in traditional clinical competences as in interpersonal and communication ability (Bearman et al., 2017; Ker & Bradley, 2013; Nestel & Bearman, 2015).

In this context, the use of simulated and standardized patients deserves special attention. While the former (SP), which will be the focus here, is a person who has received training to represent someone with a disease or a health problem mimicking a real patient, portraying symptoms or medical issues (Agency for Healthcare Research and Quality, 2020), the latter refers to a lay person, who may or may not have their own medical problems, or even a real patient who has been coached to play the role of a patient or to depict a specific medical case (Beigzadeh et al., 2016).

The contemporary history of the simulated patient methodology, which can be used for education, assessment, and research in the context of health care (Agency for Healthcare Research and Quality, 2020; Lewis et al., 2017), has several well-documented factors behind its genesis, originating from humanistic, educational and external issues (Owen, 2017), guaranteeing the deontological creed not to cause harm to patients - SP are proxies for real patients, as such, representing the patient rather than

the clinician's perspective. Thus, for professionals in the clinical area, SP allow learning through evaluated experiences, rather than practice on vulnerable and possibly suffering patients in real consultations (Barrows, 1968, 1993; Owen, 2017).

The use of different SP types – such as professional SP with an acting background, volunteers without acting background, students or health professionals – tailored to each particular teaching environment, could potentially influence the learning outcomes (Nestel & Bearman, 2015; Pilnick et al., 2018).

Performance can be thought of as the representation of behaviours associated with all human activity (Carlson, 1996; Gordon, 2016; Schechner, 2012). In the specific context of patient simulation, and regardless of the SP's background, we can define performance as the tacit relationship that is established between the student, who accepts to be a doctor, and the actor, who accepts to be a SP (C. M. Smith et al., 2014).

In the performative studies domain, the concept of liminality is a key subject which can be defined as "a transitory and precarious phase between stable states, which is marked off by conceptual, spatial and/or temporal barriers, within which individuals, groups and/or objects are set apart from society and/or the everyday" (Skjoldager-Nielsen & Edelman, 2014). In this stage, participants have lost their previous symbolic status, but have yet to reach their new meaning, and liminality becomes an "in-between of potent but dangerous formlessness", making way for individual transformation (Skjoldager-Nielsen & Edelman, 2014). In the context of simulation, both SP and medical student enter a specific space – which is supposed to represent a medical office – to let go of their predefined personas, and embody a new meaning for that situation: the SP becomes the patient, and the medical student becomes the doctor, both of them meeting for the first time, forging a doctor-patient relationship, in their path to "individual transformation" (learning).

Performative techniques are used in SP, such as naturalism and method acting (Stanislavski), improvisation techniques (Spolin), breaking the fourth wall (Brecht), and Forum theatre and audience participation (Boal). Stanislavski's naturalism and method acting are key to the preparation of the SP's role, their emotions and character, and the narrative they intend to convey with the instructions provided (Stanislavski, 2018). Improvisation techniques are used by the SP as means to tell a coherent and consistent narrative, albeit having to follow the "rules" established by the instructions provided (Spolin, 1999). Brecht's breaking the fourth wall can be observed when the ongoing simulation is interrupted, breaking the "reality" of the simulation, for a moment of reflection and feedback (Barnett, 2021; Brecht, 2014). Boal's Forum theatre and audience participation occurs when the audience (peers, teachers) becomes an active participant, discussing the simulation, providing feedback and insight on what they just witnessed (Boal & Jackson, 2021).

A trained actor can make use of the aforementioned performative techniques in their SP approach, which might be advantageous from a theoretical viewpoint, compared to an untrained SP.

In this sense, the theoretical teaching of dramatic and performing arts has been incorporated into SP training, making performance a key component in the SP methodology (Hoffman et al., 2008; Sanko et al., 2013; Taylor, 2011). SP encounters can be described as being "the use of the most recognized and productive performance in medical education" (Case & Brauner, 2010).

SP are used in the Faculty of Medicine of the University of Oporto for undergraduate "Medical psychology" (2^{nd} year) and "Clinical Communication" (5^{th} year, optional) subjects. In-class training calls on untrained peer (student) SP, whereas trained (actor) SP are used for clinical communication skill assessment.

This study focus, therefore, on understanding how medical students from preclinical years evaluate their experience with SP in the context of their clinical communication training, and their importance in clinical communication learning. We also intended to evaluate students' perceptions regarding dramatic performance of actor and student SP techniques, namely, how well the SP played the role of the patient, prompted the students, maintained professionalism, created a realistic atmosphere, and compare their influence in clinical communication skills learning. Medical students' previous consumption habits of theatrical arts are also briefly examined and correlated with their perception of the SP's performance.

Methods

A cross-sectional observational study was performed, from April 2022 to July 2022. Study protocol was approved by the Faculty of Medicine Ethics Committee (Annex 1) and the study was performed in accordance with the guidelines of the Declaration of Helsinki in its current revision.

Study Population

Current and former medical students that have been formally trained in clinical communication, for a period of two to three semesters in a total of at least 56-75 hours. Training is based on experiential techniques (role-playing, and videotaped simulated clinical situations), in groups of 10 to 15 students.

The sample in study consisted of 212 participants.

Instrument

A survey instrument (questionnaire) (Annex 2) was developed through a comprehensive review of the existing tools for students to evaluate SP's roleplaying performances

(Himmelbauer et al., 2018; Schlegel et al., 2012). Questions from both the Maastricht Assessment of Simulated Patients (Wind et al., 2004) and the Nijmegen Evaluation of the Simulated Patient (Bouter et al., 2013) were adapted to fit the specific setting of SP usage in our Faculty of Medicine and the objective of this study. The instrument also included questions assessing participants' sociodemographic and academic characteristics, former experience as a theatrical performances' consumer, evaluation of their experience of different types of simulated patient techniques and its association with the acquisition of clinical communication skills.

Likert scales were used to measure students' perceptions of SP techniques, their experiences with SP, and the importance of SP in clinical communication skill training and assessment, with higher values being considered more positive.

Data collection strategy

Participants were recruited through convenience sampling, both in person, and online. Students were informed about the study procedures and aims and notified that the participation was anonymous and voluntary. Students who chose to participate signed an informed consent form. Questionnaires were self-applied.

Out of the 212 participants, 210 were recruited in person, and two were collected online. All were considered eligible for analysis.

Confidentiality and anonymity

An individual code was attributed to each questionnaire, not allowing for the identification of the participant, both in person and online. Confidentiality was assured and the data was transcribed to a Microsoft Excel® database, protected by a password only known by the investigation team.

Statistical Analysis

Descriptive data was presented as mean values, standard deviation, frequencies and percentages. The Kolmogorov-Smirnoff test was used to assess the normality of the variables' distribution. As the data was not normally distributed, nonparametric tests such as the Mann-Whitney U and paired Wilcoxon Signed-Rank tests were used to evaluate statistically significant differences between the variables in study.

Some questions concerning dramatic performance assessment had a negative connotation, so their values were reversed for statistical analysis to match the remaining variables.

Statistical significance was set at $p<0.05$. Statistical analysis was conducted using IBM SPSS Statistics for Mac v28.0.

Results

The sample's sociodemographic and academic characteristics are shown in **Table 1**. Most students were about 20 years old, female (75%), and were enrolled in their second year of Medical School (97,2%). Most of the sample also referred having had contact with a SP in Medical Psychology 1 (97,2%) and Medical Psychology 2 (68,7%) Curricular Units.

Assessment of SP techniques

The sample's assessment of some SP techniques' effectiveness is shown in **Table 2**. Interrupting the simulation to provide feedback is considered to be useful (mean ± standard deviation: 1,74 ± 0,99, median and mode: 2 out of 3). The use of SP was seen as effective in both clinical communication skill assessment (2,44 out of 3) and in communication skills teaching and training (2,50 out of 3).

The assessment of SP usefulness in the teaching of clinical communication subjects by either actor or student SP can be consulted in **Table 3**. "Clinical Interview Model" was the subject that most benefited from the usage of actor or student SP (80% and 85% respectively). Student SP were considered more useful than actor SP when it came to the "Delivering bad news" subject (0,31 vs. 0,22 respectively, p=0,03). No other significant differences were found between groups.

Dramatic performance assessment

The dramatic performance assessment by actor and student SP is shown in **Table 4**. In average, actor SP were preferred when compared to student SP (2,13 vs 1,90 out of 3, p<0,001). In fact, students rated actor SP better than the student SP for the following questions (range 0 to 3):

- (5) SP kept his character for the duration of the simulation (2,66 vs. 1,87; p<0,001);
- (9) SP played their part well (2,50 vs. 1,96; p<0,001);
- (1) SP seemed genuine (2,45 vs. 1,86; p<0,001);
- (11) SP knew their part well (2,45 vs. 1,95; p<0,001);
- (8) SP's answers were natural (2,39 vs. 1,92; p<0,001);
- (12) SP reacted naturally during the simulation (2,37 vs. 1,86; p<0,001);
- (7) SP's appearance seemed the part (2,36 vs. 1,38; p<0,001);
- (2) SP could be a real patient (2,29 vs. 1,60; p<0,001);
- (6) SP challenged the student (1,73 vs. 1,60; p=0,02);
- (3) SP was clearly playing a part (1,25 vs. 0,91; p<0,001).

On the other hand, student SP were preferred in comparison to actor SP for the question "(17) Discussion with SP at the end of the simulation helped me improve" (2,55 vs. 1,91 respectively; p<0,001).

Both actor and student SP' were rated positively by students in every question except for the following:

- "(3) SP was clearly playing a part" for both SP types (1,25 vs. 0,91), both rated negatively, with student SP having a lower rating (p<0,001);
- "(7) SP's appearance seemed the part" for student SP, rated negatively.

Theatre attendance habits

About one quarter of the students had attended at least a theatre performance during the last 12 months, as shown on **Table 5**. These students attended either one (38,5%), two (25%), or three or more (36,5%) theatre performances in the previous 12 months.

The vast majority of students watched these shows in person (98,1%), and through either one (61,7%) or two (27,7%) different medium of theatre consumption.

Theatre attendance and SP assessment

The sample's characteristics by theatre attendance habits are shown in **Table 6**. A higher prevalence of female students was found among the students who had attended a theatre performance in the last 12 months than among those who had not (85,2% vs. 71,5%, p=0,046). No significant differences were found when comparing both groups' ages, student years and Curricular Units with SP contact.

The sample's assessment of some SP techniques' effectiveness by theatre attendance habits is shown in **Table 7**. Students who did not attend a theatre performance in the last 12 months considered "interrupting the simulation to provide

feedback" to be more useful than those who did attend (1,82 vs. 1,51 respectively, p=0,038). No significant differences were found when comparing both groups' opinions on the effectiveness of SP use in clinical communication skill assessment or communication skills teaching and training.

The dramatic performance assessment by actor and student SP, by theatre attendance during the last 12 months is shown in **Table 8**. Students who had attended a theatre performance in the last 12 months rated actor SP's dramatic performances a lower when compared to those who did not attend a theatre performance in the last 12 months for questions "(4) SP seemed to withhold information for no reason" (1,74 vs. 2,01, p=0,032) and "(14) SP provided coherent clinical information" (2,11 vs. 2,48, p=0,003). No significant difference was found between groups for both actor and student SP's mean dramatic performance scores.

Both groups rated similarly the assessment of SP usefulness in the teaching of clinical communication subjects by either actor or student SP (data not shown).

Simulation during the COVID-19 pandemic

Students' assessment of the effectiveness of usage of SP in digital communication skills training in response to the COVID-19 pandemic is shown on **Table 9**. Digital communication in SP was not considered useful. Students found simulations to be more feasible and economic, but not convincing or even effective, in this context.

No significant differences were found when comparing students who had attended a theatre performance in the last 12 months with those who had not concerning the usage of digital communication in SP (**Table 10**).

Discussion

Assessment of SP techniques and dramatic performance

Students perceived the use of SP in both clinical communication skills teaching and training, and in clinical communication skills assessment to be rather effective, in line with previous findings (Bagacean et al., 2020; Bearman et al., 2013; Carvalho et al., 2014; Cleland et al., 2009; May et al., 2009; Stillman et al., 1983).

Interestingly, the interruption of the simulation for feedback was not considered as particularly useful. Others have found that students value the opportunity for constructive discussion after the simulation (Bagacean et al., 2020; Berkhof et al., 2011; George et al., 2022; Henry et al., 2013; Ruiz-Moral et al., 2019; S. Smith et al., 2007).

It is possible that the interruption of the simulation might constitute a break in the perceived simulation experience, interrupting the illusion of an intended realistic doctor-patient interaction and, as such, students might not perceive it as an asset in the context of learning. Also, they may feel challenged and unsure of being able to continue adequately the simulated interaction, or feeling exposed and judged (Ker & Bradley, 2013; Rudolph et al., 2008).

Participants considered that the learning of a structured clinical interview was facilitated by the use of SP for both actor and student SP, when compared with other communication subjects focused on specific situations. However, students perceived student SP to be more useful than actor SP for training the deliver bad news. More emotional performances may have been felt as less challenging when less trained SP were used. Delivering bad news is a difficult task for physicians and students that requires training (Buckman, 1984). As such it is understandable that students find their student SP safer and more useful in the teaching of this technique.

Students generally positively appreciated both actor and student SP's performances, rating both positively for most questions. Nevertheless, they considered both actor and student SP to be "clearly playing a part", and student SP's appearances "not seeming the part". It has been previously observed that simulation with SP context could be perceive as artificial, which was believed to be a "testament to the students' lack of clinical experience" (Himmelbauer et al., 2018), which could be a plausible explanation for a sample of mostly 2nd year (pre-clinical) students.

Students showed preference for student SP rather than actor SP when it came to the discussion with SP at the end of the simulation. Research has shown that students might benefit from also playing a SP role, allowing them to see themselves from the patient's perspective (Bosse et al., 2012). Peer feedback in SP training, coming from someone with identical experience and background which predominantly relies on student SP in this University, provides a better and more comfortable learning experience in empathy than actor SP, who are more frequently used for skill assessment (Cushing et al., 2011).

Students generally rated actor SP's dramatic performances higher than student SP's, which is in line with previous findings in literature (Bagacean et al., 2020; Bell et al., 2014; Lane & Rollnick, 2007; Willson et al., 2021).

Performative techniques

Several specific performative techniques and SP performances were assessed in this study, namely naturalism (portraying a patient who could be real, with a coherent narrative) and improvisation (maintaining a coherent narrative throughout the simulation) (Spolin, 1999; Stanislavski, 2018). As referred previously, discussion with the SP at the end of simulation, was a proxy for Forum theatre discussions, whereas the breaking of the fourth wall was assessed when students were questioned whether the

interruption of the simulation was advantageous (Boal & Jackson, 2021; Brecht, 2014).

Students considered the actor SP's ability regarding naturalistic (on their own or combined with improvisation) techniques as the most successful strategies of all the dramatic performance. This finding can be explained by the fact that naturalistic techniques are much appreciated in the SP preparation context, contributing to the creation of a real experience, allowing students to immerse themselves in the simulation, believing the actor to be a real patient and amplifying their learning experience (Keltner et al., 2011; Löffler-Stastka et al., 2017; Wallace, 2007). Improvisation techniques on their own, however, were not as well rated. The Brechtian breaking the fourth wall technique, as previously discussed, was nor perceived as useful, whereas Boal's Forum theatre was quite well rated when assessing student SP results.

Theatre attendance and SP assessment

One fourth of the participant students had watched at least one theatrical performance in the last 12 months. In comparison, the literature shows that only 13% of the Portuguese attended theater shows in the last year, with higher socioeconomic levels associated with a higher percentage of theater visits. (up to 40%) (Pais et al., 2022). Considering medical students have been associated with a higher-than-average socioeconomic status (Khan et al., 2020), it makes sense that our sample had a higher attendance rate than the average Portuguese population.

Sample characteristics did not differ much in the group that reported going to the theater more often except for being a female student. This trend is not observed in the Portuguese population, with no discernible differences between gender regarding theatre attendance habits (12% of females and 13% of males attended at least a theatre

show during the last 12 months) (Pais et al., 2022).

Even though no significant differences were found when comparing both groups' opinions on the effectiveness of SP use in clinical communication skill assessment or communication skills teaching and training, students who had attended more theatre shows found it slightly less effective, and valued less the interruption of the simulation for feedback. They were also more critical of actor SP's dramatic performances. Theatre spectators cannot be limited to passive people watching a theatrical performance, they don't only watch the performance, but they also feel and try interpret what they experience in their own manner (Rancière & Elliott, 2009). As such, it is natural that individuals with previous theatre-attending experience tend to be more demanding and evaluative regarding performative techniques, such as the ones used by actor SPs.

Simulation during the COVID-19 pandemic

The use of digital communication as an alternative means to presential SP sessions, used in response to the COVID-19 pandemic, was not seen as advantageous. Students perceived online training of communication skills through simulation with SPs as not provide convincing or effective simulations, but might provide more feasible and economic simulation experiences. Although some studies suggest similar results between online and in person medical teaching, regarding students' needs and satisfaction, development of skills appears to be less effective when using digital tools (AlQhtani et al., 2021; Kaur et al., 2020; Thomas et al., 2021).

Strengths and limitations

This study can contribute to the understanding of student perceptions of the usage of different SP types for clinical communication skills teaching, training and assessment.

One of limitations is the convenience sampling. All the students attend one Faculty of Medicine and some subgroups might be under-represented compromising the generalization of our findings.

In addition, we had a very low adherence rate to the online questionnaire. In further studies this strategy should be optimized for better results (Saleh & Bista, 2017; Wu et al., 2022).

The fact that different SP are mostly used for different objectives – peers without previous acting background for training, whereas actor SP for skill assessment setting, might affect student perceptions and constitute a bias.

Our study design focused on students' perceptions and, thus, we did not assess objectively the effectiveness of different types of SP/performative techniques in different types of SP.

Conclusions

Medical students perceive SP techniques to be useful in both clinical communication skill assessment, but also in teaching and training. They prefer actor SP using naturalistic performative techniques for simulation in the context of clinical communication learning, but post-simulation discussion is reported as more favourable when simulation was performed by peers.

Even though e-learning was necessary for mitigating the lack of in-person contact, it should not be considered a viable alternative to in-person contact in this setting. Digital teaching methods need possibly a greater preparation and training of both types of SP, since students do not perceive simulations through digital means to be neither convincing or effective.

Further studies in this area following a controlled trial design with more representative samples can further contribute to define which performative techniques

are more useful and efficient in communication skills training and assessment during medical education. In addition, it will be important to consider not only the students' perceptions, but also to assess student's clinical communication performance through the analysis of the SP sessions' recordings.

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Tables

Table 1. Student sociodemographic and academic characteristics.

Variable	**n**	**Mean ± SD**
Age	212	20,1 ± 2,64
	n	**%**
Gender	212	100%
Female	159	75%
Male	53	25%
Student year	212	100%
2nd year	206	97,2%
3rd year	3	1,4%
4th year	1	0,5%
5th year	1	0,5%
6th year	1	0,5%
Curricular Units with SP contact	211	100%
Medical psychology 1	206	97,6%
Medical psychology 2	145	68,7%
Clinical communication 1	3	1,4%
Clinical communication 2	2	0,9%

Table 2. SP techniques' effectiveness assessment (range 0 to 3).

Question	n	Mean ± SD
Effectiveness of SP in clinical communication skills teaching and training	211	2,50 ± 0,57
Effectiveness of SP in clinical communication skills assessment	211	2,44 ± 0,57
Usefulness of simulation interruption for feedback	198	1,74 ± 0,99

Table 3. Actor and student SP's usefulness according specific CC topics (modules) (range 0 to 1).

Subject	Actor mean ± SD (n)	Student mean ± SD (n)	Z[a] (p-value)
Clinical Interview Model	0,80 ± 0,40 (209)	0,85 ± 0,36 (209)	-1,483[c] (0,138)
Dealing with emotions	0,43 ± 0,50 (209)	0,37 ± 0,48 (209)	-1,492[b] (0,136)
Delivering bad news	0,22 ± 0,42 (209)	0,31 ± 0,46 (209)	-2,177[c] (0,03*)
Motivational interview	0,13 ± 0,34 (209)	0,13 ± 0,34 (209)	,000 (1)

a. Paired Wilcoxon Signed-Rank test; b. based on positive ranks; c. based on negative ranks; * p-value < 0,05.

Table 4. Actor and student SP's dramatic performance assessment (range 0 to 3).

#	Question	Actor mean ± SD (n)	Student mean ± SD (n)	Z[a] (p-value)
5	SP kept his character for the duration of the simulation	2,66 ± 0,69 (206)	1,87 ± 0,80 (188)	-7,710[b] (<,001*)
9	SP played their part well	2,50 ± 0,78 (210)	1,96 ± 0,62 (190)	-6,619[b] (<,001*)
1	SP seemed genuine	2,45 ± 0,75 (210)	1,86 ± 0,65 (189)	-6,921[b] (<,001*)
11	SP knew their part well	2,45 ± 0,77 (208)	1,95 ± 0,69 (190)	-5,762[b] (<,001*)
8	SP's answers were natural	2,39 ± 0,80 (210)	1,92 ± 0,68 (190)	-5,627[b] (<,001*)
14	SP provided coherent clinical information	2,38 ± 0,74 (208)	2,27 ± 0,66 (186)	-1,837[b] (0,066)
12	SP reacted naturally during the simulation	2,37 ± 0,76 (210)	1,86 ± 0,74 (190)	-5,770[b] (<,001*)
7	SP's appearance seemed the part	2,36 ± 0,78 (207)	1,38 ± 0,97 (185)	-8,334[b] (<,001*)
2	SP could be a real patient	2,29 ± 0,81 (210)	1,60 ± 0,80 (187)	-7,246[b] (<,001*)
16	The usage of SP in simulation improved my knowledge in clinical communication	2,25 ± 0,77 (208)	2,26 ± 0,72 (189)	-0,183[c] (0,855)
15	SP training prepared me for contact with real patients	2,23 ± 0,88 (207)	2,14 ± 0,78 (188)	-1,838[b] (0,066)
13	SP adjusted their part naturally to the student's level	2,11 ± 0,88 (207)	1,96 ± 0,67 (187)	-1,461[b] (0,144)
4	SP seemed to withhold information for no reason	1,94 ± 0,76 (209)	2,04 ± 0,68 (188)	-1,717[c] (0,086)
10	SP acted excessively	1,91 ± 0,82 (208)	1,88 ± 0,68 (188)	-0,026[b] (0,980)
17	Discussion with SP at the end of the simulation helped me improve	1,91 ± 1,05 (126)	2,55 ± 0,61 (204)	-5,557[c] (<,001*)
6	SP challenged the student	1,73 ± 0,84 (207)	1,60 ± 0,80 (188)	-2,324b (0,02*)
3	SP was clearly playing a part	1,25 ± 0,82 (207)	0,91 ± 0,73 (189)	-5,228[b] (<,001*)
	Mean score	2,13 ± 0,43 (210)	1,90 ± 0,41 (208)	-6,914[b] (<,001*)

a. Paired Wilcoxon Signed-Rank test; b. based on positive ranks; c. based on negative ranks; * p-value < 0,05.

Table 5. Students' theatre attendance habits.

Variable	n	%
Attended/watched at least a theatre show in the last year	212	100%
Yes	54	25,5%
No	158	74,5%
Number of theatre shows attended / watched	52	100%
1	20	38,5%
2	13	25,0%
3	4	7,7%
4	6	11,5%
5	5	9,6%
6 or more	4	7,7%
Type of theatre show attended / watched	53	100%
In person	52	98,1%
Live	5	9,4%
Recorded	6	11,3%
Quantification of participants' theatre consumption medium	47	100%
1	29	61,7%
2	13	27,7%
3	2	4,3%
4 or more	3	6,4%

Table 6. Student sociodemographic and academic characteristics by theatre attendance habits.

Variable	TA[a] mean ± SD	NTA[b] mean ± SD	Z[c] (p-value)
Age	20,24 ± 3,02	20,05 ± 2,51	-1,096 (0,273)
	n (%)	**n (%)**	
Gender	54 (100%)	158 (100%)	
Female	46 (85,2%)	113 (71,5%)	-1,997 (0,046*)
Male	8 (14,8%)	45 (28,5%)	
Student year	54 (100%)	158 (100%)	
2nd year	52 (96,3%)	154 (97,5%)	
3rd year	1 (1,9%)	2 (1,3%)	-0,447 (0,655)
4th year	-	1 (0,6%)	
5th year	1 (1,9%)	1 (0,6%)	
6th year	-	1 (0,6%)	
Curricular Units with SP contact	54 (100%)	157 (100%)	
Medical psychology 1	51 (94,4%)	155 (98,7%)	-1,780 (0,075)
Medical psychology 2	36 (66,7%)	109 (69,4%)	-0,376 (0,707)
Clinical communication 1	2 (3,7%)	1 (0,6%)	-1,638 (0,101)
Clinical communication 2	1 (1,9%)	1 (0,6%)	-0,793 (0,428)

a. Theatre attendance in the last 12 months; b. No theatre attendance in the last 12 months; c. Mann-Whitney U test; d. Actor SP; e. Student SP; * p-value < 0,05.

Table 7. SP techniques' effectiveness assessment by theatre attendance habits (range 0 to 3).

Variable	TA[a] mean ± SD	NTA[b] mean ± SD	Z[c] (p-value)
Effectiveness of SP in clinical communication skills teaching and training	3,30 ± 0,75	3,34 ± 0,76	-0,376 (0,707)
Effectiveness of SP in clinical communication skills assessment	3,21 ± 0,77	3,27 ± 0,76	-0,628 (0,530)
Usefulness of simulation interruption for feedback	1,51 ± 0,88	1,82 ± 1,02	-2,078 (0,038*)

* a. Theatre attendance in the last 12 months; b. No theatre attendance in the last 12 months; c. Mann-Whitney U test; * p-value < 0,05.

Table 8. Actor and student SP's dramatic performance assessment by theatre attendance habits (range 0 to 3).

#	Question		TA[a] mean ± SD	NTA[b] mean ± SD	Z[c] (p-value)
1	SP seemed genuine	A[d]	2,28 ± 0,94	2,51 ± 0,66	-1,177 (0,239)
		S[e]	1,98 ± 0,71	1,82 ± 0,63	-1,489 (0,136)
2	SP could be a real patient	A[d]	2,09 ± 0,94	2,36 ± 0,75	-1,766 (0,077)
		S[e]	1,57 ± 0,83	1,62 ± 0,79	-0,343 (0,732)
3	SP was clearly playing a part	A[d]	1,30 ± 0,82	1,23 ± 0,82	-0,468 (0,640)
		S[e]	1,06 ± 0,86	0,86 ± 0,67	-1,241 (0,214)
4	SP seemed to withhold information for no reason	A[d]	1,74 ± 0,83	2,01 ± 0,73	-2,146 (0,032*)
		S[e]	2,00 ± 0,67	2,05 ± 0,69	-0,504 (0,614)
5	SP kept his character for the duration of the simulation	A[d]	2,53 ± 0,87	2,71 ± 0,62	-1,130 (0,259)
		S[e]	1,90 ± 0,93	1,86 ± 0,75	-0,396 (0,692)
6	SP challenged the student	A[d]	1,64 ± 0,98	1,76 ± 0,78	-0,728 (0,467)
		S[e]	1,58 ± 0,81	1,60 ± 0,80	-0,253 (0,800)
7	SP's appearance seemed the part	A[d]	2,19 ± 0,96	2,42 ± 0,7	-1,237 (0,216)
		S[e]	1,52 ± 1,05	1,33 ± 0,93	-0,973 (0,331)
8	SP's answers were natural	A[d]	2,24 ± 0,93	2,44 ± 0,75	-1,210 (0,226)
		S[e]	2,06 ± 0,65	1,86 ± 0,68	-1,659 (0,097)
9	SP played their part well	A[d]	2,33 ± 0,89	2,55 ± 0,73	-1,686 (0,092)
		S[e]	2,00 ± 0,60	1,95 ± 0,63	-0,347 (0,729)
10	SP acted excessively	A[d]	1,81 ± 0,85	1,95 ± 0,82	-0,975 (0,330)
		S[e]	1,88 ± 0,74	1,88 ± 0,67	-0,149 (0,881)
11	SP knew their part well	A[d]	2,31 ± 0,91	2,50 ± 0,72	-1,183 (0,237)
		S[e]	2,06 ± 0,71	1,91 ± 0,68	-1,196 (0,232)
12	SP reacted naturally during the simulation	A[d]	2,26 ± 0,81	2,41 ± 0,74	-1,311 (0,190)
		S[e]	2,04 ± 0,66	1,80 ± 0,76	-1,845 (0,065)
13	SP adjusted their part naturally to the student's level	A[d]	1,93 ± 1,04	2,17 ± 0,80	-1,218 (0,223)
		S[e]	2,04 ± 0,63	1,93 ± 0,68	-0,851 (0,395)
14	SP provided coherent clinical information	A[d]	2,11 ± 0,86	2,48 ± 0,67	-2,986 (0,003*)
		S[e]	2,40 ± 0,61	2,22 ± 0,67	-1,580 (0,114)
15	SP training prepared me for contact with real patients	A[d]	2,06 ± 0,95	2,29 ± 0,85	-1,657 (0,098)
		S[e]	2,18 ± 0,74	2,12 ± 0,79	-0,310 (0,757)
16	The usage of SP in simulation improved my knowledge in clinical communication	A[d]	2,11 ± 0,82	2,30 ± 0,75	-1,569 (0,117)
		S[e]	2,32 ± 0,68	2,24 ± 0,74	-0,577 (0,564)
17	Discussion with SP at the end of the simulation helped me improve	A[d]	1,81 ± 1,17	1,96 ± 1,01	-0,496 (0,62)
		S[e]	2,68 ± 0,47	2,51 ± 0,64	-1,546 (0,122)
	Mean score	A[d]	2,01 ± 0,56	2,17 ± 0,37	-1,384 (0,166)
		S[e]	1,95 ± 0,39	1,89 ± 0,42	-0,714 (0,475)

a. Theatre attendance in the last 12 months; b. No theatre attendance in the last 12 months; c. Mann-Whitney U test; d. Actor SP; e. Student SP; * p-value < 0,05.

Table 9. Assessment of SP simulations through digital communication means in response to the COVID-19 pandemic (range 0 to 3).

Question	n	Mean ± SD
More feasible and economic simulations	91	1,64 ± 0,94
More convincing simulations	92	1,37 ± 0,99
More effective simulations	92	1,41 ± 0,99

Table 10. Assessment of SP simulations through digital communication means in response to the COVID-19 pandemic by theatre attendance habits (range 0 to 3).

Variable	TA[a] mean ± SD	NTA[b] mean ± SD	Z[c] (p-value)
More feasible and economic simulations	1,44 ± 1,01	1,72 ± 0,90	-1,353 (0,176)
More convincing simulations	1,22 ± 1,09	1,43 ± 0,95	-0,948 (0,343)
More effective simulations	1,26 ± 1,06	1,48 ± 0,95	-0,992 (0,321)

a. Theatre attendance in the last 12 months; b. No theatre attendance in the last 12 months; c. Mann-Whitney U test; * p-value < 0,05.

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Annexes

Annex I

Faculty of Medicine Ethics Committee study protocol rapport

PARECER

49/CEFMUP/2022

Comissão de Ética da Faculdade de Medicina da Universidade do Porto

Parecer/Rapport: 49/CEFMUP/2022

Título do projeto/ Project title: *To be or not to be: simulated patients' performance and medical students' clinical communication training*.

Investigador/ Researcher: Vasco José Pinto de Almeida

Parecer/ Rapport:

☒ Favorável/Accepted

☐ Rejeitado/Declined

☐ Outro

Salienta-se de que a recolha de dados apenas deverá ter início após a emissão do parecer da Comissão de Ética.

Relator: Mónica Correia

Deliberado em reunião plenária da Comissão de Ética de 28 de abril de 2022 por unanimidade dos membros presentes.

Solicita-se o favor de após a conclusão do projeto enviar o relatório final com as conclusões do estudo, nos termos do Art.3º n.º 3 alínea f) do Decreto-Lei n.º 80/2018 de 15 de Outubro.

Porto, 28 de abril de 2022

O Secretariado Executivo da Comissão de Ética
Profª Doutora Francisca Rego

O Presidente da Comissão de Ética
Prof Doutor Rui Nunes

Alameda Professor Hernâni Monteiro, 4200-319, Porto
Email: comissaoetica@med.up.pt
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Annex II

Questionnaire model

TO BE OR NOT TO BE: SIMULATED PATIENTS' DRAMATIC PERFORMANCE AND MEDICAL STUDENTS' CLINICAL COMMUNICATION TRAINING

A presente investigação insere-se numa dissertação no âmbito do Mestrado em Comunicação Clínica da Faculdade de Medicina da Universidade do Porto. Este estudo tem como objetivo avaliar a perceção da influência da performance do doente simulado na aquisição de competências em Comunicação Clínica pelos estudantes da Faculdade de Medicina da Universidade do Porto através da aplicação de um questionário.

Lembramos que o questionário é confidencial, anónimo e o seu preenchimento é voluntário.

NÃO PREENCHER **ID** ☐☐☐☐

Data de aplicação ☐☐/☐☐/☐☐☐☐

1. **Idade** ☐☐ anos

2. **Em que ano ingressou no Mestrado Integrado de Medicina?** ☐☐☐☐

3. **Que ano letivo do Mestrado Integrado de Medicina frequenta presentemente?**

☐0 2.º ano ☐1 3.º ano ☐2 4.º ano ☐3 5.º ano ☐4 6.º ano

☐5 Nenhuma das respostas anteriores. Por favor, especificar: _____

4. **Qual a sua identidade de género?**

☐0 Feminino ☐1 Masculino ☐2 Não-binário

☐3 Prefiro descrever o meu género: _____

5. **Assistiu a algum espetáculo teatral nos últimos 12 meses?**

☐0 Sim ☐1 Não (se selecionar esta hipótese, por favor, passe para a **pergunta 9**)

6. **A quantos espetáculos teatrais assistiu nos últimos 12 meses?** ☐☐

7. **A que tipo de espetáculos teatrais assistiu nos últimos 12 meses?** *(pode selecionar várias hipóteses)*

☐0 Presencial ao vivo ☐1 Online ao vivo ☐2 Vídeo/TV gravado

8. **Onde assistiu a esses espetáculos?** *(ex. Teatro Nacional São João, Teatro Municipal do Porto, etc.)*

(Vire a página, por favor)

No ensino da Comunicação Clínica a simulação (*roleplay*) ocorre com doentes simulados (DS) representados por pares/colegas/outros estudantes, sem formação em teatro, ou com atores treinados para o efeito.

9. Em que Unidade(s) Curricular(es) teve contacto com simulação e DS representados por pares/colegas/outros estudantes, sem formação em teatro, ou com atores treinados para o efeito? *(pode selecionar várias hipóteses)*

☐0 Psicologia Médica I (2.º ano, 1.º semestre)

☐1 Psicologia Médica II (2.º ano, 2.º semestre)

☐2 Comunicação Clínica I - Lidar com emoções e comunicar más notícias (5.º ano, opcional)

☐3 Comunicação Clínica II - Entrevista Motivacional (5.º ano, opcional)

☐4 Outra. Por favor, especificar: _____

10. Para cada uma das afirmações seguintes, por favor selecione a opção que mais se adequa à <u>sua experiência com doentes simulados (DS) e simulação</u>:

	Discordo totalmente	Discordo	Concordo	Concordo totalmente	Não aplicável
10.1.O DS ator parecia genuíno.	☐0	☐1	☐2	☐3	☐4
10.2.O DS estudante parecia genuíno.	☐0	☐1	☐2	☐3	☐4
10.3.O DS ator poderia ser um doente real.	☐0	☐1	☐2	☐3	☐4
10.4.O DS estudante poderia ser um doente real.	☐0	☐1	☐2	☐3	☐4
10.5.O DS ator estava claramente a desempenhar um papel.	☐0	☐1	☐2	☐3	☐4
10.6.O DS estudante estava claramente a desempenhar um papel.	☐0	☐1	☐2	☐3	☐4
10.7.O DS ator aparentava estar a ocultar informação sem necessidade.	☐0	☐1	☐2	☐3	☐4
10.8.O DS estudante aparentava estar a ocultar informação sem necessidade.	☐0	☐1	☐2	☐3	☐4
10.9.O DS ator manteve-se na personagem durante toda a simulação.	☐0	☐1	☐2	☐3	☐4
10.10.O DS estudante manteve-se na personagem durante toda a simulação.	☐0	☐1	☐2	☐3	☐4
10.11.O DS ator desafiava/ testava o aluno.	☐0	☐1	☐2	☐3	☐4
10.12.O DS estudante desafiava/ testava o aluno.	☐0	☐1	☐2	☐3	☐4
10.13.A aparência do DS ator era concordante com o seu papel.	☐0	☐1	☐2	☐3	☐4
10.14.A aparência do DS estudante era concordante com o seu papel.	☐0	☐1	☐2	☐3	☐4

(Passe para a página seguinte, por favor)

	Discordo totalmente	Discordo	Concordo	Concordo totalmente	Não aplicável
10.15.O DS ator respondia de forma natural às questões.	☐0	☐1	☐2	☐3	☐4
10.16.O DS estudante respondia de forma natural às questões.	☐0	☐1	☐2	☐3	☐4
10.17.O DS ator interpretava bem o seu papel.	☐0	☐1	☐2	☐3	☐4
10.18.O DS estudante interpretava bem o seu papel.	☐0	☐1	☐2	☐3	☐4
10.19.O DS ator atuava de forma excessiva.	☐0	☐1	☐2	☐3	☐4
10.20.O DS estudante atuava de forma excessiva.	☐0	☐1	☐2	☐3	☐4
10.21.O DS ator conhecia bem o seu papel.	☐0	☐1	☐2	☐3	☐4
10.22.O DS estudante conhecia bem o seu papel.	☐0	☐1	☐2	☐3	☐4
10.23.O DS simulado ator reagia de forma natural durante a simulação.	☐0	☐1	☐2	☐3	☐4
10.24.O DS simulado estudante reagia de forma natural durante a simulação.	☐0	☐1	☐2	☐3	☐4
10.25.O DS ator ajustava o papel ao nível do aluno com naturalidade.	☐0	☐1	☐2	☐3	☐4
10.26.O DS estudante ajustava o papel ao nível do aluno com naturalidade.	☐0	☐1	☐2	☐3	☐4
10.27.O DS ator prestava informação coerente do ponto de vista clínico.	☐0	☐1	☐2	☐3	☐4
10.28.O DS estudante prestava informação coerente do ponto de vista clínico.	☐0	☐1	☐2	☐3	☐4
10.29.O treino com o DS ator preparou-me para o contacto com doentes reais.	☐0	☐1	☐2	☐3	☐4
10.30.O treino com o DS estudante preparou-me para o contacto com doentes reais.	☐0	☐1	☐2	☐3	☐4
10.31.A simulação com o DS ator melhorou o meu nível de conhecimento em comunicação clínica.	☐0	☐1	☐2	☐3	☐4
10.32.A simulação com o DS estudante melhorou o meu nível de conhecimento em comunicação clínica.	☐0	☐1	☐2	☐3	☐4
10.33.A discussão com os pares no final da simulação ajudou-me a melhorar aspetos menos positivos.	☐0	☐1	☐2	☐3	☐4
10.34.A discussão com o(s) DS ator(es) no final da simulação ajudou-me a melhorar aspetos menos positivos.	☐0	☐1	☐2	☐3	☐4
10.35.A interrupção da simulação para dar feedback é vantajosa.	☐0	☐1	☐2	☐3	☐4

(Vire a página, por favor)

11. Quais os conteúdos em Comunicação Clínica em que, na sua experiência, foi mais útil a utilização de DS representados por pares/colegas/outros estudantes, sem formação em teatro? *(pode selecionar várias hipóteses)*

☐0 Modelo de Entrevista Clínica

☐1 Lidar com emoções

☐2 Dar más notícias

☐3 Entrevista motivacional

12. Quais os conteúdos em Comunicação Clínica em que, na sua experiência, foi mais útil a utilização de DS representados por atores treinados para o efeito? *(pode selecionar várias hipóteses)*

☐0 Modelo de Entrevista Clínica

☐1 Lidar com emoções

☐2 Dar más notícias

☐3 Entrevista motivacional

13. Como classifica no geral o recurso a DS na avaliação de competências em Comunicação Clínica, na sua experiência?

☐0 Nada eficaz

☐1 Pouco eficaz

☐2 Mais ou menos eficaz

☐3 Razoavelmente eficaz

☐4 Muito eficaz

14. Como classifica no geral, o recurso a DS no ensino e treino de competências em Comunicação Clínica, na sua experiência?

☐0 Nada eficaz

☐1 Pouco eficaz

☐2 Mais ou menos eficaz

☐3 Razoavelmente eficaz

☐4 Muito eficaz

15. Para cada uma das perguntas seguintes, por favor selecione a opção que mais se aplica à sua experiência, no que diz respeito ao treino e a avaliação em Comunicação Clínica com recurso a meios digitais (on-line), no âmbito da pandemia de COVID-19.

	Discordo totalmente	Discordo	Concordo	Concordo totalmente	Não aplicável
15.1. Tornou a simulação com os vários tipos de DS mais exequível e económica.	☐0	☐1	☐2	☐3	☐4
15.2. Facilitou a simulação com os vários tipos de DS, tornando-a mais credível.	☐0	☐1	☐2	☐3	☐4
15.3. Tornou a simulação com os vários tipos de DS mais eficaz.	☐0	☐1	☐2	☐3	☐4

(Passe para a página seguinte, por favor)

16. O que sente que, com base na sua experiência prática de simulação em Comunicação Clínica, poderia melhorar a aquisição de competências nesta área?

Agradecemos a sua colaboração!

FACULDADE DE **MEDICINA**