

Semblance of a physician: medical students' experiences during Type 2 Diabetes Mellitus clinic simulation

Com o semblante de médico: experiências de estudantes de medicina durante a simulação clínica em Diabetes tipo 2 (resumo: p. 16)

Con el semblante de médico: experiencias de estudiantes de medicina durante la simulación clínica en Diabetes tipo 2 (resumen: p. 16)

Gabriel Lavorato Neto^(a)

<lavorato.neto@gmail.com> 

Egberto Ribeiro Turato^(b)

<egberto@unicamp.br> 

Maria Cândida Ribeiro Parisi^(c)

<candidap@unicamp.br> 

^(a) Student in the Postgraduate Program in Internal Medicine - Health Education (PhD), School of Medical Sciences (SMS), State University of Campinas (Unicamp). Rua Vital Brasil, 80, Cidade Universitária, Campinas, SP, Brasil. 13083-888.

^(b) Department of Psychiatry and Lab of Clinical-Qualitative Research, SMS, Unicamp. Campinas, SP, Brasil.

^(c) Internal Medicine Department, SMS, Unicamp. Campinas, SP, Brasil.

This qualitative research aimed to understand the experiences of a fourth-year medical class during two clinical simulation scenarios of type 2 diabetes management in Primary Care. Ten simulated students were interviewed. The results describe the symbolic conception of diabetes and its treatment as anguish, damage, condemnation and an unpleasant sentence that affects the appropriation and performance of the medical role by students. Considering Medical Psychology, we suggest that such subjective factors should be addressed in teaching-learning in addition to commonly cognitive aspects mentioned in the medical education literature in order for students to develop the work profile to cope with diabetes in Primary Care. Clinical simulation facilitates the subjective approach through its group support component to promote reflection, insights and self-awareness.

Keywords: Simulation training. Type 2 Diabetes Mellitus. Education, medical, undergraduate. Physician's role. Psychology, medical.



Introduction

Type 2 Diabetes Mellitus (T2DM) is one of the most prevalent chronic health conditions^{1,2}. Medical Schools actively participate in coping with T2DM, improving Teaching-Learning strategies, from undergraduate studies and students' clinical competences to a process that reflects two trends: using mixed active-traditional learning and building up a profile of a physician who meets the needs of Primary Health Care (PHC). Curriculum content is based on the evidence for prevention, care and treatment. The excellence of curriculum delivery derives from the technical resources and educational theories adopted – some of them based on humanities disciplines^{1,3-6}.

To enable physicians to work in PHC in dealing with T2DM, the medical literature lists at least three strands of target groups of competencies during undergraduate studies, which are the following: the pathophysiological to prevent and manage hyperglycemia and its risks; the psychosocial to deal with barriers that affect the therapeutic plan (TP); and leadership that structures coping services in PHC^{1,3,4,6-9}.

The key to clinical-medical practice in T2DM is to establish a Doctor-Patient Relationship (therapeutic alliance) that facilitates the installation and continuous bilateral review of an adequate TP. The biopsychosocial multiplicity involved in this makes it complex, requiring sharpening professionals' different skills^{5,9}.

Clinical Simulation is founded on Performance-Based Education and involves applying teaching scenarios to small groups in which students practice clinical experience. This strategy is the combination of theater (humanities applied to clinical teaching)^{10,11} with decision-making training in moments of crisis, followed by collective reflection mediated by tutors as an instrument of teaching-learning and insights for students^{12,13}.

This strategy allows for a reflection on the breadth of biopsychosocial factors in the T2DM clinic. Part of the framework of psychosocial factors that emerged during the educational intervention lies in Medical Psychology. Balint's¹⁴ framework describes aspects similar to the mentioned curricular content: a concern with the psychosocial aspects that involve and affect the therapeutic alliance in primary care, and which can be mitigated through group reflection¹⁴. Therefore, it can help to understand the phenomena of the students' educational process in learning about the clinical management of T2DM during simulation sessions.

It is a concern that curricula and educational strategies used at the undergraduate level are grounded in evidence¹⁵⁻¹⁸. This qualitative study was developed with students who participated in two clinical simulation scenarios to manage people with T2DM in PHC. The study aimed to understand the symbolic issues attributed to these students' experiences during the educational simulation sessions. The findings, discussed with the clinical literature and Balint's framework, contribute to strengthening the theoretical body of evidence regarding the reflective mechanism practiced in T2DM clinical simulation education. Therefore, the findings can assist educators in addressing aspects that may not be emphasized in medical studies.



Methodology

Study design and ethics

This is a Clinical-Qualitative investigation: a refined design of traditional qualitative methods to understand the symbolic meanings of subjects in health settings. It is supported by three attitudes of the researcher: existentialist, welcoming anguish; psychoanalytic, understanding symbolic and unconscious meanings; and clinical, which pays attention to the phenomena of the health-illness binomial. Having an exploratory character, the design proposes to contribute a technical-theoretical contribution that can be applied to the field based on the results obtained^{19,20}.

The study was approved by the Research Ethics Committee and the Medical Education Research Center at the University where it was developed. Students who agreed to participate provided free and informed consent.

Theoretical reference

Balint's medical psychology focused on researching the "psychological implications of General Medicine". The author considers the doctor as the main prescription in treatments and delves into the therapeutic relationship in the triad: "the doctor, his patient and the illness"¹⁴. Balint's framework on feedback group reflection, self-perception of the clinic and insights aimed at improving care, offers a propitious contribution to the discussion of our findings in contemporary medical education concerns^{18,21}.

Teaching-learning intervention and research context

A medical school in the state of São Paulo, Brazil, offers a course entitled "Comprehensive Health Care" to fourth-year students. The course covers practice for the most prevalent medical conditions in outpatient settings. As part of the curriculum, students take part in a clinical simulation module focused on people with T2DM. This module is designed as an active teaching practice that includes collective reflection on performance and integrates technical and humanistic aspects. The aim is to shape the students' profile as physicians who deal with T2DM in PHC^{3,6,10-13,22}.

The study was undertaken with a class of 115 students who participated in the module between January and December 2019. The course coordinator organized the class into ten workgroups, each comprising ten to twelve students. These workgroups partook in the module that covered two critical scenarios in the outpatient management of T2DM.

The scenarios were constructed by a multidisciplinary team of researchers specializing in active education to T2DM management. Led by a diabetologist (3rd author of this study), who is also an assistant professor in the Medical Clinic outpatient unit of the proposing university, the team conducted a brainstorming session to identify technical and existential topics related to the care of individuals with T2DM. After agreeing upon



the points of interest and their elements, the team established the objectives that guided the composition of the scripts. A complementary review was conducted to adjust clinical parameters in cases. The patients in each scenario were portrayed by the same actresses.

The first scenario aimed at diagnosing and installing the caring plan, screening diabetes risks and establishing therapeutic alliance. The second scenario aimed to increase insulinization in the person's TP to adjust the glycemic level. The complete scenarios can be found in the Supplemental Material^(d).

Each workgroup was assigned one scenario per semester once. There was appropriate physical infrastructure (mirrored room, audio and video equipment) scenario application. A pre-briefing instructional room would initiate the activities. The group's first task was to elect, by lot, consensus or volunteering, a single student to simulate the doctor in the scenario. The elected student would then proceed to the simulated clinic to receive the patient in a simulated consultation lasting up to an hour, while the rest of the group observed.

After the consultation, the workgroup had a two-hour debriefing session with simulators that included two assistant doctors of Clinical Medicine, a nurse, the simulant actress, and a psychoanalyst. The simulated student presented the case and discussed their experience with the scenario while the group worked with the tutors to develop solutions to problems. The tutors made sure that important topics were covered and aligned with the learning objectives. At the end of the session, everyone provided feedback, including the tutors.

^(d) Available at data repository link <https://assets.researchsquare.com/files/rs-1976330/v1/2c1fdaec880f66c53cbf8b08.docx>

Data, sample collection, coding, sample closure, saturation and cohort

Data were collected through a single open-end question interview with a semi-structured script. All the twenty simulated students were intentionally invited to take part in the research due to their different experiences in two sessions: the simulated one, and that of part of the hidden audience in the other session. Recruitment was by personal invitation in the scenario and started near the middle of the second semester of the module. The interviews were always conveniently scheduled and took place at the end of the elective year.

Ten students (50%) agreed to participate. Chart 1 presents the subjects in the order of the interviews conducted (the nicknames were chosen by the subjects), and shows the scenario in which the subject acted, as the indication for what they initially chose to narrate to the interviewer²⁰.

In clinical-qualitative design, the researcher is the main instrument for data collection and analysis¹⁹. The interviews were conducted and analyzed by the first author of this work. Prior to the interview, and establishing rapport, the interviewee received information about the research, and instructions to speak freely and without fear of any nature or prejudice. The trigger question was: "You participated in two simulation experiences, one that you watched and the other that you acted as a doctor. Could you please choose one of the cases to describe and tell us about your experience?"

**Frame 1.** Subjects and Interviews.

Nickname	Age	Gender	Length of interview	Scenario that was simulated	Narrative began by the case
Kari	30	F	0:21:58	2nd	2nd
Barth	23	M	0:27:55	2nd	2nd
Taiga	31	F	0:16:25	2nd	2nd
Rosa	23	F	0:19:52	2nd	CHC*
Girassol	22	F	0:19:28	1st	1st
Lampa	24	M	0:18:58	1st	1st
Édipo	21	M	0:16:03	1st	1st
Leia	23	F	0:19:29	2nd	2nd
Beriba	56	M	0:20:03	1st	1st
Bomba	24	M	0:14:30	1st	1st

*CHC – The subject started by telling an experience of one of his appointments during the internship at the Community Health Center (CHC)

While listening to the subjects, emerging points were dealt with in more detail by the interviewer²⁰. When the subjects' narrative about the chosen case was exhausted, the interviewer added: "and about the other case, what would you say?"

All interviews were recorded in MP3 on an electronic device totalizing a time of 3:14:41h. They were later transcribed verbatim by the researcher and analyzed to compose the data *corpus*.

Data analysis was driven by Clinical-Qualitative Content Analysis. The aim was to capture both manifest and symbolic meanings in the data. The steps of the analysis are outlined by Faria-Schützer et al.²³.

Preliminary results were validated through presentations at scientific meetings with peers of research groups, national and international scientific events.

We analyzed interviews from all subjects in the study. Despite this, we found saturation of the categories from the excerpts of the seventh interview: since reading this interview, the thematic units were repeated and did not promote new categories, but consolidated the findings of interviews #1-6. Despite the intervention taking two sessions per group, one in each semester, the results represent a cohort in the subjects' experience who referred to the activity at the time of their narrative to the interviewer¹⁹.

Results

To answer the research question, we present two categories: "Concerning the symbolic meanings of T2DM and its management", and "regarding the role of the performer towards the person with T2DM, their colleagues and the T2DM clinic". The synoptic view of the categories is presented in Diagram 1. The symbolic significance of the first category in relation to T2DM and its treatment has an impact on the interpretation of the medical role and its performance by students. This ordering of the categories is intended to represent this emphasis and guide the interpretive exploration in the discussion.

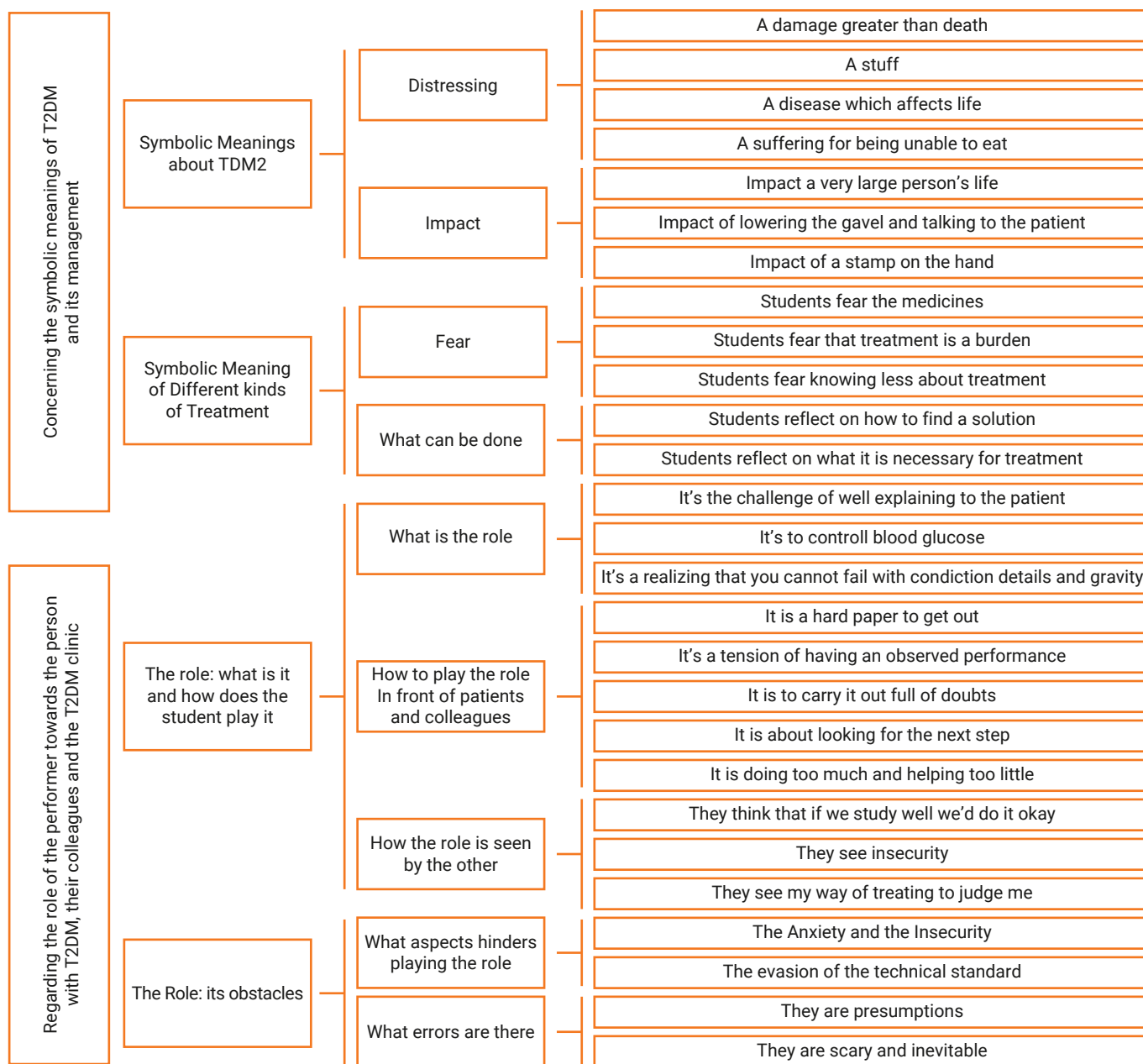


Diagram 1. Synoptic view of categories and subcategories.

Discussion

We investigated the subjects' experience in the management of T2DM cases. In this context, symbolic meanings concerning T2DM and clinical management emerged from the subjects; and the description of the medical role assumed in the scenario and how it was seen by the patient-actor and their group colleagues.

To understand our findings, we resumed the efforts of medical graduates to the T2DM clinic in PHC. They focus on developing in students the skills, knowledge and attitudes for the prevention, monitoring and balance of glycemic levels and reducing of hyperglycemia risks. This approach aims to reduce the impact of T2DM on the health and burden on health services and systems arising from the numerical increase in cases and their chronicity^{8,9,24-26}.

The clinical TP approach includes prescribing oral medications and insulin, offering advice on healthier lifestyle habits. This approach focuses on therapeutic alliance as an element of joint continuous construction and TP review grounded on the motivational education of people with diabetes to their engagement in self-caring and the clinic visits schedule where barriers to caring may be mitigated and risk complications are screened and reduced^{1,5,9,24,25,27}.

When comparing educational trends and clinical guidelines^{1,6,27} with our findings, we found distinct contrasts that should receive necessary educational attention, especially in educational strategies based on reflection. Starting with the analysis of some symbolic meanings attributed to T2DM and its treatment, and bearing in mind how these meanings unfold in the way students perceive the medical role, we highlight the students' difficulty in naming T2DM. They describe it as “damage greater than death”, “stuff you wouldn't want to have” or “something that kills you” (Rosa), and that “affects several parts of the body” (Bomba). Regarding the diagnosis, it has a “huge impact on the person's life” (Girassol). The meaning of “impacted” is enhanced by the expressions “bring the hammer down” (Lampa) or like a “stamp... as if you were a judge giving a sentence” (Édipo). “Hammer” and “stamp” are instruments that operate by impact.

Referring to T2DM and its treatment as an “impact” represents the anguish students feel about this condition and their coping strategies. These conceptions can intervene in the outcome of attitudes towards establishing the therapeutic alliance that depends on communication, and therefore, on the success in the construction and conduction of the TP, dialogic with the effort of the educational examples available^{9,22,26}.

The “hammer” (the subject's metaphor about the conclusion of the diagnosis) is the instrument of a judge's authority. In line with the expression adopted by another subject, the “stamp” (to communicate the diagnosis to the affected person), a medical instrument to authenticate prescriptions, aligns diagnosis and treatment at the level of a sentence of conviction imposed on the affected person – communication about the diagnosis and therapy appear negatively. The doctor's explanatory words can be a sentence and are “powerful words” to penalize. Words and treatments can be poison to the affected person: “it is a medicine and a poison” (Rosa); “words are powerful... the patients will remember it for the rest of their lives” (Rosa).

This power can make the student uncomfortable, and requires responsibility: “a great power, but, at the same time, it brings a great responsibility” (Édipo). Here the subject shows a moral identification. Words, prescriptions and explanations are a moral challenge: it is “very bad for the patient to leave his appointment, receiving a diagnosis and not knowing exactly what he has [...] you have to explain it to the patient” (Kari); “I need to know how to explain things better” (Taiga). It is difficult to level this responsibility: “would just a change in lifestyle, diet or physical activity be enough, or should I use... Metformin?” (Édipo). The symbolic question permeates the ideal of the TP's set of behaviors, counterbalanced by the perception of competence to prescribe this set, which affects the perception of the medical role.

Concerning the treatment and its possibilities, the subjects demonstrate questions that deal with the theme of “to be or not to be” efficient - conducive to the theatrical educational platform. That is, knowing or not knowing the set of therapeutic procedures,



which has a symbolic relationship with the sufficiency of medical performance: “I knew I needed to prescribe insulin..., but... should I keep oral medications?” (Leia); the “what I told her was enough to convince her that it was ok to use insulin, even though it was a bit annoying” (Leia); “a subject I knew even less about” (Girassol).

The lack of student confidence is discussed in the literature in the following contexts: studies that analyze the phenomenon articulated to levels of knowledge³; or with the intention of developing it through strategies that anticipate clinical practice (immersion teaching) in the pre-clinical stages of the course²⁸; or through digital simulation, which allows beginners to deal with the limits of their skills and knowledge²⁹. Despite the need for such objective questions, there is a gap in the literature: the consideration of the set of symbolic and subjective questions of students that affect the lack of confidence in the management of T2DM. As an example of this, we show here these symbolic aspects of how T2DM and its management can be conceived as anguish, damage, a condemning and unpleasant sentence to be communicated.

This responsibility of dealing with the management of a chronic health condition that causes “damage greater than death” (Rosa) touches the idealization that students have about their role in management. Part of this idealization captures moral identification – a “great power ... brings great responsibility” (Édipo). This is a latent concern that students have about the perception that patients form about them as doctors, in addition to self-judgment about performance.

The predominantly negative impressions used by students are antagonistic to the established guidelines^{1,2,6,27}. They aim at treatment encouraging a healthy physical and mental state, recommending habits that improve the quality of life of people with T2DM, as well as medication to keep glycemic balance^{27,30,31}.

Students justify the negative view with ideas: “I am someone who really likes sweets. I really like eating. So, I wonder, if, by chance, I were to have an illness like this, how much it would affect my life” (Bomba) – The predominant view is the restrictive one due to the recommendations of not consuming glucose and ultra-processed foods, needed in the caring of the T2DM condition. These ideas are imposed in the name of idealized pleasurable satisfaction and overwrite the conception of health gains in the pleasure of healthy – consuming foods with better nutritional value. Treating the condition implies eating quality food and practicing physical activity to provide physical and mental gains^{30,31}. The point is to reflect on the educational problem to develop student clinical skills in such a way they reach reasoning to help in promoting new ways of health improvement and quality of life through healthy practices for people with T2DM^{5,9,26}.

Medical education is concerned with this field^{5,28}. However, attention should be paid to the reasons that justify the phenomenon that positive learning about healthy things does not change students' convictions, fantasies and identifications with the negative-restrictive content related to T2DM. Diagram 2 summarizes the contrast between the symbolic conceptions (frequent difficulties in approaching this clinical situation among students) and the recommendations for the treatment of the person with T2DM. Future studies should address this phenomenon.

Regarding the performance of the medical role in front of patients and colleagues, the students reported experiencing inhibition when being observed. Having doubts in front of someone causes a certain paralysis of actions or memory, resulting in some failure, even when there is care in the clinical approach. For example, trying to remember as much conceptual information as possible to track the effects of hyperglycemia on target organs does not prevent the lapse in taking the medical history – “it was my fault” (Kari). The context is not having identified that the patient’s mother, in the plot, had died from consequences of T2DM.

Failure is frightening for students: “if we can treat it, what did we get wrong for the person to get to this point?” (Rosa); “what scared me was talking, inducing the person...” (Beriba). This causes indignation and highlights the idealized clinical role that, at this point in training, is opposed to the perception of performance in the responsibility of clinical management of a chronic health condition. An ideal that, in the face of patients or the observation of colleagues, is difficult to achieve. It is a hard process to get out of the role: “It took me a while to get out... I was afraid of getting out of there, of being humiliated... I didn’t know how to deal with it...” (Barth).

	T2DM	Therapeutics	Consequences
Guidelines	<ul style="list-style-type: none"> • Chronic non communicable disease • Risks can be reduced 	<ul style="list-style-type: none"> • Available: Medication and Adopting a Healthy Lifestyle • Accessible: in Primary Care • Effective to maintain glycemic level control 	<ul style="list-style-type: none"> • Physical health • Mental health • Quality of life gain
Students	<ul style="list-style-type: none"> • A Stuff • A thing • An impact • An affliction 	<ul style="list-style-type: none"> • How to promote it precisely? • Restrictions • It is a condemnation 	<ul style="list-style-type: none"> • I don’t know how to help • Inhibition and anxiety • Failing in role as a physician

Diagram 2. Students’ Perceptions of Recommended Policies: Points of Attention and Educational Intervention^{1,2,6,27}.

A safety point for students, in the role they play in coping with the condition, is to keep blood glucose level and avoid the evolution of complications: “doing the best... and to avoid complications... that’s it!” (Kari). Another safety point is articulating a plan to adopt healthy habits: “tell her to join her family to go jogging” (Lampa). Regarding this role, it is aligned with the need to know how to better explain the condition to the affected person and consider in the clinical role the attention to the entire complex set of details that involves T2DM. These last two points are represented



with insecurity and concern: “I need to know how to explain it better” (Taiga); “I was kind of lost... Do I have to play this role [handbook and prescription available in the scenario]; Should I or shouldn't I play the role?... I was kind of...[lapse]” (Taiga). The final expression, “I was halfway through”, is symbolically pertinent to this conflicting point between the level of performance and the ideal necessary to face the condition. The student feels in the middle – between doing and not doing, “Do I have to play the role?” – Should I write and act thinking about the task, or “I shouldn't I?”.

The symbolic conceptions that we gathered about T2DM and its treatment, such as those referring to the role of the student-doctor performer in relation to his patient and classmates in the T2DM clinic, originate from the power of the educational intervention. It promotes reflection and insights in students about the level of their clinical competences through tutored group discussion about the performance of the simulated in the clinical case^{12,13,18}.

The symbolized subjective phenomena that we infer from listening to students in this process and that are condensed into the categories are: the anguish that the T2DM condition causes them; the ideas about negative aspects of the treatment that distance the positive appreciation of what is healthy; the difficulties of taking on a task, caused by environmental issues such as the pressure of observation; the insecurity in failing to develop therapeutic solutions with the consequent possibility of harming someone. Such phenomena cannot be driven only by cognitive contents or objective educational strategies. They need attention and development through reflection, and support in the formative process¹⁸. They are in the nature of subjective psychology.

We found in Balint's research¹⁴ a contribution that clarifies the nature of reflective group work, developing subjective content, and the deepening of the therapeutic alliance. This is the key point of the educational intervention, and its intention is in line with the trends present in the T2DM medical education literature. In Balint's language, the physician focusing on therapeutic alliance means prescribing himself to his patient, according to the current goals of Medical Education^{5,9,24}.

We have already pointed out the central importance of establishing therapeutic alliance in the T2DM clinic in which the physicians prescribe themselves as a TP facilitator. This bond will be made possible when the clinician is skilled and sensitive to the complex context that involves cultural, emotional and socioeconomic factors that are part of this clinic. For these reasons, the skills of how to consider such factors in management are educational targets addressed in the literature by Medical Education^{3,24}.

Balint called the physician's “apostolic function” the set of subjective difficulties that the physician faces when dealing with the psychocultural complicating factors of a clinical case. It is a consequence of the physicians' responses, full of therapeutic rage, to offers for healing opportunities that patients direct them to in a cyclical way, which becomes increasingly complex, but always postponing the real possibilities for this¹⁴. Our findings showed this type of response from the subjects from the simulation scenarios to which they were submitted. The answers reflect the effort with which the subjects sought to theatrically sustain a doctor's semblance to someone newly diagnosed with T2DM, or to someone who, due to the evolution of the T2DM condition, required



complementary insulinization. Based on the theatrical performance contemplated and discussed in a group, reflections emerge that deepen the real conditions of the students' clinical skills levels and raise insights that show how they subjectively involved themselves in the clinical role.

What was reflected in the theatrical semblance played by our subjects intertwines with the other categories described by Balint: the patient and the illness. As for the illness, the figure that imposes itself is the anguish caused by the unpleasant restrictive measures with which the subjects identified. The patient, on the other hand, is revealed as condemned to follow a therapy constructed by a doctor-student that is still technically insufficient. We can infer how much this loaded semblance corroborates the demands of the Apostolic Function's fury and can harm the therapeutic alliance¹⁴.

Balint warned that the ideal of therapeutic frenzy comes at the cost of discomfort with the consequent limitation of personal delivery to the clinic. He attributed part of this limitation to the training process when it does not promote conditions for physicians to assess the "set of established beliefs about how illnesses are acceptable or not; how much pain, suffering, fear and deprivation a patient must endure, and when he has the right to ask for help or relief; how much discomfort to you is allowed to the patient"¹⁴ (p. 10). It was with the intention of filling this gap that Balint promoted research seminars with groups of physicians aimed at reflecting on their cases¹⁴.

Currently, medical schools adopt active teaching strategies, such as simulation activity, which brings together educational elements that allow experience and reflection on a wide range of issues involving student performance^{11,13,18}. Balint's proposals regarding the group reflection on the clinic show the potential of these strategies to develop the subjective field of students, with consequences for their abilities to establish therapeutic alliance.

Our findings strengthen the body of evidence in favor of reflective and humanities-based educational strategies for developing the skills and attitudes necessary for the complex clinical management of T2DM. The subjective reflection that it produces in the subjects highlights the nuclei of what, if not mitigated, can become a non-collaborative factor in the installation of therapeutic alliance, which will suffer from some doctor's ideas.

The reflection deriving from the contemplation of colleagues and tutors allows the subjective change in these students' ideas, promoting training through collective feedback, which results in awareness. This uncomfortable feeling of being contemplated by someone becomes a self-contemplation, "as if I were being watched, evaluated all the time", so "I need to do my best because people are watching me" (Leia). Therefore, this core of subjective exchange works like the device that Balint used in his research groups and continuing education for generalists in PHC: a device of insights resulting from the freedom to express and discuss. These performance-based reflection strategies address this creative and sensitizing exercise, also arising from elements of the arts^{11,18}. The artistic and creative nature of these strategies is dynamically capable of developing competences – in this work we demonstrate their usefulness in helping students to understand how to place themselves in the T2DM clinic.



The study focused on interpreting the most emphasized statements attributed by students and represented in the exploration of categories. The students' beliefs that undermine their commitment to the medical role and other obstacles in their education were exemplified by the conceptions articulated between the categories. Educators can draw parallels with their realities and promote reflection among learners, encouraging them to develop collective means of support to overcome insecurities hindering the clinical management of diabetes. This aligns with Balint's framework and suggests an effective approach to addressing medical education challenges.

Final considerations

When we listen to the fourth-year medical students, in a performance reflection activity, in the simulation group of care of two scenarios of the T2DM clinic, we find the subjective and symbolic view they have about this health condition and its treatment. The students represented T2DM as a distressing affliction and its treatment as an impacting sentence, conceived from restrictive aspects that distance them from a positive appreciation of the acquisition of healthy habits of life in clinical management.

It was difficult to understand the simulated role of clinicians. Peer observation caused inhibition and pressure. Added to this was the insecurity in failing to develop therapeutic and caring solutions and the fear of harming someone, even if they were sure about the need to act in the control of the glycemic level and the evolution of complications. Such subjective aspects regarding the condition, its treatment, and how they manifest in the clinical setting, can hinder the establishment of the necessary working alliance to facilitate the construction and revision of a therapeutic plan that overcomes the challenges of patient engagement.

The intervention by simulation allowed the students to gain insights into these subjective aspects, providing a unique opportunity and speculating to understand how they saw themselves in the T2DM clinic and on the level of their abilities. The subjects learned their limitations, emotions, fears, doubts and hesitations from the shared experience. The awareness of these elements is important to be free from the broad and sensitive understanding of the psychocultural conditions that involve those affected by T2DM, so that they can manage the barriers to treatment. This awareness is in line with the Balint's proposals — continuing education to raise awareness of removing barriers with which physicians were involved in clinical cases.

Without due reflection on all these elements, our subjects would be different from the clinic recommended for T2DM by the best recommendations. We believe that this educational strategy was adequate to cooperate with the subjects and that it is also useful when added to the framework of those that can meet the present formative challenges of the medical role of the T2DM clinic in PHC, bringing together the development of technical and humanistic aspects.



Authors' contribution

All authors actively participated in all stages of preparing the manuscript.

Conflict of interest

The authors have no conflict of interest to declare.

Copyright

This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, BY type (<https://creativecommons.org/licenses/by/4.0/deed.en>).



Editor

Antonio Pithon Cyrino

Associated editor

Leandro David Wenceslau

Translator

Jane Godwin Coury

Submitted on

10/03/22

Approved on

06/30/23

References

1. Forouhi NG, Wareham NJ. Epidemiology of diabetes. *Medicine (Baltimore)*. 2019; 47(1):22-7. doi: 10.1016/j.mpmed.2018.10.004.
2. World Health Organization. The thirteenth general programme of work 2019–2023 [Internet]. Geneva: WHO; 2019 [cited 2023 Jul 5]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/324775/WHO-PRP-18.1-eng.pdf>
3. Tsao P, Yu CH. “There’s no billing code for empathy” - Animated comics remind medical students of empathy: a qualitative study. *BMC Med Educ*. 2016; 16(1):204. doi: 10.1186/s12909-016-0724-z.
4. Wagner EH. Academia, chronic care, and the future of primary care. *J Gen Intern Med*. 2010; 25 Suppl 4:S636-8. doi: 10.1007/s11606-010-1442-6.
5. Remus KE, Honigberg M, Tummalaipalli SL, Cohen LP, Fazio S, Weinstein AR. A chronic disease management student-faculty collaborative practice: educating students on innovation in health care delivery. *Acad Med*. 2016; 91(7):967-71. doi: 10.1097/ACM.0000000000001147.



6. International Diabetes Federation. International Curriculum for Diabetes Health Professional Education [Internet]. Brussels: IDF; 2008 [cited 2019 Feb 15]. Available from: https://www.worlddiabetesfoundation.org/sites/default/files/IDF%20Curriculum_Introduction_ENG.pdf
7. Ho JD, Woo VC. A study of diabetes teaching in canadian medical schools. *Can J Diabetes*. 2016; 40(2):149-51. doi: 10.1016/j.cjcd.2015.08.017.
8. Buckley A, Colagiuri R. How well are we preparing undergraduates to deal with diabetes? *Aust N Z J Public Health*. 2008; 32(3):291. doi: 10.1111/j.1753-6405.2008.00233.x.
9. Gorrindo P, Peltz A, Ladner TR, Reddy I, Miller BM, Miller RF, et al. Medical students as health educators at a student-run free clinic: improving the clinical outcomes of diabetic patients. *Acad Med*. 2014; 89(4):625-31. doi: 10.1097/ACM.000000000000164.
10. Macnaughton J. The humanities in medical education: context, outcomes and structures. *Med Humanit*. 2000; 26(1):23-30. doi: 10.1136/mh.26.1.23.
11. Carvalho Filho MA, Ledubino A, Frutuoso L, Wanderlei JS, Jaarsma D, Helmich E, et al. Medical education empowered by theater (MEET). *Acad Med*. 2020; 95(8):1191-200. doi: 10.1097/ACM.0000000000003271.
12. Beigzadeh A, Bahmanbijari B, Sharifpoor E, Rahimi M. Standardized patients versus simulated patients in medical education: are they the same or different. *J Emerg Pract Trauma*. 2015; 2(1):25-8. doi: 10.15171/jept.2015.05.
13. Bradley P. The history of simulation in medical education and possible future directions. *Med Educ*. 2006; 40(3):254-62. doi: 10.1111/j.1365-2929.2006.02394.x.
14. Balint M. *The doctor, his patient and the illness*. 2nd ed. London: Pitman Medical; 1964.
15. Stevens CD. Repeal and replace? A note of caution for medical school curriculum reformers. *Acad Med*. 2018; 93(10):1425-7. doi: 10.1097/ACM.0000000000002219.
16. Schwartzstein RM, Roberts DH. Saying goodbye to lectures in medical school — paradigm shift or passing fad? *N Engl J Med*. 2017; 377(7):605-7. doi: 10.1056/NEJMp1706474.
17. Deinzer R, Kiupel S, Weik U. Endocrine and psychological stress response in simulated doctor-patient interactions in medical education. *Psychoneuroendocrinology*. 2019; 105:172-77. doi: 10.1016/j.psyneuen.2018.09.028.
18. Hoang NS, Lau JN. A call for mixed methods in competency-based medical education: how we can prevent the overfitting of curriculum and assessment. *Acad Med*. 2018; 93(7):996-1001. doi: 10.1097/ACM.0000000000002205.
19. Campos C, Alves V, Turato ER. Concepts and grounds of clinical-qualitative method. In: *Atas do 4º Congresso Ibero Americano em Investigação Qualitativa - CIAIQ2015*; 2015 Aug 5, 6, and 7; Aracajú (SE). Aracaju: CIAIQ; 2015 [cited 2021 Jan 31]. Available from: <https://proceedings.ciaiq.org/index.php/ciaiq2015/article/view/93>
20. Fontanella BJB, Campos CJG, Turato ER. Data collection in clinical-qualitative research: use of non-directed interviews with open-ended questions by health professionals. *Rev Lat Am Enfermagem*. 2006; 14(5):812-20. doi: 10.1590/S0104-11692006000500025.
21. Gruppen LD, Burkhardt JC, Fitzgerald JT, Funnell M, Haftel HM, Lypson ML, et al. Competency-based education: programme design and challenges to implementation. *Med Educ*. 2016; 50(5):532-9. doi: 10.1111/medu.12977.



22. Hibbert EJ, Lambert T, Carter JN, Learoyd DL, Twigg S, Clarke S. A randomized controlled pilot trial comparing the impact of access to clinical endocrinology video demonstrations with access to usual revision resources on medical student performance of clinical endocrinology skills. *BMC Med Educ.* 2013; 13:135. doi: 10.1186/1472-6920-13-135.
23. Faria-Schützer DB, Surita FG, Alves VLP, Bastos RA, Campos CJG, Turato ER. Seven steps for qualitative treatment in health research: the clinical-qualitative content analysis. *Cien Saude Colet.* 2021; 26(1):265-74. doi: 10.1590/1413-81232020261.07622019.
24. Lee TC, Frangos SN, Torres M, Winckler B, Ji SG, Dow E. Integrating undergraduate patient partners into diabetes self-management education: evaluating a free clinic pilot program for the underserved. *J Health Care Poor Underserved.* 2016; 27(4):1689-708. doi: 10.1353/hpu.2016.0156.
25. Whitehouse CR, Haydon-Greatting S, Srivastava SB, Brady VJ, Blanchette JE, Smith T, et al. Economic impact and health care utilization outcomes of diabetes self-management education and support interventions for persons with diabetes: a systematic review and recommendations for future research. *Sci Diabetes Self Manag Care.* 2021; 47(6):457-81. doi: 10.1177/26350106211047565.
26. Krok-Schoen JL, Shim R, Nagel R, Lehman J, Myers M, Lucey C, et al. Outcomes of a health coaching intervention delivered by medical students for older adults with uncontrolled type 2 diabetes. *Gerontol Geriatr Educ.* 2017; 38(3):257-70. doi: 10.1080/02701960.2015.1018514.
27. World Health Organization. WHO global coordination mechanism on the prevention and control of noncommunicable diseases: final report: WHO GCM/NCD working group on the alignment of international cooperation with national NCD plans (Working Group 3.2, 2016–2017). Geneva: WHO; 2018.
28. Nieman LZ. A preclinical training model for chronic care education. *Med Teach.* 2007; 29(4):391-3. doi: 10.1080/01421590701299298.
29. Diehl LA, Gordan PA, Esteves RZ, Coelho ICMM. Effectiveness of a serious game for medical education on insulin therapy: a pilot study. *Arch Endocrinol Metab.* 2015; 59(5):470-3. doi: 10.1590/2359-3997000000118.
30. Rydén L, Grant PJ, Anker SD, Berne C, Cosentino F, Danchin N, et al. ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD: the task force on diabetes, pre-diabetes, and cardiovascular diseases of the European Society of Cardiology (ESC) and developed in collaboration with the European Association for the Study of Diabetes (EASD). *Eur Heart J.* 2013; 34(39):3035-87. doi: 10.1093/eurheartj/ehs108.
31. Inzucchi SE, Bergenstal RM, Buse JB, Diamant M, Ferrannini E, Nauck M, et al. Management of hyperglycaemia in type 2 diabetes, 2015: a patient-centred approach. Update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetologia.* 2015; 58(3):429-42. doi: 10.1007/s00125-014-3460-0.



Esta pesquisa qualitativa objetivou compreender as experiências de estudantes de um quarto ano médico durante dois cenários de simulação clínica do manejo do diabetes tipo 2 na Atenção Primária. Dez estudantes simulados foram entrevistados. Os resultados descrevem a concepção simbólica do diabetes e seu tratamento como angústia, dano, condenação e uma sentença desagradável que afeta a apropriação e o desempenho do papel médico pelos estudantes. Considerando a Psicologia Médica, sugerimos que os fatores subjetivos apontados devem ser abordados no ensino-aprendizado além de aspectos cognitivos mais comuns na literatura de educação médica para que os estudantes desenvolvam o perfil de trabalho ao enfrentamento do diabetes na Atenção Primária. A simulação clínica permite esta abordagem subjetiva por seu componente de suporte grupal promovendo reflexão, *insights* e autoconsciência.

Palavras-chaves: Treinamento por simulação. Diabetes Mellitus tipo 2. Educação de graduação médica. Papel médico. Psicologia médica.

Esta encuesta cualitativa tuvo el objetivo de comprender las experiencias de estudiantes del cuarto año de medicina durante dos escenarios de simulación clínica del manejo de la diabetes tipo 2 en la Atención Primaria. Fueron entrevistados 10 estudiantes simulados. Los resultados describen la concepción simbólica de la diabetes y su tratamiento, tales como angustia, daño, condenación y una sentencia desagradable que afecta la apropiación y el desempeño del papel médico por parte de los estudiantes. Considerando la Psicología Médica, sugerimos que los factores subjetivos señalados deben abordarse en la enseñanza-aprendizaje, más allá de aspectos cognitivos más comunes en la literatura de educación médica para que los estudiantes desarrollen el perfil de trabajo para el enfrentamiento de la diabetes en la Atención Primaria. La simulación clínica permite este abordaje subjetivo por su componente de soporte grupal promoviendo reflexión, *insights* y autoconciencia

Palabras clave: Capacitación por simulación. Diabetes Mellitus tipo 2. Educación de graduación médica. Papel médico. Psicología médica.