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Research article

Cultural differences in simulation debriefing: A qualitative analysis

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ABSTRACT

Context: Simulation is a social practice impacted by norms, values, and beliefs. We seek to explore the relationship between cultural factors and participant behaviour patterns as perceived by debriefers during healthcare simulation debriefings. Our research question focuses on elucidating factors that influence debreifing dynamics between and among debriefers and learners according to Hofstede's cultural dimension: the Power Distance Index.

Methods and materials: The study employed inductive qualitative analysis following Braun and Clark's 6-step approach to explore debriefers' perceived barriers to discussing non-technical skills including closed-loop communication, situational awareness, and cultural aspects of healthcare simulation debriefing. This study is a complementation to previously published quantitative paper, the qualitative findings are derived from the third section of the interview guide developed by the authors which focused on aspects of the debriefing such as debriefers' perceptions of participant familiarity with non-technical skills and cultural sensitivity.

Findings: The responses of 57 debriefers from 26 countries were analysed; 36 (64%) of whom practiced simulation in low power distance index (PDI) countries and 31 (36%) practiced in high PDI countries. We identified three major themes: I. Group dynamics, encompassing challenges of hierarchy, 'speaking up', fear of 'losing face' and 'judgement'. II. Conceptual clarity about debriefing medical/technical content and the challenges of 'language' and III. Institutional 'skepticism' toward simulation as a relatively new method of teaching in many parts of the world.

Insights: The findings confirm the social nature of simulation debriefings, where the interactions are guided by motivations and rules, and where more variability can be found within a culture than between cultures. Acknowledging these differences could lead to cultivating new integrative perspectives for all levels of the healthcare system.

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1. Introduction

The practice of simulation in healthcare continues to grow globally. Gradually, the fabric of simulation is being woven into and tailored to the national cultures of the world; a growing number of professions and disciplines now incorporate simulation as a teaching modality [1–3]. It is important to recognize that simulation will be impacted by the norms, values, and beliefs held by those interacting in a simulation, as simulation is a social practice [1,2]. People interact with each other, with equipment and within organizational units. How this interaction unfolds can be described by using different constructs, one of which is culture [3,4].

The concept of culture-be it national, institutional, or professional-is one that appears to make sense intuitively [3]. However, when subjugated to strict definitions, the concept becomes blurry. Moreover, the concept of culture remains difficult to measure and/or analyse. In healthcare simulation, cultural analyses are beginning to emerge and have the potential to enable goal-oriented practices [4]. Such practices would encompass taking learners and teachers' mutual expectations into account when designing and conducting simulations and debriefings.

Healthcare simulation practices often follow similar recurring phases [5]: the simulated exercise is preceded by a pre-briefing and is followed by a debriefing that is made up of debriefer(s) and participants. However, even if there are similarities among different cultures in the flow of simulation-based learning events, what transpires during the different phases and what meaning participants and debriefers assign to the respective learning events, may vary considerably. Not only from country to country, from profession to profession, but also amongst participants. The variation within a country or within a profession might sometimes be greater than the variation between countries or between professions. In healthcare, depending on the cultural setting in which the simulation takes place, the role of the debriefer might be viewed as the facilitator/coach or as the master/instructor. In one setting, the participants might be seen in accordance with their typecast: the doctor as the hero, the nurses as the assistants and the patients as the distressed. In a different cultural setting, the interplay between the debriefer, the doctors and the nurses may play out according to different cultural norms [6]. In certain Western cultures, nurses feel empowered to speak up during simulation when addressing physicians, whereas in other cultures, a nurse would never point out or correct an error if the error was made by a physician. To fully understand how the debriefing process unfolds, it is important to consider the people involved, the learning goals of the simulation exercise, the interaction patterns, the physical characteristics, the national culture, and the organizational structure [2].

In this publication, we continue our work approaching culture as expressed by Hofstede and supplement our quantitative data with a qualitative analysis [4]. Hofstede's model proposes that national cultures vary along six dimensions, one being power distance (PD), our current focus. PD describes the acceptance of inequality in the distribution of power in a certain society [7]. The higher the PD index (PDI), the more absolute and uncontested the hierarchy. In our previous study [4]. we showed that in high PDI ($\geq$50) cultures, the interaction pattern between debriefer and participants tends to strongly focus on the debriefer. The debriefer is involved in essentially every interaction. In countries with a PDI of less than 50, there were more interactions that did not involve the debriefer, and that took place between participants (see Fig. 1). We also showed that in high PDI cultures, debriefing content focuses more on technical knowledge, whereas non-technical skills such as speaking up, admitting wrong diagnosis/treatment and personal uncertainty were deemed as more difficult to address.

Our current analysis explores the relationship between cultures and behavioural patterns of participants as perceived by debriefers during simulation debriefings in greater detail. We seek to shed light on the reasons behind action-based differences identified in the previous study [4]. Our research question focuses on elucidating factors that influence debriefers' interactions with learners in countries with high versus low power distance index.

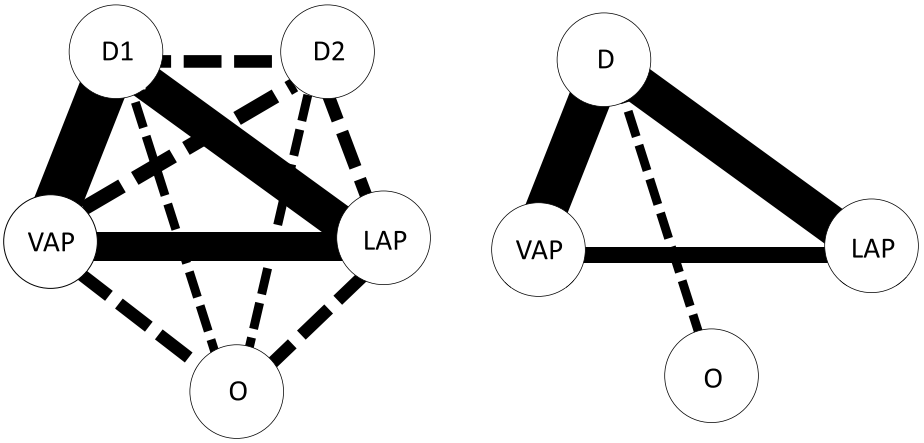


Fig. 1. Typical interaction patterns take the form of a "Star-Shape" in low PDI (<50) country (Left) and "Fan-Shape" in high PDI ($\geq$50) (Right). The width of the vector displays the volume of interaction. The dashes display the fact that not all debriefings include 2 debriefers and/or observers. D: Debriefer; O: Observer; VAP: Very Active Participant; LAP: Less Active Participant.

2. Methods

2.1. Qualitative approach and research paradigm

In this section we focus on describing the qualitative methodology employed for the development of the themes. The qualitative arm of the original study presented in this paper is an explorative investigation using semi-structured interviews and open-ended questions [4]. The aim being to collect the views of experienced simulation debriefers on debriefing interactions in different cultures.

2.2. Researcher characteristics and reflexivity

The research team consisted of simulation educators working in healthcare as clinicians/academicians with experience ranging from 4 to 20 years. Members of the team had experience in qualitative research methods to varying degrees. While we are based in different countries, and some of us do not reside in the country in which we were born or grew up in, our simulation-based socialization is rooted in Western ideology and philosophy. We also share a common belief that simulation practice should adapt to local needs and customs. We see this as a call to study the disparate approaches to simulation debriefing in different cultures.

Given the nature of the study focus and the multicultural background of the research team, we strived to exercise objectivity and reflexivity in acknowledging our own cultural beliefs and assumptions and their potential bias on the research findings and hence sought a broad multicultural sample of debriefers practicing in a variety of cultural settings. Analyses were performed iteratively by all members of the team and findings discussed and unanimously agreed upon.

2.3. Context

Interviews were conducted with debriefers who had practiced at least 25 simulation debriefings with interprofessional participant groups at the postgraduate level. The data used in this study was collected as part of our previous study [4]. The interviews were conducted in person or virtually with one of authors (except ZL and GH) or completed by the participants on their own.

2.4. Sampling strategy

The five interviewers conducted the interviews with a convenience sample of debriefers who were recruited during international simulation conferences. Participating debriefers had to have conducted at least 25 debriefings and be currently debriefing interprofessional healthcare teams and have sufficient English language proficiency for the interview. Potential participants were approached in-person or via e-mail to take part in the interview. Once they consented, a mutually convenient meeting was set up either in person, over the phone or via video teleconference by the interviewer.

2.5. Ethical issues

The study was approved by the Swiss Ethics Review Board (EKNZ Req-2016-00674). Participants were informed about the nature of the study, the intended analysis strategy, the intent to publish the results anonymously and that they could withdraw from the study at any time.

2.6. Data collection methods and instruments

We designed a semi-structured interview guide (Appendix A: Interview Guide) that queried debriefer perceptions during debriefing. The quantitative results thereof were published in a previous paper [4]. The qualitative section of the interview guide specifically explored debriefers' perceived barriers to discussing non-technical skills including closed-loop communication and situational awareness. Interviewees were asked to (1) elaborate on why they thought non-technical skills were difficult to discuss during debriefing and (2) to comment on cultural aspects of simulation debriefing.

2.7. Data processing and analysis

To maintain confidentiality and ensure anonymity of the participants, pseudonyms were used to describe the findings. Study participants were referred to by the country in which they practice simulation and the country's PDI (e.g., India 77). This was intended to aid the reader in contextualizing the quotes in relation to cultural PDI.

Recorded answers were analysed deductively following the six-step approach of Braun and Clarke (2006) for conducting reflexive thematic analysis [8]. ZL transcribed the responses, next ZL and GHA familiarized themselves with the data by reading and re-reading each entry; then ZL and GHA initiated the coding and created a coding framework for the potential codes based on their understanding of the topic and the information provided in the interviews and they started categorizing and proposing potential themes. Lastly, the list of themes was refined through discussion with the author group and the themes were finalized in a complete narrative of the findings.

Initially, the answers were coded-blinded to the PDI of the original responses, the themes were arranged according to PDI as a final step of the categorization. As in Ulmer and Sharara-Chami el al (2018), the PDI cut-off distinguishing countries with low and high PDI

cultures was set at 50[4] (see Fig. 2). A PDI less than 50 was considered low and a PDI of 50 or greater was considered high.[9]The PDI values used were obtained from the Geert Hofstede website [9]. Demographic PDI data were analysed using the statistical analytics software SPSS 23.00 (IBM SPSS Statistics, IBM Corporation, Armonk, NY).

3. Findings

Of the N = 68 participants, 57 debriefers from 26 countries responded to the narrative questions. Thirty-six debriefers (64%) practiced simulation in low PDI countries and 21 practiced in high PDI countries (Fig. 2). Eighty percent of the debriefers were physicians, with an average of 7 years-experience in debriefing multidisciplinary healthcare teams. Sixty-one percent of debriefers currently worked in settings similar to the PDI of their country of origin and/or training [example: Trained and currently practicing in the UK (PDI 35) or originally from Germany (PDI 35) currently practicing in Switzerland (PDI 34)] while 16% worked in settings with higher PDI than their country of training and origin (ex: originally from Australia (PDI 36) currently practicing in Qatar (PDI 90)] and 22% in settings with lower PDI than their country of origin and/or practice [ex: From India (PDI 77), currently debriefing in the UK (PDI 35)].

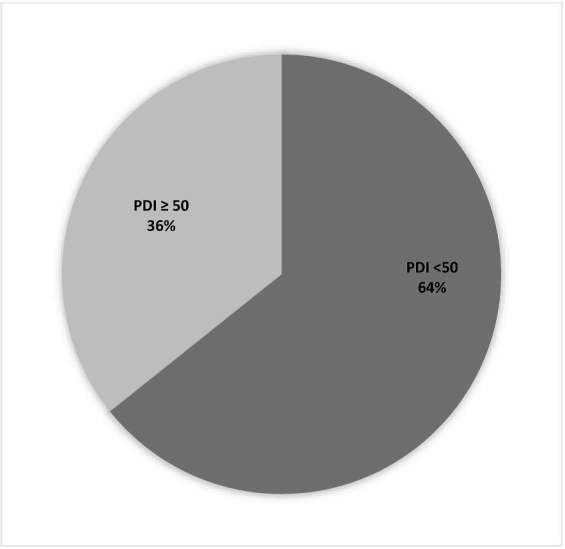
3.1. Findings

Overall, 83 meaningful phrases were reviewed and analysed. Of the thirty answers analysed for why debriefers thought non-technical skills were difficult to discuss during debriefing; , 17 were from low PDI culture countries ranging from 18 to 40 on the PD index, and 13 were from high PDI culture countries ranging from 54 to 100. Similarly, 50 responses regarding cultural aspects of simulation debriefing were analysed, the majority (n = 34) of which were from low PDI cultures ranging from 18 to 40 and 16 from high PDI cultures ranging from 54 to 95 on the PD index. We identified three major themes.

I. **Group dynamics:** Debriefing multidisciplinary teams with clear demarcation of 'hierarchy' between physicians and nurses or attendings and residents proves challenging for many to 'speak up' for fear of 'losing face' and 'judgement'. Moreover, non-clinical debriefers 'avoid confrontation' with participants on clinical knowledge such as discussing misdiagnoses or incorrect treatment. These perpetuate the notion that physicians are 'infallible', that they carry 'great expectations.' The following quotes from debriefers working in high and low PDI settings illustrate the effect professional and institutionalized hierarchies had on debriefing dynamics:

> I think if there are hierarchical differences between participants, like if a nurse is there with her attending physician or if there is a more junior person and a more senior person, there is a lot of differential behavior.
>
> Germany35

> This has to do with the local circumstances of how leadership is structured and secondly with the ratio among the different professions (physicians, nurses, students, residents, attendings …). Hierarchies are steep. People will discuss "speaking up" with their peers, but it's pointless to raise the issue with higher ups.



Country (n)	PDI
Denmark (n=6)	18
New Zealand (n=1)	22
Norway (n=1)	31
Switzerland (n=8)	34
United Kingdom (n=7)	34
Germany (n=4)	35
United States (n=9)	40
Japan (n=2)	54
Thailand (n=1)	64
Colombia (n=1)	67
Egypt (n=1)	70
Slovenia (n=1)	71
Singapore (n=1)	74
Lebanon (n=1)	75
India (n=2)	77
Mexico (n=1)	81
Kuwait (n=1)	90
Romania (n=1)	90
UAE (n=1)	90
Qatar (n=4)	93
Guatamala (n=1)	95
Malysia (n=1)	100

Fig. 2. Power Distance Index (PDI) Distribution of the debriefers' current country of simulation practice (PDI <50; PDI of ≥50). The (n) represents the number of debriefers from each country.

Switzerland34

> Challenging authority gradient within medical hierarchy is a foreign concept
>
> Malaysia 100

> It's usually the nurses that do not speak up. There is the element of the hierarchical nature of society. This is a very eastern thing that nurses do not speak up to doctors, when they know a doctor is making a mistake.
>
> Singapore74

Presentations of hierarchy were the most prolific emergent themes we deduced from the debriefer responses. Given that most simulations involved participants from interprofessional and multidisciplinary backgrounds, *hierarchy* became one of the main encumbering factors for participants' engagement in the debriefing. It highlighted subthemes beyond professional and generational hierarchy such as gendered representations (physicians were mostly males and nurses, female). In some cultures, particularly in patriarchal societies (high PDI), women assume more inferior roles at home and in the workplace. In some instances, these roles are deep-rooted and institutionalized; this shows during debriefings where nurses take a back seat when physicians and other higher-ranking professionals are present.

> Would a female challenge a male's decision by speaking up?
>
> USA40

Hierarchy and the subtheme of Great Expectations are firmly interconnected. Great Expectations echoed how perception of knowledge translated into professional interactions and shifted the dynamic during debriefings. Physicians held themselves to a very high, often unrealistic standard of knowledge and expectation; and when facing a potential mistake that had occurred during the simulation, they had a difficult time speaking up in front of peers or other members of the interdisciplinary team whom they considered inferior for fear of being judged or showing a lack of knowledge. On the other hand, nurses sometimes felt inferior to physicians and other higher-ranking members in the group, thus refraining from participating in the discussion lest they expose a lack of knowledge and inability to keep up.

> Physicians have been brought up in a culture where recognition of skill or knowledge deficiency may have not been rewarded. This is mostly due to the way our medical education system works, where up until this point in their training getting 100% on a test is considered success and getting 60% is failure. So, hearing about opportunities for improvement or failure or deficiency can be off-putting.
>
> USA40

> Expectation of participant for medical knowledge is high, so they don't feel comfortable to reveal their lack of knowledge
>
> Japan 54

> The historical structure, where physicians-especially consultants- are seen as experts per definition, makes an open approach to discussing more personal competencies difficult. When it is expected in the clinical routine that the physician is the most competent person in the room, then it looks like that it is really risky for physicians especially, to talk about weaknesses, etc.
>
> Denmark 18

II. **Conceptual clarity:** When 'debriefing medical content/technical skills', debriefers who were not clinicians found it challenging debriefing clinical content as they did not want to challenge or confront some physician participants on their approach. Similarly, debriefers noted that junior and nurse participants often did not confront lead physicians on their management plans even when in disagreement. Additionally, 'language' posed a challenge during debriefing amongst the participants and sometimes between the debriefer and the participants. Within multicultural, multi-professional groups, cultural differences came to the forefront, especially eastern nationalities, and cultural backgrounds in a European/Western setting. These presented themselves in the way participants addressed their superiors and in the way they held themselves i.e., their body language and non-verbal communication. These practically constituted language barriers, where the lines of communication between debriefer and participant, and amongst the participants, were strained and broken. Many debriefers found it difficult engaging participants in the debriefing if their (debriefer/participant) first language and the language of the debriefing were different. Some participants were uncomfortable speaking the native language. Moreover, some languages are hierarchical/gendered in structure, which may pose a challenge depending on the background of the participants and the culture where the debriefing is taking place.

> Where I work, there is a sizable number of migrants from Arabic countries. Arabic and Asian cultures have very steep hierarchical gradients. It's pointless to try and teach many of the people stemming from these cultures things like "speaking up", because it clashes with their understanding of respect. Debriefing people with such cultural backgrounds is very challenging to me.
>
> Germany35

> Nationality plays a role in debriefing. Participants from Germany are more direct. More likely to express things they approve or disapprove of. The Swiss are much more reserved and reluctant to criticize others.
>
> Switzerland34

III. **Institutional context:** The institutional environment and the organisation in which the debriefing is taking place may harbor 'skepticism' toward simulation as a new method of teaching and an 'unfamiliarity with non-technical/soft skills' (CRM: Crisis Resource Management). Simulation is relatively unchartered territory, especially in high PDI culture countries, with low resources, it is a recent addition to the educational system. Debriefers alluded to their perception of skepticism in the usefulness of simulation among organizations and employees. Organizations which have recently adopted simulation mostly use it for teaching or assessing clinical skills, therefore simulation exercises for developing non-technical skills are not as widely known. Similarly, debriefers noted that debriefing non-technical skills in organizations unfamiliar with CRM posed a challenge for themselves and participants alike.

Debriefers commented on how the content of the debriefing affected participant dynamics. It is easier discussing clinical skills as they are (1) more objective and straightforward, there was little room for interpretation when it came to the correct diagnoses and management plans, (2) most participants prioritized medical competence over soft skills.

> Not used to simulation, not expected, not much experience. People are afraid before simulation, then relieved afterwards.
>
> Slovenia 71

> Quite a few of our participants are unfamiliar with CRM.
>
> Singapore74

4. Insights

This study analyses the debriefers' perceptions of the interactions amongst participants during healthcare simulation debriefings. The debriefers constituted an international group of healthcare simulation debriefers from different countries with high and low PDI. The assumption that there might be differences in the perceptions across the board based solely on PDI could not be confirmed and we were therefore unable to identify differential patterns.

The findings in this study provide valuable insights into the perception-guided reasoning that many simulation debriefers rely on when debriefing. The findings support the social nature of simulation debriefings, where the interaction between people is guided by motivations and rules [1,2,10,11].

The different themes developed from the underlying codes reflect previous findings from our group. In order to describe debriefing activities, we argue that one needs to describe the people involved in the debriefing, the content of the debriefing discussion, the interaction patterns during debriefings, the physical characteristics of the setting and the organizational context in which the debriefing is carried out. The identified themes highlight the importance of understanding how people interact in a debriefing, what they do and do not talk about and in which context they do so. This understanding is essential whenever courses are developed to train faculty in debriefing; having this understanding will enable debriefers to see beyond what is just voluntarily shared in a session. In addition, it will prime them to be receptive of cultural nuances-be it their native culture or the one they are currently practicing in and they are trying to adapt to.

When we compared themes across high and low PDI countries, we were unable to see consistent differences. Elements that were shown to be significantly different between high and low cultural contexts in the previous paper [4], especially as they pertain to the theme of *Group Dynamics,* were unexpectedly similar in this qualitative analysis.

The quotes, as remarked by the study participants, suggest that the term *culture* was subjectively interpreted on a variety of levels. This is exemplified by study participants referring to a wide and open-ended range of cultural dimensions when specifically prompted to discuss culture: national culture, hierarchical standing, professional culture (physicians do things a certain way vs. nurses doing things another way) and organizational culture. The fact that participants referred to culture from different viewpoints illustrates that culture is indeed a multidimensional concept. This observation underscores the importance of clearly defining culture, if at all possible, before embarking onto a debate thereof. Clearly defining culture at the beginning of a discussion will reduce the likelihood of a discussion on culture spiralling into participants heterogeneously talking about culture on completely different levels. Debriefers need to be aware of and prepared for participants to approach a debriefing with heterogenous perceptions of culture. When discussing culture during simulation, debriefing participants may picture a variety of culture-related patterns including but not limited to national background (e.g. *hierarchy* or *language*), professional background (e.g. *debriefing content*), the position within the organisation (e.g. *hierarchy*), and professional norms within the healthcare system (e.g. *focus on error*). Accordingly, debriefers are advised to pre-emptively define which form of culture the team is to consider when discussing culture-relevant topics in a debriefing. This will simplify reasoning the debriefer's practice of debriefing and will make study objectives-like ours-more defined.

4.1. Culture as concept

We chose to work with Hofstede's view on culture, as it allowed for comparative distinctions when culture manifests itself in different ways [12]. We focused on PD, one of the six dimensions of culture. The quantitative analysis conducted in our previous study allowed us to distinguish countries according to PDI illustrating hierarchy-specific differences in the actions taken during debriefings as described by debriefers. A good example of action differences relayed to us by the study participants was the fact that significantly

Table 1
Overview of the themes describing simulation and debriefing practices in different countries Including: Group dynamics, Conceptual clarity and Institutional context.

Theme	*Code*	Quotes	
		PDI <50	PDI ≥50
I. **Group dynamics** Debriefing multidisciplinary teams with clear demarcation of 'hierarchy' between physicians and nurses or attendings and residents makes it difficult for many to 'speak up' for fear of 'losing face' and 'judgement' and with multidisciplinary teams, non-clinical debriefers 'avoid confrontation' with participants on clinical knowledge such as discussing misdiagnoses or incorrect treatment. These perpetuate the notion that physicians are 'infallible', they carry 'great expectations'.	*a. Hierarchy*	i. "I debrief in different countries– there are differences in the cultures/hierarchy plays a role– impact on atmosphere and how easy people talk. Italy: Loud! Hierarchy not so clear. South Tirol: you often have a big boss kind of in the background, like a shadow. Never really visible, but always present. (*Germany, 35)* ii. "Where I work, there is a sizable number of migrants from Arabic countries. Arabic and Asian cultures have very steep hierarchical gradients. It's pointless to try and teach many of the people stemming from these Cultures things like "speaking up", because it clashes with their understanding of respect. Debriefing people with such cultural backgrounds is very challenging to me." *(Germany, 35)* iii. "Yes, the extreme distance created by discrepancies of power and the significance of hierarchy. Ultimately, very little value is allocated to team concepts, as most stem from a generation of loners. Within a group a leader is chosen, and this leader's decisions will not be questioned." *(Switzerland, 34)* iv. "This has to do with the local circumstances of how leadership is structured and secondly with the ratio among the different professions (physicians, nurses, students, residents, attendings …). e.g. speak up. Going up the chain- it doesn't matter what you say people with higher hierarchical status are tone deaf to this topic. Hierarchies are steep. People will discuss "speaking up" with the peers at their level, but it's pointless to raise the issue with higher ups. The ratio of professions: e.g. Anaesthesia nurses and physicians. Among these two professions, the practical scope of their occupation is the same. But nurses are unable to speak because their professional background is very different. They will not speak up." (*Switzerland, 34)*	v. Hierarchical. Would not speak before the boss; being asked first is a challenge for the participant being asked. You do not know yet what opinion will be acceptable and thus, might be reluctant to state it. Chief might intervene, then you have to stop them as soon as you can, typically each discussion stops in such a case." (*Romania, 90)* vi. "Challenging authority gradient within medical hierarchy is a foreign concept and not accepted culturally." (*Malaysia, 100)* vii. "Some hierarchical elements sometimes occur within the scenario e.g. paramedics may take over although out of their usual context however keep very quiet during debriefing." *(India, 77)*
	b. Speaking Up	i. "Simulation usually brings professionals together that don't know each other. This is when you	ii. "It's usually the nurses that do not speak up. There is the element of the hierarchical nature of society.

(*continued on next page*)

Table 1 (*continued*)

Theme	*Code*	Quotes	
		PDI <50	PDI ≥50
		see stereotypes presenting. Nurses not speaking up, allied health professionals (AHP) quiet and medical leading the participant debrief." *(UK, 34)*	This is a very eastern thing that nurses do not speak up to doctors, when they know a doctor is making a mistake." *(Singapore, 74)*
	c. Embarrassment Fear of Judgement & confrontation avoidance	i. "They don't want to expose weakness in knowledge." *(Denmark, 18)* ii. "Certain participants fear "losing face". In situations when hierarchy is steep, the debriefer is less likely to confront a more senior e.g. a chief or an attending physician as relentlessly as he would participants of a lower hierarchy. This is because the debriefer doesn't dare confront him or her in front of the others. In other words, in situations with steep hierarchy attendings and chiefs are approached more gently than staff members of a lower hierarchy." (*Switzerland, 34)* iii. "I am uncomfortable talking about the specific clinical content because I am not a clinician." (*US, 40)* iv. "I spend a lot of time training faculty to debrief. I have noticed some cultures (Indian for example) have a very difficult time with advocacy inquiry. I've noticed individuals struggle in sharing their observations and judgements." (*US, 40)*	v. "Sometimes I am not willing to correct wrong diagnoses of the case since now I don't want to embarrass the participants in front of their colleagues, which may lead to hate simulation. I feel this probably because we have just started program in our unit within a few years." (*Japan, 54)**
	d. Great Expectations "Doctors can do no wrong"	i. "The historical structure, where physicians-especially consultants-are seen as experts per definition, makes an open approach to discussing more personal competencies difficult. When it is expected in the clinical routine that the physician is the most competent person in the room, and then it looks like that it is really risky for physicians specially to talk about weaknesses, etc." (*Denmark, 18)* ii. "It's not culturally insensitive, but lots of people, particularly the physicians have been brought up in a culture where recognition of skill or knowledge deficiency may have not been rewarded." (*US, 40)*	iii. "Expectation of participant for medical knowledge is high, so they don't feel comfortable to reveal their lack of knowledge." (*Japan, 54)*
II. **Conceptual clarity** When 'debriefing medical content/ technical skills'. Additionally, 'language' poses a challenge during debriefing sometimes amongst the participant and sometimes between the debriefer and the participants.	*a. Debriefing Medical Content or CRM*	i. "Maybe a barrier towards discussing NTS (CRM) the technical issues get too important" (*Denmark, 18)*	ii. "Physicians more interested in technical issues, foreign concept to nurses [CRM]" (*Kuwait, 90)*
	b. Language: Lost in Translation	i. "The thing that always strikes me again and again when debriefing people from the French or Italian speaking part of Switzerland. We will be speaking in Swiss German or	

(*continued on next page*)

Table 1 (*continued*)

Theme	*Code*	Quotes	
		PDI <50	PDI ≥50
		High German (aka German) to each other, but I know that their linguistic background is either francophone or italophone. They will frequently try to categorize things as being either correct/right or incorrect/wrong– to me right or wrong is not the relevant issue. I perceive them as being very judgmental, but the judgmental part is precisely what I try to remove from the debriefing and rather focus on the frame behind the action. They have the tendency to judge themselves and other participants and say things like: "Yes, I see what I did wrong." It is particularly difficult for me to get them to examine the frame behind an action rather than categorizing the action into right or wrong." *(Switzerland, 34)* ii. "Some of the foreign doctors have cultural/communication problems. Might not be able to express them because of lack of [local language] skills, lacking clinical expertise relevant to their level. Difficulty: if physician, whose med. Skills are not good enough, he might create frustration in the team and those cannot be solved just by talking about them. Especially when from the Middle East and cannot/won't admit to this. Might trigger so strong emotions that communication breaks down." (*Denmark, 18)*	
III. **Institutional context** The institutional environment and the organisation in which the debriefing is taking place may harbor 'skepticism' toward simulation as a new method of teaching/learning and an 'unfamiliarity with non-technical/ soft skills' (CRM).	*a. Focus on error – free performance*	i. "This is mostly due to how the medical education system works, where up until this point in their training getting 100% on a test is considered success and getting 60% is failure. So, hearing about opportunities for improvement or failure or deficiency can be off-putting, considered to other things, particularly knowledge or skill." (*US, 40)*	ii. "Not used to simulation, not expected, not much experience. People are afraid before simulation, then relieved afterwards." (*Slovenia, 71)* iii. "Culturally, often people do not understand advocacy/inquiry, as they are more used to being told what to do. That can be quite challenging." *(Singapore, 74)*

more closed questions were posed in high PDI countries, whereas significantly more open questions were phrased in low PDI countries. The qualitative analysis of this study did not allow us to correlate specific themes to PDI.

We interpret not finding a clear distinction between high and low PDI settings as indicative of the complexity of culture as a concept: some of the responses made us wonder if the variations within a given national culture were not at times greater than between national cultures. (see Table 1 II. b.ii).

The notion of national culture fails to detect distinctive differences within a country in terms of culture (e.g., in the different parts of Switzerland). This raises the question of how vast "a particular culture" is perceived, how far it can penetrate, how it changes and what culture is or becomes when people of different cultures interact in social practice. The subjectively perceived cultural differences may themselves affect the discourse of the observer expressing his or her (cultural) perception. Therefore, the notion of objective culture observation can be challenged.

Many participants' descriptions suggest that they were cognisant of existing variability within a national culture. This is evidenced by expressions and stereotypical viewpoints contained in the quotes: phraseologies, such as "lots of people", or "some" (e.g., *great expectations*), objectify that the referenced cultural notion was not applicable to all members of the respective national culture, but only to a portion thereof and might indicate different viewpoints between different people even within the same country. For example, the quote from South Tyrol in Italy, in which South Tyrol is distinguished from the rest of Italy (see Table 1 I. a.i). South Tyrol is a mountainous region in Italy bordering Austria where German is the predominant language. It is noteworthy that the PDI in Austria is significantly lower at 11 compared to that of Italy's 50 [13]. Similarly, there are several quotes describing Switzerland as segregated according to the languages spoken in different regions (German vs. French).

On the other hand, there are also generalizing, stereotyping labels, like "it is an Eastern thing" (see Table 1 I. b.ii), or lumping "Arabic and Asian cultures" together (see Table 1 I. a.ii), failing to distinguish between people from within this category or assigning overarching norms to large groups of people (e.g. the notion that it is pointless to discuss speaking-up with people from Arabic of Asian countries, or with nurses). The referenced quotes make it sound as if culture is at times used in opportunistic ways to reason one's personal (cultural) viewpoints. Also, participants described different motives for their actions and perceptions during debriefings (e.g., not wanting participants to lose face (see Table 1 I. c.ii) or not feeling in a position to criticize participants who are of a different profession (e.g., see Table 1 I. c) [14].

The fact that our data contains differentiations at all indicates that "some" or "many" participants were seen as displaying certain behaviours, and it exemplifies the complexity within one national culture. Some of the hierarchy-specific phrases mentioned by the participants in the interviews (e.g., "not losing face") were mentioned in both high and low PDI national cultures, thus, making them appear quite similar at first glance. However, a closer look at these seemingly similar phrases led us to conclude that, despite this apparent similarity in phrasing and context, the magnitude and consequence of the meaning of the quoted phrases were quite different depending on the national cultures in which they were uttered. It also depended on the seniority of the responders within an organisation. "Losing face" is an unpleasant sensation, but the gravity of the consequences of losing face appears to be paralleled by PDI of national culture, (e.g., the subjectively experienced embarrassment is much worse if you lose face in Korea than in Norway). We speculate that these discrepancies in perception could be rooted in the differences in other national culture dimensions, such as individualism/collectivism: Western cultures exhibit a high degree of individualism whereas Asian cultures tend to revere collectivism. For instance, if we were to perform a comparison of these dimensions between China, South Korea, the United Kingdom, and the United States, the former two have individualism scores of 20 and 18 respectively and the latter two of 89 and 91 respectively [15].

One of the reasons why cultural differences have become so apparent to us has to do with the ease with which we travel and cross borders. Instantaneously without notice, we find ourselves surrounded by a new culture. Consider a Danish national taking a 10-h flight to Japan. Disembarking from the plane will generate a stark impression of the perceived cultural difference contrasting the traveller's national cultural fingerprint with another national cultural environment he or she is suddenly immersed in. Imagine the same Danish national, walking the same distance over the course of several years. Upon arrival in Japan, he or she would likely feel and act very different and would likely struggle to pinpoint where along the way he or she observed the culture changing. Similar notions might hold, like when slowly assimilating to a new professional culture. Simulation might provide a laboratory to try different cultures with scenarios designed accordingly.

Refining the notion of the potentially limited value of culture as an explanatory construct, we offer an alternative view for discussion: instead of saying culture × explains interaction z, one might say culture x is created by interaction z and small variations in z over time move, mold, and change culture. Culture itself is no longer seen as the determining property of an interaction, but rather as a constantly changing pattern of interactions [15]. The latter perspective, in our view, would enable a more fluid and inclusive approach to simulation and debriefings Our observations provide support for the assumption that culture is often an assessment of differences, rather than a description of differences.

Nobody doubts that diffusion takes place, it is a central premise of globalization … We can pick and choose which traits to adapt to our own culture and which to reject, Creating a sense of the 'global-local' or the 'glocal.' [17] the principle of adapting one's techniques to local conditions. As the authors and debriefers have mentioned, most have trained somewhere other than their country (ies) of practice, they have had to adapt to the 'local' several times over, and each consecutive time their adaptive skills and tools shifted with the locale, their identity as local or global shifted as well. Culturally and practically speaking, consider the following hypothetical: how German is a German doctor who has studied and trained in Japan for 15 years before returning to practice in Germany? A 'glocal' debriefer may bring just as much cultural complexity to the debriefing as a multicultural multidisciplinary team.

Different cultural perceptions could become a starting point for reflection and reflexivity, leading to new perspectives for the individual, the group and, potentially, for the organisation or the entire healthcare system. In this day and age, where we need to continue to fight stereotypical simplistic views and racism around the world, we would like to clarify that describing different aspects or behaviours associated with one culture does not mean in any shape or form that one culture is superior to another or that certain behaviours are justified just because they are rooted in one culture and not in another. We hope to describe cultural phenomena in healthcare simulation debriefing specifically so that in the future and with more research, these are identified, addressed, and managed in the most comprehensive and respectful way.

4.2. Discussion of the methods used

This study provides a closer look at the complexity of simulation debriefing relative to the cultural context in which it is conducted. This look is illustrative, but not representative. Our study had limitations during data collection. The data collection was not standardized, however, structured and collected via two methods. In the first method, we used the interview guide to conduct a face-to-face

interview while writing down the testimony of the participant, ensuring our notes were accurate and reflective of the participant's views. In the second method, participants received our interview guide and phrased the answers to our questions themselves. Moreover, we understand that the responses to the qualitative section may have been influenced by the time spent answering the two previous quantitative portions of the interview guide.

Author contribution statement

Rana Sharara-Chami; Francis Ulmer; Ella Scott; Peter Dieckmann: Conceived and designed the experiments; Performed the experiments.

Gladys Honein: Analysed and interpreted the data.

Zavi Lakissian: Analysed and interpreted the data; Wrote the draft of the paper.

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The authors do not have permission to share data.

Declaration of interest's statement

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

Declaration of competing interest

The authors have no conflicting interest to declare.

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Appendix A. Supplementary data

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