

It's time to consider national culture when designing team training initiatives in healthcare

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INTRODUCTION

The cultivation of a workplace culture that promotes patient safety is critical to the delivery of healthcare around the world. Since the 1999 Institution of Medicine report *To Err is Human* there has been growing focus on healthcare safety.¹ Breakdowns in communication and teamwork are often cited as root causes of preventable medical error in hospital and malpractice claims data.²

Patient safety initiatives that focus on individual and team behaviours have been shown to improve the quality and safety of healthcare.^{1 2} Taking cues from the aviation industry, hospital safety team training programmes aim to flatten hierarchy, promote communication clarity and emphasise a team-oriented approach to patient care.³ Given that individual behaviours and interpersonal dynamics are highly impacted by cultural context, it is no surprise growing evidence suggests important regional differences in healthcare safety culture.^{4–6} This is relevant given that most healthcare team training programmes were developed in the USA. While readiness assessments and stakeholder engagement are recognised as key tools to prepare for training, recommendations on adaptation to account for differences in national culture are lacking.

Our aim is to examine the role of national culture on team training programmes in healthcare. This article will focus on national culture rather than professional or organisational cultures. This paper highlights the importance of national context when creating or adapting initiatives to train healthcare teams and proposes a proactive process for programme adaptation when using pre-existing curricula.

THE GLOBAL REACH OF TEAM TRAINING IN HEALTHCARE

In 2001, the US Congress' National Defense Authorization Act mandated that military treatment facilities implement safety focused team training.⁷ In response, the US Department of Defense and the Agency for Healthcare Research and Quality collaborated to create and disseminate Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) as a national standard for healthcare team training. Several similar programmes were created during this period in the USA, with TeamSTEPPS, Anesthesia Crisis Resource Management, and Medical Team Training commonly exported for use worldwide.^{2 8} By 2017, 35% of US healthcare workers had TeamSTEPPS training and the curriculum had been translated into 20 languages with programmes in Europe, Africa, Asia, South America and the Middle East.^{9 10}

Team training programmes generally follow a systematic methodology to improve healthcare team performance through a combination of content, practice with formative feedback and tools to help operationalise the training in the clinical setting. The first phase of most programmes includes a pretraining readiness and needs assessment to identify local teamwork deficiencies and tailor training.¹¹ TeamSTEPPS provides several tools to assess institutional readiness but does not give specific recommendations on how curricula should be tailored.³

The lack of curriculum adaptation guidance is especially relevant given differences in safety culture manifestation between countries. Comparisons of hospital safety culture data demonstrate significant differences between the USA and non-Western countries.⁶ Given that most team training programmes were

developed in the USA, it is surprising that cultural assessment and contextual adaptation of training programmes are rarely described when curricula are implemented outside their original context.^{10 12}

LESSONS FROM AVIATION

The need to address national culture when adapting team training is supported by experience in the aviation industry. After the largest airline disaster in history occurred at Tenerife Airport in 1977, breakdowns in communication and hierarchy were identified as root causes of the crash. In response, crew resource management (CRM) training was created to build a culture of safety and reduce human error by improving communication and flattening hierarchy. After initial success in the USA, the International Civil Aviation Organization required all carriers to implement similar programmes.

CRM faced challenges when implemented internationally. The educators and psychologists who developed CRM perceived training as a set of universal technical skills that would standardise crew interaction worldwide. They did not account for differences in national culture that would challenge and undermine a US-developed programme. For example, when a Japanese airline implemented CRM with US trainers and materials they encountered incompatibility between the individual-oriented training and the more group-oriented trainees. The training had not accounted for the value placed on modesty and group cohesion in Japanese culture which seemed in direct conflict with speaking up and assertion behaviours promoted in CRM training.¹³

The team who originated CRM re-examined the programme from the lens of cross-cultural psychology. By 1990, cross-cultural studies on pilots were non-existent, but cross-cultural studies had been published on leadership, communication, perceptions of risk, stress and decision-making.¹⁴ In order to quantify the impact of national culture on pilot attitudes researchers surveyed over 15 000 pilots from 23 countries using questions derived from psychologist Hofstede's cultural dimensions framework. Six distinct 'clusters' of countries with similar responses and work values were identified with national differences observed in areas of command, endorsement of rules/procedures and attitudes toward automation.^{15 16}

Educators reappraised CRM with a focus on adaptation to complement national cultural values. Materials now acknowledge differences in national culture and are customised to be compatible with national context.¹⁷ Experts encourage trainers from any background to review available literature on values, communication, conflict resolution, decision-making and organisational behaviour for target national context. This research is then combined with insight from local representatives to create 'culturally congruent' training in order to increase trainee comfort with new

skills. Recommendations on CRM modifications based on country-specific cultural dimension scores are also available.¹⁴

Cross-cultural challenges to CRM training continue to be a focus for the airline industry given the increasing complexity of multinational crews.¹³ In this context, aviation safety experts suggest adding education around general culture theory so that trainees can better acknowledge, anticipate, accept and adapt to tendencies of individuals from other cultural backgrounds. They also advocate for clear organisational standards and policies to reduce ethnocentric biases and increased team training to reinforce organisational standards.¹⁵

LESSONS FROM CROSS-CULTURAL PSYCHOLOGY

Training programmes developed in one culture with positive outcomes in that context do not have sufficient evidence to generalise validity to another culture. While it may be possible to translate the content of training into the language of another culture, it may not be as easy to transfer its validity. There exist cross-cultural variables that challenge the behavioural assumptions of training programmes.

Social psychologists van de Vijver and Leung's theory of equivalence and bias laid the foundation for research in the field of cross-cultural test adaptation.¹⁸ For a psychometric test developed in one culture to be used in another, one must demonstrate its equivalence in the target culture. That is, there needs to be a proper examination and tailoring of the test to ensure it continues to measure what it is purported to measure in the target culture. Similarly, a training programme with proven validity in one culture should be carefully examined before use in a different culture to ensure transferability.

Differences in national culture are highly likely to affect safety culture. The predominant models for exploring national cultures focus on 'shared values', such as Hofstede's cultural dimensions, and the impact of these on shaping behaviour.¹⁹ In air traffic management, countries with high power distance indices had less positive perceptions of safety culture and greater differences in safety culture perception between regular staff and management.²⁰ This suggests the relationship between national and safety culture may be influenced by one's position within an organisation. Power distance and uncertainty avoidance variations between general practitioners from different European countries have also correlated with significant communication style differences.⁴

Alternative cross-cultural models focus on the interplay between 'shared norms' and behaviour. Gelfand *et al* distinguish between tight and loose cultures, where tight cultures have strong social norms that tolerate minimal individual behavioural deviation while loose cultures allow for more tolerance of behaviour deviation.²¹ From this perspective, educators could expect

Table 1 Impact of cultural dimensions on healthcare team training

Cultural dimension	Relevant theories	Description	How dimension can affect healthcare team training
Power distance index (PI)	Hofstede (1980) House <i>et al</i> ²⁵	The extent to which less powerful individuals accept that power is distributed unequally. Based on the perception of the subordinate. A high PI suggests more societal expectation and tolerance of hierarchy.	Team training aims to flatten hierarchies. Subordinates may be more hesitant to raise concerns or contradict a superior. In high PI contexts, advocacy and assertion behaviours can be emphasised as standardised and professional 'skills' or 'tools' rather than personal challenges. Speaking up behaviour should be incentivised and publicly rewarded when appropriate.
Individualism (IND) versus collectivism (COL) Vertical and horizontal individualism/collectivism	Hofstede ²⁶ Triandis and Gelfand ²⁷	Determines if the unit of interest is the individual or the group. IND cultures prefer individual relationships and personal goals. COL prefers interdependent relationship and goals. Triandis further refined Hofstede to distinguish cultures that value equality or hierarchy between groups and individuals.	Cultures that tend towards IND are more independent, seek more individual and less team recognition. Seeking help may be seen as a weakness. Cultures that tend towards COL may be less likely to speak against a member of their team and may prefer group-based rewards. These differences could potentially impact team motivation and feedback/debrief behaviours.
Uncertainty avoidance (UA)	Hofstede (1980) House <i>et al</i> ²⁵	Society's tolerance for ambiguity or uncertain situations. Higher UA contexts are more rule based, believe that there is an objective 'truth'. Lower UA contexts tend towards more acceptance of different thoughts/ideas.	Cultures with high UA tend to be more rule oriented. Rigid systems may be less likely to adopt a preoccupation with failure. Safety culture is not based on rigid 'right vs wrong' approach and promotes the embrace of complexity and listening to all team ideas. High UA contexts may require more instructor-facilitated discussions around complexity and the value of team member perspectives during both class and simulated instructions.
Tight versus loose cultures	Gelfand <i>et al</i> ²¹	Tight cultures have strong social norms that tolerate minimal individual behavioural deviation. Loose cultures allow for more tolerance of individual behaviour deviation.	In a tight cultural context, educators may expect difficulty transferring new behaviours, such as speaking up, when those behaviours deviate from social norms. Trainees may need increased practice/discussion around new skills and sustainability efforts may need reinforcement.
Performance orientation	House <i>et al</i> ²⁵	The degree to which excellent performance and high standards are encouraged and rewarded.	May help establish trainee motivation. High-performance orientation means individual competition and achievement is valued. Low-performance orientation is goal oriented and rewards cooperation.
Future orientation	House <i>et al</i> ²⁵	The degree to which long-term goals and delayed gratification are valued.	In low future orientation scoring contexts, educators may need to provide more evidence of short-term gains as part of their sustainability plan to continue momentum after training.
Low context versus high context	Hall ²²	Low-context cultures tend to communicate in more direct ways whereas high-context communication is more indirect and implicit.	Any difference that impacts communication style between individuals would be important for training programmes that aim for communication clarity. Awareness of this would likely benefit multicultural teams. High-context countries may need increased training on communication techniques that reduce ambiguity, such as CUS words (concerned/uncomfortable/safety issue) and the two-challenge rule.

PI, power distance index.

difficulty transferring new behaviours, such as speaking up, when those behaviours deviate from social norms in a tight context. Hall distinguished between high and low-context cultures.²² Low-context cultures tend to communicate information in a direct, explicit and precise way. High-context cultures rely on implicit and indirect ways of communication. [Table 1](#) highlights different examples of cross-cultural values and shared

norms, referred to as dimensions, and how each could impact healthcare team training. It is important to note that while models of national culture seek to inform generalities about the norms, attitudes and shared values of a group, they should never be used to define any individual within a group.

Cross-cultural programme adaptation is already embraced in the public health sector where

Table 2 Staged model of cultural adaptation for team training initiatives in healthcare

Stage	Aim	Tools/strategies	Example activities
Assess construct equivalence	To explore manifestations and understanding of the main training topic(s) in the target culture and how it differs from the culture of origin.	<ul style="list-style-type: none"> ▶ Review literature on training topic, especially data available within target context. ▶ Quantitative and qualitative surveys of target groups with focus on perceptions and ideas around training topics. ▶ Analyse manifestation differences of relevant themes between context of origin and target context. ▶ Review any relevant published adaptations of initiative or similar initiatives. 	<ul style="list-style-type: none"> ▶ Review initiative context of origin and development. ▶ Identify relevant investigations of training topic in target culture. ▶ Assess differences in relevant cultural dimensions in origin and target contexts. ▶ Survey team members about their understanding of relevant terms (ie, 'safety culture') and solicit behavioural examples.
Preliminary content adaptation	To develop a preliminary adapted version of the programme by strengthening areas of the curriculum where relevant construct gaps were identified.	<ul style="list-style-type: none"> ▶ Prepare a construct equivalence report of relevant topics. ▶ Draft adapted initiative. ▶ Preserve core elements of original intervention unless evidence suggests dropping element. ▶ Track curriculum adaptations when needs assessment and gap analysis suggests benefit. ▶ Translate and back translate. ▶ Collect feedback on adaptations from target context stakeholders and potential trainees. 	<ul style="list-style-type: none"> ▶ Aggregate information gathered and input from stakeholders/trainees about construct definitions between the two cultures. ▶ Add classroom or simulated activities to reinforce behaviours in high PI or tight culture environments. ▶ Early review of adapted materials by target community members.
Preliminary adaptation pilot	To train educators to deliver the adapted training programme while soliciting input from them to ensure applicability of the amended curriculum.	<ul style="list-style-type: none"> ▶ Train-the-trainer models of curriculum delivery are preferred. ▶ Pilot to small audience within target context. ▶ Allow time for revision before wide dissemination. ▶ Explicit discussion of the adapted material for validation purposes. ▶ Engage participants in the assessment of what was changed to gather data on the effectiveness as well as solicit input for additional amendments. 	<ul style="list-style-type: none"> ▶ Establishing a safety culture in the target group may require different behavioural mechanisms. For example, calling out physicians on mistakes may be problematic in a high power index culture. Solicit input during the pilot about what may work better OR whether an alternative proposal would work better.
Final content adaptation and trial	To implement adapted curriculum, review implementation challenges and revise curriculum as needed.	<ul style="list-style-type: none"> ▶ Add information collected from the pilot into the final version of the programme. ▶ Gather qualitative and quantitative data on curriculum effectiveness and challenges. ▶ Disseminate information on initiative adaptation and effectiveness. 	<ul style="list-style-type: none"> ▶ Perform focus groups or structured interviews of early participants to ensure training transfer. ▶ Publish adapted curriculum along with analysis of adaptations based on needs assessment and outcomes.

evidence-based interventions are often applied across different populations. Several staged models to guide adaptation of programmes have been independently developed with considerable overlap. Most models include stages on data gathering, preliminary adaptation design, adaptation testing and adaptation trials. Many examples of stage implementation are available and the studies of their implementation and effectiveness are highly supported in public health.²³

ACCOUNTING FOR CULTURE

Drawing from the experiences above, we propose a proactive framework to promote cultural congruency when team training initiatives use curricula originating outside the target cultural context. Proposed stages, aims, strategies and implementation examples can be found in [table 2](#).

First, the role of national culture must be acknowledged during the development of any team training initiative with the emphasis that no one culture is wrong. Desired safety behaviours should be framed as a set of tools to achieve safe patient care rather than 'correct' behaviour. Regional variations in norms

and values should also be acknowledged within any national context.

Educators must perform a data-driven cultural assessment that examines differences in relevant curricular themes between origin and target contexts. It is not sufficient to measure the gap within an organisational context to tailor a training programme; it is also critical to examine construct equivalence and its behavioural manifestation between cultures. This includes both quantitative and qualitative analyses to capture a deeper understanding of how relevant concepts, such as safety culture, manifest behaviourally in the target culture. During this assessment, target culture perceptions on values such as power distance, uncertainty avoidance and individualism should be explored at all levels within the organisation and compared with assumptions made by training programmes. An examination of shared norms can help predict how new behaviours may be received in the target context and could increase training transfer by informing messaging and sustainability efforts. Cultural assessment data and programme adaptations should be targets for wider dissemination.

Practical recommendations to account for culture include curriculum piloting, train-the-trainer initiatives and incorporating simulation-based practice. Just as in staged adaptation models of public health initiatives, curriculum piloting allows participants and educators to identify translation errors and assess training for cultural congruency over multiple stages.²⁴ Initiatives that first develop local trainers have the advantage of piloting the adapted curriculum and leverage the cultural insight of trainers during further adaptation and implementation. In this model, any education consultants from different cultural backgrounds should act as curriculum facilitators rather than instructors. Simulation-based application of new skills allows for practice, feedback and discussion in a facilitated space. Issues sensitive to cultural influence, such as communication and hierarchy, can be identified and discussed in a low-stakes setting.

Given the inherent methodological difficulties of cross-cultural research, it is not generally feasible to design randomised controlled trials to investigate the impact of national culture on safety training initiatives. Like in aviation, healthcare educators must adopt an 'action research' approach where programme implementation occurs simultaneously with data collection.¹⁴ Research on curriculum replication in different cultural contexts should focus on adaptation, outcomes and validation in different settings.

CONCLUSION

As healthcare organisations worldwide focus their attention on improving safety and quality through team training, understanding the interplay between national culture and team dynamics has become increasingly important. Educators must be aware of national culture trends that affect domains relevant to patient safety. We hope that by acknowledging and incorporating the values of different cultures into team training, we can create more effective interventions and better patient care. This work can also inform the increasing complexities of working on multinational teams, which are ever-growing in healthcare.

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REFERENCES

- Weaver SJ, Lubomski LH, Wilson RF, *et al.* Promoting a culture of safety as a patient safety strategy: a systematic review. *Ann Intern Med* 2013;158:369–74.
- Weaver SJ, Dy SM, Rosen MA. Team-training in healthcare: a narrative synthesis of the literature. *BMJ Qual Saf* 2014;23:359–72.
- King H, Battles J, Alonso A ES. *TeamSTEPPS: team strategies and tools to enhance performance and patient safety*. Rockville, MD: Agency for Healthcare Research and Quality, 2008.
- Meeuwesen L, van den Brink-Muinen A, Hofstede G. Can dimensions of national culture predict cross-national differences in medical communication? *Patient Educ Couns* 2009;75:58–66.
- Elmonsri M, Almashrafi A, Banarsee R, *et al.* Status of patient safety culture in Arab countries: a systematic review. *BMJ Open* 2017;7:e013487.
- Fujita S, Seto K, Ito S, *et al.* The characteristics of patient safety culture in Japan, Taiwan and the United States. *BMC Health Serv Res* 2013;13:20.
- Alonso A, Baker DP, Holtzman A, *et al.* Reducing medical error in the military health system: how can team training help? *Human Resource Management Review* 2006;16:396–415.
- Baker DP GS, Beaubien J. Medical teamwork and patient safety: the evidence-based relation, 2005. Available: <http://www.ahrq.gov/research/findings/final-reports/medteam/index.html>
- Baker JB DP, King H. *New insights about team training after a decade of TeamSTEPPS*. Rockville, MD: Agency for Healthcare Research and Quality, 2017.
- Wu W-T, Wu Y-L, Hou S-M, *et al.* Examining the effects of an interprofessional Crew resource management training intervention on perceptions of patient safety. *J Interprof Care* 2016;30:536–8.
- Salas E, Weaver SJ, DiazGranados D, *et al.* Sounding the call for team training in health care: some insights and warnings. *Acad Med* 2009;84:S128–31.
- Haerkens MHTM, Kox M, Noe PM, *et al.* Crew resource management in the trauma room: a prospective 3-year cohort study. *Eur J Emerg Med* 2018;25:281–7.
- Metscher D, Smith M, Alghamdi A. Multi-Cultural factors in the Crew resource management environment: promoting aviation safety for airline operations. *JAAER* 2009;18.
- Helmreich RL, Merritt AC. *Culture at work in aviation and medicine*. 1st Edition. London: Routledge, 2001: 336 p.
- Helmreich R, Merritt A, Sherman P SG. The flight management attitude questionnaire 1993.
- Merritt A. Culture in the cockpit: do Hofstede's dimensions replicate? *J Cross Cult Psychol* 2000;31:283–301.
- Helmreich RL, Merritt AC, Wilhelm JA. The evolution of Crew resource management training in commercial aviation. *Int J Aviat Psychol* 1999;9:19–32.
- deVijver van, Leung K. Methods and Data Analysis of Comparative Research.. In: *Handbook of cross-cultural Psychology*. 1 and 2 edn. Boston: Allyn & Bacon, 1997.
- Hofstede G. *Cultures and organizations: software of the mind*. New York, NY: McGraw-Hill, 2010.
- Tear MJ, Reader TW, Shorrock S, *et al.* Safety culture and power: interactions between perceptions of safety culture, organisational hierarchy, and national culture. *Saf Sci* 2020;121:550–61.

- 21 Gelfand MJ, Raver JL, Nishii L, *et al.* Differences between tight and loose cultures: a 33-nation study. *Science* 2011;332:1100–4.
- 22 Hall ET. *Beyond culture*. Garden City, NY: Anchor Press, 1976.
- 23 Barrera M, Castro FG, Strycker LA, *et al.* Cultural adaptations of behavioral health interventions: a progress report. *J Consult Clin Psychol* 2013;81:196–205.
- 24 Jeong H-J, Pham JC, Kim M, *et al.* Major cultural-compatibility complex: considerations on cross-cultural dissemination of patient safety programmes. *BMJ Qual Saf* 2012;21:612–5.
- 25 House R, Javidan M, Hanges P, *et al.* Understanding cultures and implicit leadership theories across the globe: an introduction to project globe. *Journal of World Business* 2002;37:3–10.
- 26 Hofstede G. National cultures in four dimensions: a research-based theory of cultural differences among nations. *Int Stud Manag Organ* 1983;13:46–74.
- 27 Triandis HC, Gelfand MJ. Converging measurement of horizontal and vertical individualism and collectivism. *J Pers Soc Psychol* 1998;74:118–28.

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