EXAMINING THE INFLUENCE OF POWER DISTANCE ON PSYCHOLOGICAL SAFETY WITHIN HEALTHCARE TEAMS

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Cultivating good teamwork practices within healthcare teams is important for providing effective patient care and preventing adverse health outcomes. Psychological safety is one factor which is instrumental in developing a positive team environment, which fosters effective teamwork. The historically hierarchical nature of healthcare ascribes status to individuals based on profession, and this power differential is a contributing factor to a team member's psychological safety. This study seeks to identify relationships between cultural backgrounds and teamwork in healthcare through examining how power distance influences psychological safety within healthcare teams. A cross-sectional questionnaire containing the Psychological Safety Scale and the Personal Cultural Orientation Scale was fielded to sets of Internal medicine teams working in a health system located in the Midwest region of the United States (n=17). Levels of power-distance and psychological safety were similar amongst leaders and their team members. Upon comparison, there was no correlation found between power distance and psychological safety. Moderate to significant correlations were found between other deep cultural constructs.

INTRODUCTION

Patient care is increasingly reliant on healthcare teams which require the collaboration of individuals from varying professional backgrounds, including physicians, nurses, and therapists, to provide care. Teamwork plays an important role in the prevention of adverse outcomes in patient care, with poor team dynamics directly impacting the rate of medical errors (Nembhard & Edmondson, 2006). To achieve safe and effective care, the individuals who comprise healthcare teams must be able to work well together, interacting with one another in a manner which allows for the successful integration of individual expertise and efficient communication.

Historically, healthcare settings have been hierarchical in nature, ascribing status to individuals on the basis of their profession, discipline, and scope of practice. For instance, physicians have had more status than nurses, who have more status than physical therapists, and so on (Nembhard & Edmondson, 2006). These internalized power differences can originate from how medicine is both taught and practiced (Cosby & Croskerry, 2004), resulting in a climate where individuals with less power are marginalized. In interdisciplinary contexts, teamwork can be hindered by this hierarchy as team members with less authority feel less comfortable sharing their expertise with others. For example, some nursing staff may hesitate to participate in interprofessional rounds and report anxiety around offering necessary non-medical perspectives (Reeves et al., 2009). The resulting breakdown in communication and teamwork between team members impacts the overall functioning of the team as well as its success in achieving shared goals.

The power differential established within healthcare teams can also be a contributing factor in the level of psychological safety experienced by team members. Psychological safety is a quality which is instrumental in the development of effective teamwork (Gregory et al., 2021). It refers to the amount of comfort that members of the team have with speaking up, asking questions, and voicing their concerns, without fearing negative consequences. With increased levels of psychological safety, individuals are more likely to admit errors and challenge their superiors in the event that a mistake can either be prevented or has already occurred.

In any group of people where such power disparity is present, the cultural dimension of *power distance* becomes a factor influencing team performance. Power distance is defined as the extent to which unequal power distributions within a group are accepted by individuals with less power. This component can be influenced by an individual's cultural background, as cultures can be characterized on the basis of how much power distance is considered acceptable.

Power distance is one of six cultural dimensions initially established by Geert Hofstede as a method of defining the culture on a national level. Cultures with higher power distances are more accepting of inequality between leaders and their subordinates, often expecting that subordinates follow orders without question. In contrast, cultures with lower power distances are more uncomfortable with inequality and prefer equality among all the members of a group.

When the cultural diversity present within a team is taken into consideration, it can be seen that teamwork processes are impacted by varying conceptualizations of what a team is, with distinctions arising from cultural differences (Feitosa et al., 2012). The implications of this with respect to medical teams relate to how power distances can influence team dynamics and thus impact the quality of patient care. As identified in Stevens et al. review of literature, power disparities have negative effects on team collaboration, decision-making, communication, and overall team performance (Stevens et al., 2021).

The objective of this research is to determine to what extent an individual's level of power distance influences how psychologically safe they feel as part of their healthcare team. The study examines what impact the expected power distance of the leader of a team has on the psychological safety of the entire team and how differing levels of expected power distance within a team influence the team's psychological safety. This will be accomplished through the analysis of a survey data from a cross-sectional questionnaire on psychological safety and personal cultural orientations.

METHOD

As the purpose of this research is exploratory, a cross-sectional, survey-based design method was used to explore the relationship(s) between psychological safety and deep cultural constructs. Participants were invited to complete a survey over a total of three data collection cycles which took place from January 2021 to April 2021. Surveys were disseminated to Internal Medicine teams working in a health system located in the Midwest region of the United States. The teams were predetermined and comprised of faculty physicians, senior resident physicians, junior resident physicians, and pharmacists. All materials were reviewed and approved by the Internal Review Board at University of Illinois at Chicago (Protocol #2020-1414).

Survey development

The study employed a survey leveraging previously validated metrics of deep cultural constructs and psychological safety. The psychological safety of team members was assessed using the Psychological Safety scale developed by Dr. Amy Edmondson (Edmondson, 1999). To measure each individual's level of power distance, the Personal Cultural Orientation Scale developed by Dr. Piyush Sharma (Sharma, 2010) was utilized. In this scale, Hofstede's original cultural dimension of Power Distance is further divided into two sub-constructs assessing the degree of inequality accepted within a society and the extent that power disparity is accepted, respectively titled Social Inequality and Power Distance. Other sub-constructs which were measured by the Personal Cultural Orientation scale include Independence, Interdependence, Risk Aversion, Ambiguity Intolerance, Masculinity, Gender Equality, Tradition, and Prudence. Responses were limited to a 7-point Likert-scale: (1) *Very Strongly Agree*, (2) *Strongly Agree*, (3) *Agree*, (4) *Neither Agree nor Disagree*, (5) *Disagree*, (6) *Strongly Disagree*, (7) *Very Strongly Disagree.*

In addition to these questions, demographic data on gender, age, country of birth, country of citizenship, race/ethnicity, religious affiliation, and number of years living in the United States of America were collected. These questions were asked to obtain key information about the individual differences between individuals on a singular healthcare team. These differences can help in ruling out potential effects due to gender, age, etc., which is necessary given that this is a cross-sectional study. The data assisted in the consideration of systematic reasons that participants may not have responded to the survey and inform potential biases within the data. Additionally, having this data increases the ability to speak to the generalizability of the study.

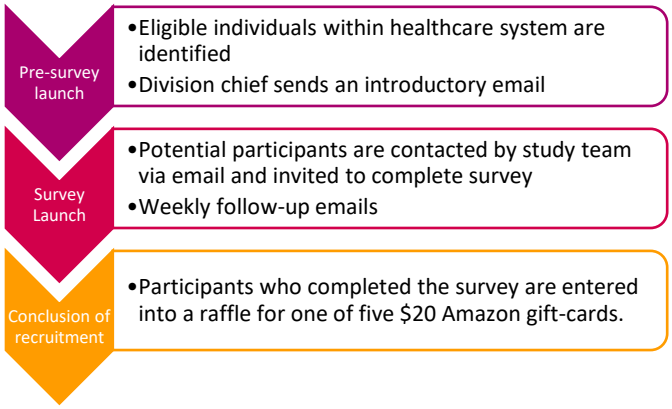

Figure 1. **Schematic diagram of study recruitment process**

Selection and Recruitment

Individuals who provide healthcare as part of a healthcare team and are employed within a particular health system in the Midwest were eligible for participation. Subjects were recruited by the principal investigator and faculty sponsor. Prior to recruitment, all eligible individuals were sent an introductory email informing them that the study team would be directly reaching out in the future. This step was taken to increase visibility and response rate. Within three days of the introductory email, potential participants were invited via email to complete the survey, which was hosted on Qualtrics. If no response was received, up to two follow-up emails were sent on a weekly basis. Respondents who partially completed surveys were sent a separate follow up email a week after they began the survey.

Participants were provided with a detailed study description, potential risks and benefits, and other relevant information. As participants took the survey online, the risks involved are those associated with typical use of the internet. The survey was accessible only after consent to participation was acquired. Participants could elect to withdraw their data from the study at any point in time. Upon completion of the survey, participants were entered into a raffle for one of five $20 Amazon gift cards. Overall, a total of 81 participants were contacted to be recruited as part of our overall sample. This number was limited by the amount of funding available for providing incentives (see Figure 1).

Data Analysis

Once responses were received, team units were established to facilitate data analysis at the team level. All responses were de-identified and associated with a study-generated identification number. Incomplete responses were excluded from analyses. Data from the psychological safety survey was reversed scored when necessary. Data from both the psychological safety survey and the personal cultural orientation survey were aggregated to the dimension and survey

level(s); the scores for all related responses were averaged (Table 1).

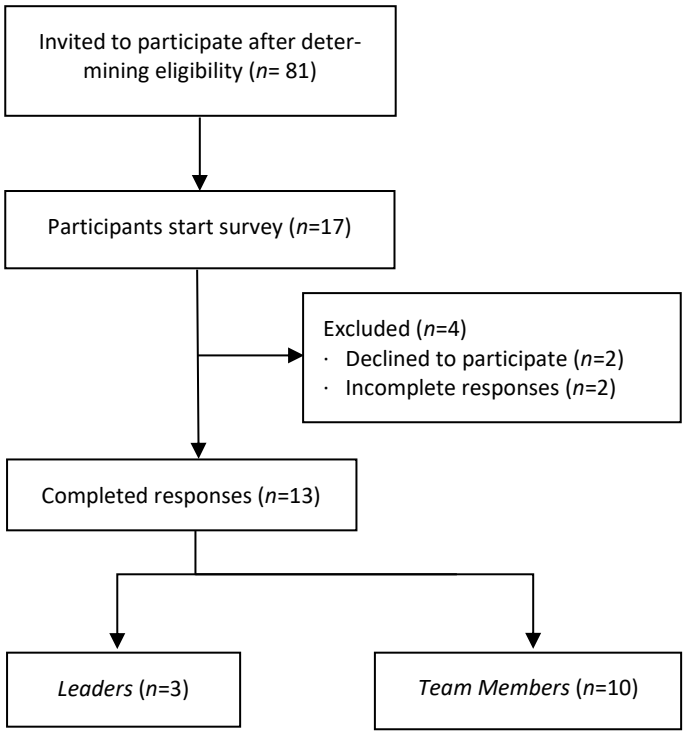

***Figure 2*. Recruitment Flow Diagram**

Descriptive statistics of the data to characterize respondent demographics were run; further, descriptive statistics and response rates were examined to test statistical assumptions prior to use of parametric test(s) and inferential statistics (e.g., t-tests). Depending on distribution of data and statistical power based on response rate(s), the study team conducted appropriate statistical tests including but not limited to: Pearson correlations, mean differences, and Wilcoxins' tests (non-parametric with low sample sizes) to satisfy study objectives prior to analysis.

RESULTS

In total, 81 individuals were contacted as eligible participants. With 17 responses were received, the resulting response rate was 21%. Among these, 13 complete responses from consenting individuals were retained. From the completed responses, 8 individuals identified as male, and 5 individuals identified as female. To compare psychological safety and power distance between leaders and team members, participant responses were dichotomized using the following distinction(s): Participants who held the role of *Physician/Faculty* were designated as *Leaders* and the remaining members of the team (*Pharmacists, Residents, Interns)* were *Team Members* (see Figure 2). Based on the data collected, the statistical analyses conducted included correlation matrices and non-parametric tests. A Wilcoxin ranked-sum test indicated that survey responses from Leaders and Team Members did not differ to a statistically significant extent in perceptions of psychological safety and personal cultural orientation (W= 62, p = 0.90). An overall homogeneity in responses was observed. Weak and non-significant Pearson correlations were found between psychological safety and each of the 10 Personal Cultural Orientation constructs. As seen in Table 2, correlations at the 0.05 significance level were found between the following cultural sub-constructs: RSK and TRD, MAS and GEQ, and PRU and GEQ.

Table 1
Aggregated scores from Psychological Safety Scale and Personal Cultural Orientation Scale

	Team Member (*n*=10)	**Leader (*n*=3)**	**Total (*n*=13)**
Psychological Safety (PS)	2.33 ± 0.60	2.61 ± 0.54	2.4 ± 0.58
Independence (IND)	3.23 ± 0.75	3.5 ± 0.43	3.29 ± 0.68
Interdependence (INT)	2.25 ± 0.41	2.58 ± 0.52	2.33 ± 0.44
Power Distance (POW)	4.02 ± 0.77	4.25 ± 0.43	4.08 ± 0.7
Social Inequality (IEQ)	5.33 ± 0.85	4.83 ± 0.29	5.21 ± 0.78
Risk Aversion (RSK)	4.07 ± 0.54	4.25 ± 0.66	4.12 ± 0.55
Ambiguity Intolerance (AMB)	4.33 ± 0.85	3.92 ± 1.01	4.23 ± 0.86
Masculinity (MAS)	4.4 ± 1.05	4 ± 0	4.31 ± 0.93
Gender Equality (GEQ)	1.88 ± 0.62	2 ± 0.9	1.9 ± 0.65
Tradition (TRD)	3.45 ± 1.23	3.67 ± 0.76	3.5 ± 1.12
Prudence (PRU)	2.15 ± 0.43	2.5 ± 0.433	2.23 ± 0.44

Note: Data are shown as mean ± standard deviation

The results of the psychological safety survey (Figure 3) also showed homogeneity in responses. For each statement, responses indicated either positive psychological safety or neutrality, with one exception. Only for the survey item, *It is difficult to ask other members of this team for help*, did responses indicate a lack of psychological safety. There were individuals who both strongly agreed and very strongly agreed with this statement. Overall, the respondents from this set of healthcare teams have shown they experience a psychologically safe work environment.

DISCUSSION

The success of health care teams is integral to the safe and effective provision of patient care; these successes depend upon the quality of collaboration and teamwork between members of the team. With the ever-increasing diversity of cultural backgrounds represented by members on healthcare teams, understanding the cultural orientations of each member can provide insight into individual conceptualizations of factors that impact teamwork, such as power distance.

As a result, this study seeks to explain how varying cultural backgrounds can influence teamwork in healthcare teams. This study directly measured the level of psychological safety and perceived power distances in healthcare teams to examine relationships between them. While no significant cor-

relations were found between power distance and psychological safety as a result of this work, there remains scope for future development. Psychological safety has a direct impact on the likelihood of medical errors being reported (Gregory et al., 2021). In general, mistakes which have been made are often attributed to interactions between team members. Increasing power distances are negatively related to the intention to report medical errors, and this relationship is mediated by psychological safety (Appelbaum et al., 2016). Thus, understanding more about the factors which influence team psychological safety will provide insight into how to address cultural differences on the topic of power distance to advocate for a more inclusive environment in which all team members feel comfortable sharing their opinions and reporting medical errors.

A possible explanation for the homogeneity of responses observed in this study is that the surveys were disseminated in a teaching hospital, which ideally cultivates a psychologically safe environment. Other limitations include the fact that individuals from this sample may not share the same qualities or values as non-responders at this site. However, respondents were seen to share similar cultural values, including views towards masculinity, gender equality, and power distance. If further investigation is conducted across geographic areas, varying results may be expected. Limitations for this study include that individuals who responded to the survey may not share the same qualities or values as non-responders from this site. If further investigations are conducted across differing geographic areas, varying results may be expected. Another consideration is that the survey was launched during the COVID-19 pandemic, which may have impacted the response rate.

No research to-date has conducted this kind of evaluation, specifically, analyzing the influence of varying perceptions of power distance on psychological safety. Through this project, we are increasing awareness and understanding of the factors that impact team performance, establishing a path for future practices that are targeted towards increased collaboration and communication between team members on the basis of addressing power distance and psychological safety. The results of this research are directed towards both healthcare practitioners and academia, with the intention that the knowledge generated will contribute to improving the quality of patient care through an increased understanding of healthcare team dynamics.

CONCLUSION

This study found high levels of psychological safety and similarities in respondents' deep cultural constructs. As such, significant correlations between expected power distance and the level of psychological safety experienced by members of a healthcare team were undetected. Understanding the impact of deep cultural constructs on how individuals operate within healthcare teams has potential for improving team dynamics and the provision of safe patient care. Future work can build upon these efforts by testing psychological safety levels in interprofessional care team settings.

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Figure 3. **Psychological Safety Survey Results**

Table 2

Pearson Correlation Matrix

	PS	IND	INT	POW	IEQ	RSK	AMB	MAS	GEQ	TRD	PRU
PS	1.00										
IND	-0.12	1.00									
INT	0.17	0.30	1.00								
POW	0.08	-0.19	-0.07	1.00							
IEQ	-0.03	-0.55	-0.05	0.40	1.00						
RSK	-0.23	0.38	-0.39	0.29	-0.28	1.00					
AMB	0.19	-0.03	-0.11	0.38	0.04	0.36	1.00				
MAS	-0.45	-0.07	0.12	-0.37	0.44	-0.26	-0.08	1.00			
GEQ	0.41	0.19	0.19	0.09	-0.43	-0.17	0.02	**-0.68	1.00		
TRD	-0.10	0.25	0.03	0.17	0.05	**0.63	0.31	0.11	-0.55	1.00	
PRU	0.31	0.09	0.09	-0.01	-0.51	0.01	0.00	-0.46	**0.71	-0.46	1.00

** significant at 0.05 level