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TRANSFORMATIONAL LEADERSHIP AND KNOWLEDGE HIDING AMONG HEALTHCARE PROFESSIONALS: EVIDENCE FROM TEACHING HOSPITALS IN PAKISTAN

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Abstract

Background: *Knowledge hiding is the deliberate withholding of sought-after knowledge and can impede coordination, learning and healthcare provision. Leadership and the psychosocial climate can influence the healthcare workers' willingness and safety in sharing of knowledge related to work.*

Purpose: *The aim of this study was to (1) investigate the relationship between transformational leadership and knowledge hiding among healthcare professionals in teaching hospitals in Peshawar, Pakistan, and (2) examine the moderation effect of organisational safety in the relationship between transformational leadership and knowledge hiding. A quantitative, cross sectional survey was done among 353 House Officers and Trainee Medical Officers from Lady Reading Hospital, Khyber Teaching Hospital, Hayatabad Medical Complex. Proportional Stratified sampling was used. There were 12 items measuring transformational leadership that were adapted from the Multifactor Leadership Questionnaire, 14 items measuring knowledge hiding that were adapted from the Knowledge Hiding Scale, and 7 items measuring organisational safety that were adapted from Edmondson's psychological safety scale. Descriptive statistics, reliability/validity assessment, ordinary least-squares regression, hierarchical moderation analysis, and structural equation modelling were used to analyse data. The results indicated that there was a negative relationship between transformational leadership and knowledge hiding ($\beta = -0.18$, $p = .003$; $R^2 = .08$ for the reported model). The transformational-leadership-by-organisational-safety interaction was negative and significant ($\beta = -0.10$, $t = -3.12$, $p = .002$), suggesting that the negative association was stronger at the higher levels of perceived organisational safety. A consistent interaction estimate (standardised $\beta = -0.11$, $p = .004$) was found in the structural model. There was also a negative direct relationship between organisational safety and knowledge hiding (standardised $\beta = -0.14$, $p = .014$).*

Conclusion: *Results suggest that the transformational leadership constructs were negatively associated with knowledge hiding among the trainee doctors in the sample and the relationship was stronger under the condition of psychological safe work site. Healthcare organisations need to combine leadership development with concrete actions that foster trust, fairness, voice, and safe sharing of knowledge. Cross-sectional, self-reported data don't provide*

causal information.

1. Introduction

The effective sharing of knowledge is crucial to the quality of service, patient safety and good clinical outcomes for healthcare organisations operating in complex and highly interdependent professional environments. Whether it's doctors, nurses, or other healthcare workers, they constantly need to access information and knowledge from other professionals to make informed clinical decisions, coordinate treatment, monitor patient progress, and ensure continuity of care. Communication of relevant knowledge in healthcare is crucial because of the dynamic nature of healthcare delivery, and incomplete or delayed information could lead to poor clinical coordination and affect the efficacy of healthcare services. In such contexts, employees' readiness to share their know-how is a major factor on which the efficacy of the organisation depends. The importance of knowledge sharing is acknowledged, but sometimes employees are actively avoiding to share their knowledge with colleagues, which can hinder collaboration, organisational learning and professional development. This phenomenon, known as "knowledge hiding", is a key challenge for organisations and one which should be given specific attention in healthcare organisations. Knowledge hiding is when an individual deliberately tries to hide or avoids the sharing of knowledge that they have been asked to share by another individual (Connelly et al., 2012). Knowledge hiding is different from general knowledge non-sharing, which can be result of forgetfulness, limited awareness or no opportunity to share knowledge, since knowledge hiding is a reaction to a request for knowledge. Connelly et al (2012) found three main aspects of this behaviour: evasive hiding, playing dumb, and rationalised hiding. Evasive hiding is when someone gives disinformation or agrees to give information at some future time without any intention of doing so. Playing dumb is pretending you don't have the information they ask for and rationalised hiding is withholding the information by giving reasons, like 'Confidentiality' or 'Organisational restrictions'. These behaviours can have a detrimental impact on relationship dynamics, the quality of work relationships and the sharing of valuable organisational knowledge. However, there is a crucial distinction to be made between the illegitimate concealment of knowledge and legitimate limitations on the disclosure of information. Ethically and professionally all healthcare professionals have a duty to keep sensitive patient data safe and to adhere to confidentiality. Hence, legitimate protection of confidential information should not always be taken as a sign of knowledge hiding due to personal interest and defensive behaviour. This work deals with knowledge hiding as a construct operationalised by Knowledge Hiding Scale. Another key organisational element that might affect employee willingness to share knowledge and collaborate with others is leadership. Specifically, the concept of transformational leadership has garnered a good amount of attention due to its ability to inspire positive employee attitudes, improve interpersonal relationships, and foster commitment to the organisation. Transformational leaders inspire their employees with a shared vision, stimulate them intellectually, show idealised influence and provide them with individualised consideration (Bass & Avolio, 1995). These actions can foster a workplace culture where employees feel appreciated, respected, and empowered to share their expertise and knowledge. Within healthcare settings, where collaboration is especially essential, transformational leadership could motivate healthcare workers to set up collective goals over their own and foster better relationships with colleagues. Defensive behaviours related to withholding information may be reduced as a result of leaders who acknowledge the contribution of their employees, invest in their professional development, and encourage them to think outside the box. Social exchange theory can also be used to understand the potential connection between transformational leadership and knowledge hiding. Blau (1964) states that relationships between people are built up through exchanges, which could include an exchange of favor, where positive

behavior is rewarded with positive behavior. Cropanzano and Mitchell (2005) also emphasized the significance of social exchange theory in the study of the relationships and behaviours of employees in the workplace. Supportive leadership, fair treatment, and recognition of efforts can foster among healthcare workers a heightened sense of responsibility within their organisation and towards their peers. These reciprocities can foster collaboration, trust, and information sharing, and diminish the need to knowingly keep professional information secret. Likewise, a high quality leader-member exchange in which the leader is respected, trusted and obligated to the member can increase member's intentions to perform constructive behaviours at work (Dulebohn et al, 2012). Therefore, transformational leadership can play a role in decreasing the occurrence of knowledge hiding by creating positive interpersonal relationships and promoting employees' active involvement in collective knowledge sharing. However, leadership can have a significant impact on employee behaviour which depends largely on the wider organisational context. Employees may not feel comfortable talking openly even if leaders display supportive and transformational behaviours if their workplace is seen as threatening, unfair or unsupportive. This may deter people from disseminating information and voicing their opinions because of fears of criticism, professional embarrassment, blame, discrimination or other adverse consequences. Psychological safety is also a valuable notion since it means that everyone in the team believes that it is safe to take interpersonal risks, such as voicing input, posing questions, stating problems or concerns, and admitting errors (Edmondson, 1999). A psychologically safe work environment can help to open communication, promote professional development and enhance collaboration between healthcare workers. Organisational safety also offers a valuable context within which to examine the relationship between leadership behaviours and employee outcomes. By providing employees with a supportive organisational safety environment, it can help ensure that they feel confident that their work will be respected, and that sharing relevant knowledge won't put them at unnecessary work or interpersonal risk. In favourable organisational safety conditions, transformational leadership could foster greater trust among employees, sharing of professional knowledge, and cooperative activities. On the other hand, an unfavourable safety climate can be a dampener for the positive effect of transformational leadership, as it may persist unsafe perceptions, vulnerabilities, and the potential negative outcomes. Organisational safety, then, could be considered as a contextual factor that will influence how effectively transformational leadership decreases knowledge-hiding behaviour. It is important to note that although organisational safety and psychological safety are similar, the former is a broader context of safety as explored in this study, while the latter is related to the psychological risk of employees within their team(s). While previous studies have studied organizational phenomena such as leadership, knowledge management and workplace behaviour from different perspectives, more research is needed to shed light on the relationship between transformational leadership and knowledge hiding under different organizational safety situations. This connection is especially significant in the context of healthcare organizations, where the interdependence of professionals and swift information sharing around patient care are essential for the provision of effective services. Furthermore, understanding these relationships in the context of non-Western organisations could help to gain further insights into the effects of leadership and workplace context on knowledge-related behaviours within different institutional settings. A healthcare system under development can have unique challenges to overcome regarding knowledge exchange due to organisational, professional relationships, and workplace conditions. In light of these issues in research, the present study aims to explore the relationship between transformational leadership and knowledge hiding among trainee doctors of three major teaching hospitals of Peshawar, Pakistan. The study aims to explore the perceptions and work experiences of health care staff and find out if there is a correlation between a

transformational leader and a lower prevalence of knowledge-hiding. Moreover, it explores the moderating effect of organisational safety to determine whether a conducive safety environment can enhance the negative link between transformational leadership and knowledge hiding. This research takes a leadership and organisational safety perspective which adds to the understanding of organisational context that may support knowledge sharing and reduce intentional knowledge hiding in healthcare organisations.

1.1. Research Objectives and Hypotheses

The present study was designed to achieve two primary objectives:

To examine the relationship between transformational leadership and knowledge hiding among healthcare professionals working in teaching hospitals.

To investigate the moderating role of organisational safety in the relationship between transformational leadership and knowledge hiding.

Based on the theoretical arguments and research objectives, the following hypotheses were formulated:

H1: Transformational leadership is negatively associated with knowledge hiding.

H2: Organisational safety moderates the relationship between transformational leadership and knowledge hiding, such that the negative association between transformational leadership and knowledge hiding is stronger when organisational safety is higher.

2. Literature Review and Theoretical Foundation

2.1. Transformational leadership and knowledge hiding

Transformational leadership is a combination of idealised influence, inspirational motivation, intellectual stimulation and individualised consideration (Bass & Avolio, 1995). These actions can help staff feel that the working group's goals are more important than their own short-term interests, that the way things are done isn't always the best way, and that they are supported when it comes to their professional growth. In this knowledge-based activity, those same circumstances can be conducive to communication and to a feeling of not having to keep information in order to gain a personal benefit. Trust, interpersonal competition, fear of exploitation and status or job security issues can lead to knowledge hiding. It involves evasive hiding, playing dumb, and rationalised hiding – withholding, saying that it's by the rules, confidential, or giving some other reason (Connelly et al., 2012). Motivations for these behaviours can be lowered by leadership that creates trust and fosters collaboration. Supportive leadership can induce reciprocity and build up cooperative response, which is based on social exchange theory (Blau, 1964; Cropanzano & Mitchell, 2005). Previous studies have related leadership and workplace conditions to the KM behaviours and studies on knowledge hiding have highlighted a variety of antecedents and consequences of knowledge hiding behaviours (Anand et al., 2020, 2022; Oubrich et al., 2021). Based on this, the present study predicted that transformational leadership will have a negative relationship with knowledge hiding.

2.2. Organisational safety as a moderator

In the present study, organisational safety encompasses employees' perceptions of interpersonal security, trust and the opportunity to speak up or for help without being shamed or retaliated against. It is conceptually related to the psychological safety as described by Edmondson (1999). A psychologically safe environment can diminish interpersonal risks of asking questions, admitting uncertainty, and sharing knowledge. Transformational leaders can convey that knowledge sharing is important, but the impact of such messages can be undermined by unfair treatment, discouraged voice, and punished mistakes in organisational systems. If safety is high, leadership can be more supportive and more likely to be heard, and employee can be more willing to "return the favour" by sharing knowledge requested of them. When safety is low, employees might still be able to protect themselves by withholding even when their immediate supervisors exemplify transformational behaviours. As such, organisational safety was hypothesized to

strengthen the negative relationship between transformational leadership and knowledge hiding.

2.3. Theoretical perspectives

The study is based mainly on Social Exchange Theory (SET), which in a work context can be used to explain how supportive relationships can create reciprocities (Blau, 1964; Cropanzano & Mitchell, 2005). Trust, respect and relationship quality between leaders and subordinates is also an important consideration in Leader–Member Exchange theory (Dulebohn et al., 2012). The Knowledge-Based View is a view that considers knowledge as a valuable resource for an organisation, and thus the implications of blocking the flow of knowledge are highlighted (Grant, 1996). A motivational approach is offered by Self-Determination Theory, which states that feelings of autonomy, competence and relatedness facilitate feelings of intrinsic motivation (Deci & Ryan, 1985; Gagné & Deci, 2005). These perspectives imply that certain aspects of leadership behaviour and a safe work climate could influence employees' choices to reveal or withhold the knowledge they are asked to share.

3. Materials and Methods

3.1. Study design and setting

The study was of cross-sectional survey design with quantitative approach. The data was gathered from the trainee doctors who were working in three teaching hospital at Peshawar Khyber Pakhtunkhwa, Pakistan namely Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), Hayatabad Medical Complex (HMC). House Officers (HOs) and Trainee Medical Officers (TMOs) working in these hospitals were the study population.

3.2. Population, sample, and sampling

A total of 2,988 trainee doctors in the three hospitals (1,120 at LRH, 850 at KTH and 1,018 at HMC). To determine the sample size, Yamane's method as cited in the thesis was used, and then proportionate stratified sampling was done with 353 samples. The sample allocation was 133 participants from LRH (37.7%), 100 from KTH (28.3%), and 120 from HMC (34.0%)

Hospital	Population	Sample	Share of sample
Lady Reading Hospital (LRH)	1,120	133	37.7%
Khyber Teaching Hospital (KTH)	850	100	28.3%
Hayatabad Medical Complex (HMC)	1,018	120	34.0%
Total	2,988	353	100%

A total of 100% of the 353 questionnaires distributed were returned with all filled out and used in analysis. The respondents included 170 (48.2%) House Officers and 183 (51.8%) Trainee medical Officers.

3.3. Measures and instrument

Data were gathered with a structured questionnaire consisting of closed questions on a five-point Likert scale. The instrument comprised of three main constructs: Transformational leadership (12 items adapted from MLQ, Bass & Avolio, 1995). Knowledge hiding: 14 items adapted from Connelly et al.'s (2012) Knowledge Hiding Scale, including evasive, playing dumb and rationalised hiding. Organisational safety: seven items based on Edmundson's (1999) Psychological Safety Scale measuring the cues for trust, interpersonal safety and raising issues or asking for assistance. The questionnaire was physically given, participation was voluntary, responses were anonymous and confidential, and participants were told the purpose of the study and their right to withdraw.

3.4. Data analysis

SPSS version 24 and AMOS version 25 were used to analyse the obtained data. The data on the study variables and respondents characteristics were subjected to descriptive statistics. Cronbach's alpha and composite reliability were used to examine the internal consistency. The measurement model, with regard to convergent and discriminant validity and model fit, was assessed using confirmatory

factor analysis. The direct relationship between transformational leadership and knowledge hiding was tested by ordinary least-squares regression, with gender, age, designation and education as the control variables. Moderation by organisational safety was tested by using hierarchical regression. The hypothesized paths were also reported by means of structural equation modelling. For the moderation analysis, transformational leadership and organisational safety were mean centred prior to computing an interaction term. The dependent variable was knowledge hiding. The analysis was carried out in steps from a controls only step to the addition of the two predictors to the interaction term.

3.5. Ethical considerations

The participants were told the purpose of the research, confidentiality, that they were to participate voluntarily and that they could withdraw from the study. It went without saying that there was no personal information provided in the analysis, nor did it intend to use the data for personal reasons. The thesis states that it was approved by an institution, but the approval body and the reference number should be included in the body of the thesis before being submitted to a journal.

4. Results

4.1. Respondent characteristics

There were 353 trainee doctors in the final sample. There were 181 men (51.3%) and 172 women (48.7%). Respondents aged 20–30 years accounted for 122 participants (34.6%), those aged 31–40 years for 105 (29.7%), and those aged 41 years or older for 126 (35.7%). House Officers accounted for 48.2% of the sample while Trainee Medical Officers accounted for 51.8%.

Characteristic	Category	n	%
Gender	Male	181	51.3
	Female	172	48.7
Age	20–30 years	122	34.6
	31–40 years	105	29.7
	41 years and above	126	35.7
Designation	House Officer	170	48.2
	Trainee Medical Officer	183	51.8
Qualification	MCPS	60	17.0
	MBBS	72	20.4
	FCPS-I	72	20.4
	IMM	71	20.1
	FCPS-II	78	22.1

4.2. Descriptive statistics and correlations

Transformational leadership, organisational safety, and knowledge hiding, measured on a 5-point response scale had means of 3.85 (SD = 0.57), 3.78 (SD = 0.60), and 2.95 (SD = 0.63), respectively. The bivariate correlation matrix revealed that there was a negative relationship between transformational leadership and knowledge hiding ($r = -0.27$, $p < .01$); a positive relationship between transformational leadership and organisational safety ($r = 0.32$, $p < .01$); and a negative relationship between organisational safety and knowledge hiding ($r = -0.24$, $p < .01$).

Variable	Items	Mean	SD	Minimum	Maximum
Transformational leadership	12	3.85	0.57	2.10	4.98
Knowledge hiding	14	2.95	0.63	1.40	4.80
Organisational safety	7	3.78	0.60	2.00	4.96

4.3. Reliability and validity

High internal consistency was found for all three constructs. The Cronbach's alpha of transformational leadership, knowledge hiding and organisational safety were 0.98, 0.99 and 0.97 respectively. The composite reliability values were 0.97, 0.98 and 0.96, respectively. The AVE values for transformational leadership, knowledge hiding, and organisational safety were 0.78, 0.82, and 0.76, respectively. The thesis reported item loading ranges of 0.71–0.93, 0.75–0.95, and 0.68–0.90, respectively.

Construct	Items	Cronbach's α	Composite reliability	AVE	Loading range
Transformational leadership	12	0.98	0.97	0.78	0.71–0.93
Knowledge hiding	14	0.99	0.98	0.82	0.75–0.95
Organisational safety	7	0.97	0.96	0.76	0.68–0.90

The measurement model was reported to show acceptable fit: $\chi^2/df = 1.98$, CFI = 0.97, TLI = 0.96, RMSEA = 0.045, and SRMR = 0.038. The results of the Fornell–Larcker criterion and HTMT ratios were used to measure the discriminant validity. The reported HTMT ratios were 0.072 for transformational leadership–knowledge hiding, 0.117 for transformational leadership–organisational safety and 0.096 for knowledge hiding–organisational safety.

4.4. Preliminary diagnostics

No missing values on the 33 measurement items. All univariate z scores were less than ±3.29. Three cases were detected by Mahalanobis distance but were not eliminated since Cook's distance values were less than 0.05. The reported Breusch–Pagan test was not significant (p = .48), and multicollinearity diagnostics were not outside of acceptable ranges (VIF values ranged from 1.08 to 1.22 for the main predictors and interaction). The first factor accounted for 23% of variance and the full-collinearity VIF values were between 1.32 and 2.15.

4.5. Direct association between transformational leadership and knowledge hiding

Hypothesis 1 predicted that there would be a negative relationship between transformational leadership and knowledge hiding. Gender, age, designation and education were used as covariates in the OLS model. The model explained 8% of the variance in knowledge hiding ($R^2 = 0.08$; $F(5, 347) = 6.03$, $p < .001$). Transformational leadership was a significant negative predictor ($\beta = -0.18$, SE = 0.06, $t = -3.00$, $p = .003$, 95% CI [−0.30, −0.06]). So, the hypothesis that perceived transformational leadership was negatively related to reported knowledge hiding was confirmed (H1).

Predictor	β	SE	t	p	95% CI
Transformational leadership	−0.18	0.06	−3.00	.003	[−0.30, −0.06]
Gender (female; ref. male)	0.03	0.04	0.75	.455	[−0.05, 0.11]
Age (years)	−0.01	0.01	−1.00	.318	[−0.01, 0.00]
Designation (TMO; ref. HO)	0.04	0.04	1.00	.318	[−0.04, 0.12]
Education (coded 1–5)	0.01	0.02	0.50	.617	[−0.03, 0.05]

4.6. Moderating role of organisational safety

Hypothesis 2 predicted that organisational safety will further negatively moderate the relationship between transformational leadership and knowledge hiding. The control variables were entered in the first step of the hierarchical regression followed by transformational leadership followed by organisational safety and their interaction. At Step 2, transformational leadership ($\beta = -0.15$, $t = -3.32$, $p = .001$) and organisational safety ($\beta = -0.08$, $t = -2.03$, $p = .043$) were both negatively associated with knowledge hiding. The interaction term was negative and

statistically significant at Step 3 (β = −0.10, t = −3.12, p = .002). In other words, the negative relationship between transformational leadership and knowledge hiding got more robust when the organisational safety got higher, which led to H2.

Step / predictor	ΔR²	β	t	p
Step 1: controls	—	—	—	—
Step 2: transformational leadership	0.06	−0.15	−3.32	.001
Step 2: organisational safety	—	−0.08	−2.03	.043
Step 3: transformational leadership	0.03	−0.12	−2.80	.005
Step 3: organisational safety	—	−0.06	−1.72	.086
Step 3: TL × organisational safety	—	−0.10	−3.12	.002

A consistent pattern was seen in the structural equation model. A negative and significant standardized path from transformational leadership to knowledge hiding was obtained (β = −0.19, SE = 0.06, CR = −3.22, p = .001). Organisational safety also had a negative direct path to knowledge hiding (β = −0.14, SE = 0.06, CR = −2.45, p = .014). The interaction path was negative and significant (β = −0.11, SE = 0.04, CR = −2.91, p = .004). The structural model fit indices were $\chi^2/df = 2.04$, CFI = 0.96, TLI = 0.95, RMSEA = 0.047, and SRMR = 0.041.

Structural path	Standardised β	SE	CR / z	p	Decision
Transformational leadership → knowledge hiding	−0.19	0.06	−3.22	.001	Significant
Organisational safety → knowledge hiding	−0.14	0.06	−2.45	.014	Significant
TL × organisational safety → knowledge hiding	−0.11	0.04	−2.91	.004	H2 supported

5. Discussion

This study explored the question of whether or not a positive relationship exists between transformational leadership and knowledge hiding among trainee doctors in three teaching hospitals in Peshawar and the role of organizational safety in modifying this relationship. There were two major conclusions. Firstly, there was a negative relationship between transformational leadership and knowledge hiding. Second, the transformational leadership and organizational safety relationship was also negative and statistically significant, suggesting that the negative relationship is stronger where respondents perceived higher levels of organizational safety. The negative association between transformational leadership and knowledge hiding is in line with the conception that leadership influences the norms of the workplace by role modelling, encouraging, intellectually stimulating and providing individual support. If leaders work together and treat other people's knowledge as valuable, knowledge sharing can be seen as a shared cooperative effort, and not a threat to an individual's position. This interpretation fits well with the principles of social exchange theory, in which supportive relationships foster reciprocity and co-operation (Blau, 1964; Cropanzano & Mitchell, 2005). It is also aligned with studies that have shown leadership and workplace relationships to be important determinants of knowledge-management behavior (Anand et al., 2020, 2022; Oubrich et al., 2021). The moderation result is a contextual qualification. There were significant positive correlation between transformational leadership and low levels of knowledge hiding at the higher levels of organizational safety. It seems plausible that an openness to risk taking amongst people is likely to be more credible when the broader work environment demonstrates openness and collaboration. Healthcare professionals can feel more at ease asking questions, accepting uncertainty and

providing requested information in a psychologically safe environment. Even the influence of supportive leaders can be curtailed by fear of negative impact, unfairness or blame where safety is weak. This is in keeping with Edmondson (1999) and the social exchange theory of trust and reciprocity. In the structural model, knowledge hiding was also found to be negatively directly associated with organizational safety. This implies that safety can be both an understanding and a workplace attribute that reduces knowledge hiding per se. But this study is a cross-sectional one, and it is impossible to determine the direction of influence. Said another way, teams with more knowledge sharing might also feel safer and teams with safer perceptions might also share more knowledge. The descriptive results reveal that the average score of transformational leadership and organizational safety were higher than the midpoint of the 5-point scale and the average score of knowledge hiding was close to the midpoint of the 5-point scale. This reveals that in an environment where leadership and safety are relatively well perceived knowledge hiding can still be present. The results thus indicate that a combined, not just a single factor approach, is necessary: leadership development needs to be complemented by a focus on the overall interpersonal and organizational climate.

6. Practical Implications

The results have a number of implications for hospital administration, clinical supervision and human-resource managers. Develop transformational leadership skills. Leadership development should enhance inspirational motivation, intellectual stimulation, role modelling and individualised consideration of clinical supervisors and departmental heads. • Make psychological safety operational. Hospitals can promote staff to speak up, seek help, talk about errors in an open manner and question unsafe practices without embarrassment or repercussions. Structured Knowledge Exchange Support. Ongoing clinical handoffs, case conferences across disciplines, mentoring, and easy-to-access knowledge stores can provide regular opportunities for professionals to share relevant knowledge.

• Ensure formal policies are consistent with leadership messages. Confidentiality rules and access controls should be upheld and maintained however, should not be used as an excuse not to provide information that is clearly required by other staff members in order to provide care for patients.

• Monitor workplace climate. Regular audits with staff can help to pinpoint areas where a lack of trust, a reluctance to 'speak up' or knowledge hiding can be impacting collaboration.

7. Limitations and Future Research

There are some caveats to the results. First, it is a cross sectional design and so it captures perceptions at one moment in time and is not able to determine causal relationships. Future research using a longitudinal or intervention approach could be conducted to investigate how change in leadership and psychological safety lead to change in knowledge hiding. Second, the study was based on self-reported questionnaire data which could be subject to social desirability, recall and common method influences despite the diagnostic checks reported in the thesis. Future research may involve employee and peer surveys, supervisor assessments, observing handover activities, or other suitable measures. Third, it was a sample of three teaching hospitals of a city in Pakistan and included House Officers (HOs) and Trainee Medical Officers (TMO's). The results cannot necessarily be extrapolated to other health care providers, hospitals, regions, or health care systems. Replication in other provinces, healthcare professions (nurses, pharmacists, allied health professionals, consultants) and public and private hospitals would enhance the external validity. Fourth, the study used an overall knowledge-hiding score. Future research might focus on whether there are different relationships between transformational leadership and organisational safety and between the two types of hiding, evasive and rationalized. Finally, future research could examine other contextual factors like organisational justice, workload, professional

hierarchy, team climate and perceived job security.

8. Conclusion

Transformational leadership style had negative effect on knowledge hiding among 353 trainee doctors from three teaching hospitals of Peshawar. Organisational safety was also negatively related to knowledge hiding and mediated the negative relationship between transformational leadership and knowledge hiding. Based on these results, knowledge hiding reduction in healthcare should not be solely targeted at leadership behaviour. They should also create a setting where workers can feel safe, valued and supported to share their knowledge. Since the data are self-reported and cross-sectional, the data cannot be interpreted as causal effects, but rather as associations.

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