Journal of Healthcare Leadership Dovepress

Open Access Full Text Article ORIGINAL RESEARCH

# The Impact of Leader–Member Relationships on Team Effectiveness Through Speaking Up and Silence: A Cross-Sectional Study in Rural Chinese Hospitals

Hujie Wang[1], Martina Buljac-Samardzic[1], Jeroen David Hendrikus van Wijngaarden[1], Joris van de Klundert[1,2]

[1]Erasmus School of Health Policy & Management, Erasmus University Rotterdam, Rotterdam, the Netherlands; [2]School of Business, Universidad Adolfo Ibáñez, Santiago, Chile

Correspondence: Hujie Wang, Erasmus School of Health Policy & Management, Erasmus University Rotterdam, Burgemeester Oudlaan 50, Rotterdam, 3062PA, the Netherlands, Email wang@eshpm.eur.nl

**Introduction:** Although the importance of leader–member relationships in teamwork is acknowledged in literature, a deeper understanding of this relationship is lacking, especially in rural areas. The impact of leader–member relationships on team outcomes is especially important in rural Chinese hospitals as improving teamwork forms a national health reform priority in these hospitals. This study investigates how leader-member relationships (ie leader-member perceived similarity and power distance orientation) influence team outcomes (ie perceived quality of care and job satisfaction) via speaking up and silence.

**Methods:** An online questionnaire was completed by 1017 team members (ie doctors, nurses and other healthcare professionals) of 300 teams in four rural Chinese hospitals in October 2022. The questionnaire measured leader-member perceived similarity, power distance orientation, speaking up, silence, perceived quality of care, job satisfaction and control variables. Multilevel mediation analysis was conducted to test the hypotheses.

**Results:** Leader–member perceived similarity and power distance orientation are positively related to speaking up ($\beta$=0.61, $p$<0.01; $\beta$=0.17, $p$<0.01 respectively) and to silence ($\beta$=0.41, $p$<0.01; $\beta$=0.63, $p$<0.01 respectively). Speaking up is positively related to the perceived quality of care ($\beta$=0.24, $p$<0.01; $\beta$=0.46, $p$<0.01) and job satisfaction ($\beta$=0.30, $p$<0.01; $\beta$=0.54, $p$<0.01), while the impact of silence is not significant. Finally, speaking up mediates the associations of both leader-member perceived similarity and power distance orientation with perceived quality of care ($\beta$=0.15, $p$<0.01; $\beta$=0.08, $p$<0.01 respectively) and job satisfaction ($\beta$=0.30, $p$<0.01; $\beta$=0.54, $p$<0.01 respectively).

**Conclusion:** Speaking up, rather than silence, contributes to team functioning by mediating the impact of leader–member relationships to team outcomes. Hospital management may therefore seek to stimulate speaking up by focussing on leader-member relationships: increasing leader-member similarity and promoting members' power distance orientation. However, any unintended effect of increased silence through these leader–member relationships is an important area of future research, which can adopt multidimensional models of speaking up and silence.

**Keywords:** leader-member relationship, leader-member perceived similarity, power distance orientation, speaking up, silence

## Introduction

Leader–member relationships have received much attention in the research into team functioning and leadership in healthcare (and other industries) across the globe, including rural areas in developing countries in recent decades.[1–4] The two relational aspects leader-member perceived similarity and power distance orientation are impactfully present in rural Chinese hospitals, where most employees are locals who share cultural and living backgrounds and develop close interpersonal relationships with their colleagues, including the leaders.[5] This localised characteristic may drive

Received: 16 March 2024
Accepted: 21 November 2024
Published: 12 December 2024

employees to perceive their leaders as similar to themselves and cultivate low power distance orientation even though power distance is traditionally high in China.[6,7]

While leader–member perceived similarity and power distance orientation have been linked to employee behaviour and team performance,[8,9] a comprehensive understanding of this relationship is lacking. Derue et al have hypothesised in the Integrated Model of Leader Traits, Behaviours and Effectiveness that leader-member perceived similarity will lead to employee and team effectiveness but were not able to test this relationship and provide evidence.[10] Cornelis et al present a positive relationship between leader-member perceived similarity and team cooperation.[11] Likewise, there is initial evidence suggesting that power distance orientation is negatively related to employee mental health and job satisfaction[12] and might enlarge the leader-member communication gap and reduce employee participation.[13] Nonetheless, the evidence on the roles of leader-member perceived similarity and power distance orientation in team functioning is scarce and mostly from developed countries.

Based on the input-process-outcome framework which is the foundation of many teamwork models in healthcare,[14–16] leader-member perceived similarity and power distance orientation can be seen as two team input elements, which may impact outcomes via team processes. Morrison's review shows that the leader–member relationship and hierarchy are antecedents of speaking up and silence, thus providing theoretical support for causal relationship from the team inputs leader-member perceived similarity and power distance orientation to the team processes speaking up and silence.[17] Speaking up and silence are crucial team processes in hospitals, which are in turn causally related to team outcomes and specifically to quality of care.[18,19] Speaking up and silence are seen as different constructs and can coexist as team members may speak up on some issues while being silent on others.[20,21]

Team outcomes such as quality of care and job satisfaction are typically associated positively with speaking up and negatively with silence.[18,22–24] Accordingly, we propose that the team processes speaking up and silence transmit the impact of the team inputs leader-member perceived similarity and power distance orientation to the team outcomes perceived quality of care and job satisfaction.

These relationships are investigated in rural China as China's rural hospitals have been especially encouraged to improve teamwork.[25] Such rural healthcare settings in developing countries are especially of interest because of the urgency to advance understanding of these relationships for improving teamwork, while empirical evidence is still lacking. The research aim is therefore to investigate the relationships among leader-member perceived similarity, power distance orientation, speaking up, silence, perceived quality of care and job satisfaction in rural Chinese hospitals. China is culturally different from Western contexts where most of the evidence on team functioning stems from and feeds into theory. Moreover, cultural differences are also present within China, for example, between rural and urban China.[26] For instance, rural Chinese citizens tend to have kept the traditional Chinese cultural value "collectivism",[27] while urban Chinese residents have gradually become more individualistic.[28] Such cultural disparities may reduce the validity and generalisability of current evidence for rural China and its 17,555 rural hospitals.[29]

This research addresses the limited understanding of how leader–member relationships influence team outcomes in rural hospitals in developing countries such as China. By strengthening the scientific understanding of teamwork in this setting, it will consequently contribute to an evidence base for similar rural contexts in developing countries, which ultimately serve a significant portion of the global population striving for universal health coverage.

## Hypotheses

Leader-member perceived similarity refers to team members' perceptions of similarity between themselves and team leaders.[30,31] This perceived similarity is related to deep-level psychological attributes such as values, beliefs and attitudes, different from actual similarity, which is based on surface-level demographic characteristics such as age, gender and race.[32] Perceived similarity plays a more important role in leader–member interaction and team functioning than actual similarity.[30,33]

Speaking up is defined as voluntarily expressing ideas, suggestions or opinions about work-related issues with the intention of workplace improvements within teams[17,34] and used interchangeably with voice behaviour.[21,35] Silence refers to withholding ideas or opinions about work-related issues or behaviours that violate personal or moral

standards.[17,34] As mentioned above, speaking up and silence are distinct constructs and can be practiced simultaneously depending on topic.

The similarity attraction theory[36] suggests that team members are more likely to interact with other team members perceived as similar to themselves. More specifically, there is evidence that leader-follower similarity is positively related to employees' voice behaviour[37,38] and (indirectly) negatively related to employees' defensive silence behaviour.[39] Hence, we posit that team members are more likely to express their ideas and less likely to keep silent when they perceive their leaders as similar to themselves.

**Hypothesis 1**: Leader-member perceived similarity is positively related to speaking up, while negatively related to silence.

Power distance orientation refers to the degree of an individual's acceptance of unequal distribution of power among individuals within organisations.[40,41] Based on the cultural dimensions theory,[42] people with high power distance orientation readily accept the fact that power is unequally distributed and believe that decisions made by the people with a higher position should not be questioned. This may promote silence and impede speaking up. Conversely, when team members have a low power distance orientation and believe power should be distributed more equally, they may be less likely to remain silent and more likely to speak up. There is indeed evidence that power distance orientation is negatively related to voice behaviour[43,44] and positively related to employee silence.[45] Thus, we propose:

**Hypothesis 2**: Power distance orientation is negatively related to speaking up, while positively related to silence.

Effective communication in general and speaking up in particular are considered to benefit the quality and safety of care, for example, in case of raising concerns about safety issues.[18,46] Silence and failure in communication can lead to adverse events and threaten patient safety,[23] which will consequently reduce the perceived quality of care. Likewise, speaking up and communication are found to be positively related to job satisfaction,[47,48] while organisational silence drives employees to be less satisfied with their job.[49,50] Moreover, team members who speak up and perceive their opinions are valued and supported by their leaders are more likely to experience a sense of belonging and be satisfied with working on the team.[51] Thus, we propose:

**Hypothesis 3**: Speaking up is positively related to perceived quality of care and job satisfaction.

**Hypothesis 4**: Silence is negatively related to perceived quality of care and job satisfaction.

Altogether, the similarity attraction theory,[36] the cultural dimensions theory[42] and the input-process-outcome teamwork framework[14–16] suggest that the team processes speaking up and silence mediate the effects from the team inputs leader-member perceived similarity and power distance orientation to the team outcomes perceived quality of care and job satisfaction. Team members who perceive their leaders similar to themselves and have a low power distance orientation are more likely to speak up and less likely to stay silent on issues with the quality of care, which may subsequently translate to higher perceived quality of care and job satisfaction. Reasoning along this line, we propose:

**Hypothesis 5**: Speaking up and silence mediate the effect of leader-member perceived similarity on perceived quality of care and job satisfaction.

**Hypothesis 6**: Speaking up and silence mediate the effect of power distance orientation on perceived quality of care and job satisfaction.

The corresponding theoretical model is shown in Figure 1.

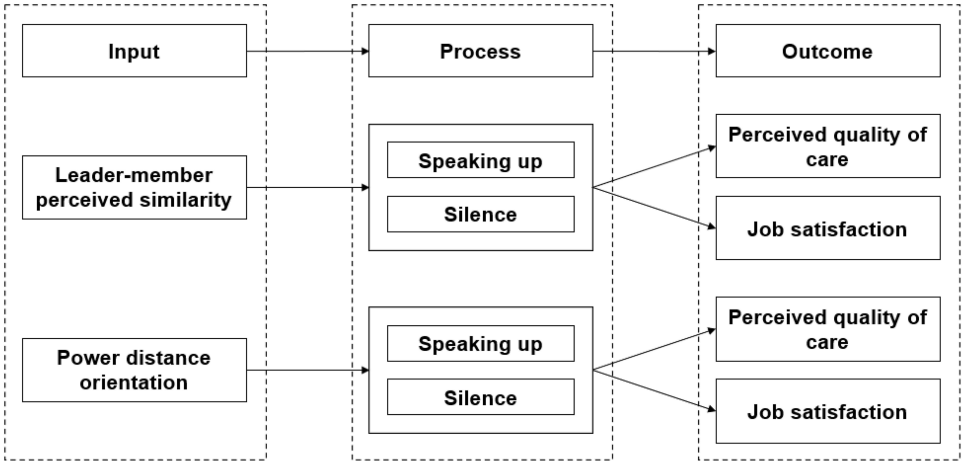


**Figure 1** Theoretical model.

# Methods

## Research Design

A cross-sectional research design was used for this study. An online questionnaire was distributed among healthcare professionals in four Chinese hospitals in the rural area via the Chinese survey platform "Wen Juan Xing" in October 2022. Respondents were asked to participate on a voluntary basis.

## Sample and Procedure

This study was approved by the Research Ethics Review Committee of Erasmus School of Health Policy & Management, Erasmus University Rotterdam (No. ETH2122-0807) and was conducted in accordance with the Declaration of Helsinki. The aim of this study and how the data would be processed and protected were explained to potential respondents in an informed consent form in which they were offered the possibility to ask questions to the first author by email. Respondents explicitly gave their consent before the data collection started. No reminders were sent.

The Health Human Resources Development Centre of the National Health Commission of China and the County Health Media were approached by the researchers to assist in connecting with rural Chinese hospitals. Based on the provided information on the research aim and questionnaire, they connected the researchers to seven rural Chinese hospitals in different provinces that were potentially interested in participating in this study. After the researchers reached out to these seven hospitals, four hospitals, from four different provinces, together employing 3500 employees (including about 1000 doctors and 1700 nurses), agreed to participate.

Respondents were team members, including doctors, nurses and other healthcare professionals, from healthcare teams, which provide direct care for patients. Team leaders were excluded as respondents. The presidents of the four participating hospitals shared the survey link with all team leaders in their hospitals. Then, these team leaders distributed the link to all members within their teams and asked them to complete the questionnaire within three days.

## Measures

All the items of the measurements for each variable are shown in the appendix. A 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to rate the items for measuring leader-member perceived similarity, power distance, speaking up, and silence.

### Leader-Member Perceived Similarity

Liden et al's 6-item measure[30] was used to measure the leader-member perceived similarity (Cronbach's α=0.99).

### Power Distance Orientation

A 6-item measure developed by Dorfman & Howell[52] and adapted by Culpepper & Watts[8] and Lin et al[12] for individual-level measurement was used to measure power distance orientation (Cronbach's α=0.97).

### Speaking up

A 6-item measure developed by Van Dyne and LePine[53] and adapted by Morrison et al[54] was used to measure speaking up (Cronbach's α=0.95).

### Silence

Silence was measured by a 5-item measure developed by Detert and Edmonson[55] and adapted by Guenter et al[56] and Mignonac et al[57] (Cronbach's α=0.94).

### Perceived Quality of Care and Job Satisfaction

Individual perceived quality of care and job satisfaction were assessed by single-item indicator scales,[58,59] respectively, with the value of 1 indicating "very bad" or "very dissatisfied" and the value of 10 indicating "very good" or "very satisfied".

### Control Variables

This study controlled for gender (0=male, 1=female), team tenure and team type (0=monodisciplinary team, 1=multi-disciplinary team) based on previous research.[47,53,54,56] Furthermore, a preliminary analysis was conducted to test the influence of several potential control variables, including birth origin, gender, team tenure, team type, profession and education, on the mediators and dependent variables. The results show that team tenure is significantly positively related to silence, while female and monodisciplinary team members rated perceived quality of care and job satisfaction significantly higher. These results further support the choice for the three control variables.

The standard translation/back-translation technique was used to translate all the measures from English into Chinese.[60] Every participant's average scores per measure were used to form the individual measurements of leader-member perceived similarity, power distance orientation, speaking up and silence.

## Analysis

The data analysis was performed using SPSS 29 and AMOS 28 in the following steps. First, before the main analysis, confirmatory factor analysis was conducted to examine the construct validity of the measured variables. The results show good factor loadings for leader-member perceived similarity, power distance orientation, speaking up, and silence, ranging from 0.72 to 0.97. Therefore, all original items remained included in all measurements. In addition, the four-factor model (in which leader-member perceived similarity, power distance orientation, speaking up and silence are separate factors) shows an acceptable model fit ($\chi^2(224)=1861.62$, $p<0.01$, CFI=0.95, TLI=0.95, RMSEA=0.09, SRMR=0.05) and fits significantly better than a three-factor model, which combines speaking up and silence into one factor ($\chi^2(227)=6978.47$, $p<0.01$, CFI=0.80, TLI=0.78, RMSEA=0.17, SRMR=0.21), a two-factor model, which additionally combines leader-member perceived similarity and power distance orientation into one factor ($\chi^2(229)=14,389.88$, $p<0.01$, CFI=0.58, TLI=0.53, RMSEA=0.25, SRMR=0.29) and the one-factor model combining all four into one factor ($\chi^2(230)=17,582.59$, $p<0.01$, CFI=0.48, TLI=0.43, RMSEA=0.27, SRMR=0.29).

Second, as all the variables were measured at the same time, Harman's single-factor test was conducted to assess the common method bias of this study.[61] The results show that the first extracted factor explains 46.04% of the variances, which is below the 50% threshold,[62,63] Therefore, the common method bias is within an acceptable level. Moreover, variance inflation factors for the control variables, independent variables and mediators were calculated to assess multicollinearity. The results show that the values of variance inflation factors range from 1.01 to 2.14, indicating that there is no serious multicollinearity in the model.[64]

Third, multilevel mediation analysis was used to test the hypotheses. The respondents were nested within teams, resulting in dependency of observations. Moreover, significant between-group variances were found for the dependent variables (ie perceived quality of care and job satisfaction) via the mixed models in SPSS. Therefore, multilevel

mediation analysis with the individual level as level 1 and the team level as level 2 was conducted. In addition, a random effects model was adopted as the intercepts and slopes were expected to vary across teams.[65] This multilevel mediation analysis strengthens the reliability and validity of the findings by separating the individual and team-level analyses and eliminating bias in coefficient estimation.[66]

Four independent multilevel mediation models were created via MLmed macro in SPSS,[67] with leader-member perceived similarity and power distance orientation as separate independent variables, perceived quality of care and job satisfaction as separate dependent variables and speaking up and silence as parallel mediators. The control variables gender and team tenure were level-1 covariates, and team type was a level-2 covariate. As the hypotheses all regard the individual level, all variables were measured at level 1, and the analysis concerns four 1-1-1 multilevel mediation models. To align with the hypotheses, the reporting focuses on level 1 yet also presents level-2 results.[66]

## Results

Questionnaires from 1017 team members of 300 teams (ie 248 monodisciplinary teams and 52 multidisciplinary teams) in the four participating rural hospitals were received. The respondents had an average age of 32.25 years (median: 31.00; standard deviation: 7.95) and an average team tenure of 6.67 years (median: 5.00; standard deviation: 6.19). The proportion of doctors in the respondents (37.95%) is close to that in Chinese hospitals (38.04%), while nurses account for a higher proportion (58.01%) than the national data (44.81%).[29] The demographic characteristics are shown in Table 1.

The correlation analyses show significant strong correlations between leader-member perceived similarity and speaking up ($r$=0.73, $p$<0.01), between power distance orientation and silence ($r$=0.72, $p$<0.01), and between perceived quality of care and job satisfaction ($r$=0.90, $p$<0.01) (Table 2). A significant moderate correlation is also found between speaking up and silence ($r$=0.34, p<0.01).

**Table 1** Demographic Characteristics

| | Number of People (Percentage) |
|---|---|
| ***Gender*** | |
| Male | 204 (20.06%) |
| Female | 782 (76.89%) |
| Prefer not to say | 31 (3.05%) |
| ***Age**** | |
| <=30 | 485 (47.69%) |
| 31–40 | 366 (35.99%) |
| 41–50 | 123 (12.09%) |
| ≥51 | 38 (3.74%) |
| ***Profession*** | |
| Doctors | 386 (37.95%) |
| Nurses | 590 (58.01%) |
| Other healthcare professionals | 41 (4.03%) |
| ***Local or non-local*** | |
| Local | 884 (86.92%) |
| Non-local | 133 (13.08%) |
| ***Education background*** | |
| Master | 23 (2.26%) |
| Bachelor | 717 (70.50%) |
| Lower than bachelor | 277 (27.24%) |
| ***Professional title*** | |
| Senior | 25 (2.46%) |
| Deputy senior | 69 (6.78%) |
| Intermediate | 269 (26.45%) |
| Junior | 654 (64.31%) |

**Note**: * The total number of people per age groups is lower than the number of respondents as there are missing values for age.

**Table 2** Correlation Matrix

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Gender (1=female) | 1.00 | | | | | | | | |
| 2. Team tenure | −0.15** | 1.00 | | | | | | | |
| 3. Multidisciplinary team | −0.03 | −0.02 | 1.00 | | | | | | |
| 4. Leader-member perceived similarity | 0.06 | 0.02 | −0.05 | 1.00 | | | | | |
| 5. Power distance orientation | −0.03 | 0.08* | 0.03 | 0.25** | 1.00 | | | | |
| 6. Speaking up | 0.03 | 0.04 | −0.04 | 0.73** | 0.27** | 1.00 | | | |
| 7. Silence | −0.02 | 0.05 | 0.02 | 0.31** | 0.72** | 0.34** | 1.00 | | |
| 8. Perceived quality of care | 0.15** | −0.09** | −0.09** | 0.37** | 0.00 | 0.34** | 0.06 | 1.00 | |
| 9. Job satisfaction | 0.15** | −0.05 | −0.13** | 0.41** | 0.00 | 0.38** | 0.07** | 0.90** | 1.00 |

**Notes**: *: p<0.05; **: p<0.01.

The results of the multilevel mediation analyses with leader-member perceived similarity and power distance orientation as separate independent variables are shown in Tables 3 and 4, respectively. As stated in the methods section, only level-1 results will be reported to test hypotheses.

Table 3 shows leader–member perceived similarity is significantly and positively associated with speaking up (β=0.61, p<0.01) and silence (β=0.41, p<0.01), partially supporting hypothesis 1. Table 4 shows power distance orientation is significantly positively related to speaking up (β=0.17, p<0.01) and silence (β=0.63, p<0.01), partially supporting hypothesis 2. Speaking up is significantly and positively related to perceived quality of care (β=0.24, p<0.01, independent variable: leader-member perceived similarity; β=0.46, p<0.01, independent variable: power distance

**Table 3** Multilevel Mediation Analyses (Leader-Member Perceived Similarity)

| | Speaking Up | Silence | Perceived Quality of Care | Job Satisfaction |
|---|---|---|---|---|
| ***Fixed effects*** | | | | |
| *Level 1* | | | | |
| Intercept | 2.27** | 1.68** | 5.83** | 5.18** |
| **Leader-member perceived similarity** | 0.61** | 0.41** | 0.27** | 0.27** |
| **Speaking up** | - | - | 0.24** | 0.30** |
| **Silence** | - | - | −0.04 | −0.04 |
| Gender | 0.02 | −0.34 | 0.38* | 0.43** |
| Team tenure | 0.01 | 0.01 | −0.02* | −0.02* |
| *Level 2* | | | | |
| **Leader-member perceived similarity** | 0.62** | 0.42** | 0.33** | 0.41** |
| **Speaking up** | - | - | 0.27* | 0.29** |
| **Silence** | - | - | −0.11* | −0.12** |
| Gender | −0.07 | 0.06 | 0.51** | 0.52** |
| Team tenure | −0.00 | 0.02 | −0.02 | −0.01 |
| Multidisciplinary | −0.03 | 0.17 | −0.21 | −0.39** |
| **Indirect effect - Mediation** | | | | |
| Level 1 – **Speaking up** | - | - | 0.15** | 0.19** |
| Level 1 – **Silence** | - | - | −0.02 | −0.02 |
| Level 2 – **Speaking up** | - | - | 0.16* | 0.18** |
| Level 2 – **Silence** | - | - | −0.05* | −0.05* |
| ***Random effects*** | | | | |
| Intercept | 0.05** | 0.38** | 0.22** | 0.20** |
| Slope (Leader-member perceived similarity ~) | 0.09** | 0.05 | 0.14* | 0.14* |
| Slope (Speaking up ~) | - | - | 0.05 | 0.10 |

**Notes**: *: p<0.05; **: p<0.01. The random slopes of silence to perceived quality of care and job satisfaction are tested as redundant via MLmed macro therefore are not included in the analysis.

**Table 4** Multilevel Mediation Analyses (Power Distance Orientation)

| | Speaking Up | Silence | Perceived Quality of Care | Job Satisfaction |
|---|---|---|---|---|
| ***Fixed effects*** | | | | |
| *Level 1* | | | | |
| Intercept | 5.13** | 1.33** | 5.96** | 5.34** |
| **Power distance orientation** | 0.17** | 0.63** | −0.04 | −0.06 |
| **Speaking up** | – | – | 0.46** | 0.54** |
| **Silence** | – | – | 0.01 | 0.01 |
| Gender | 0.23 | −0.15 | 0.43** | 0.47** |
| Team tenure | 0.00 | −0.00 | −0.02* | −0.02* |
| *Level 2* | | | | |
| **Power distance orientation** | 0.12** | 0.69** | −0.16* | −0.18** |
| **Speaking up** | – | – | 0.56** | 0.65** |
| **Silence** | – | – | 0.05 | 0.06 |
| Gender | 0.06 | 0.19 | 0.52** | 0.53** |
| Team tenure | 0.00 | 0.00 | −0.02 | −0.00 |
| Multidisciplinary | −0.15 | 0.02 | −0.23 | −0.42** |
| **Indirect effect - Mediation** | | | | |
| Level 1 – **Speaking up** | - | - | 0.08** | 0.09** |
| Level 1 – **Silence** | - | - | 0.00 | 0.01 |
| Level 2 – **Speaking up** | - | - | 0.07** | 0.08** |
| Level 2 – **Silence** | - | - | 0.03 | 0.04 |
| ***Random effects*** | | | | |
| Intercept | 0.17** | 0.10* | 0.24** | 0.21** |
| Slope (Power distance orientation ~) | 0.02 | 0.05* | - | - |
| Slope (Speaking up ~) | - | - | 0.19** | 0.24** |

**Notes**: *: p<0.05; **: p<0.01. The random slopes of silence or power distance orientation to perceived quality of care and job satisfaction are tested as redundant via MLmed macro therefore are not included in the analysis.

orientation) and job satisfaction (β=0.30, p<0.01, independent variable: leader-member perceived similarity; β=0.54, p<0.01, independent variable: power distance orientation), while silence has non-significant associations with the two outcomes. The differences in the regression coefficients regarding the relationships between team processes (ie, speaking up and silence) and team outcomes (ie, perceived quality of care and job satisfaction) are due to the influence of including different independent variables (ie, leader-member perceived similarity and power distance orientation) in the models and does not impact the significance. Therefore, the findings support hypothesis 3 but reject hypothesis 4, which also violates the condition of mediation relationships for silence. Accordingly, speaking up plays a significantly positive mediating role in the relationship between leader-member perceived similarity and perceived quality of care (β=0.15, p<0.01) or job satisfaction (β=0.19, p<0.01) and the relationship between power distance orientation and the two outcomes (perceived quality of care: β=0.08, p<0.01; job satisfaction: β=0.09, p<0.01). Thus, hypotheses 5 and 6 are partially supported.

## Discussion

This study investigates the relationships among leader-member perceived similarity, power distance orientation, speaking up, silence, perceived quality of care and job satisfaction in rural Chinese hospitals.

The findings show that healthcare professionals in rural Chinese hospitals are more likely to speak up and keep silent at the same time when they perceive their leaders more similar to themselves and when they have a relatively high power distance orientation. These findings contradict the hypotheses in two ways. First, the positive relationship between power distance orientation and speaking up is opposite to the hypothesis. Interestingly, this finding appears to be at odds with extant scientific literature. Possible explanations may lie in the subtypes of speaking up as distinguished to relate to

different motives: acquiescent, defensive and prosocial speaking up.[21] For example, healthcare professionals with high power distance orientation might express their supportive ideas (ie acquiescent speaking up) to affirm leadership support or express justifications of behaviour out of fear of possible negative consequences (ie defensive speaking up). Such explanations remain hypotheses for further research as the selected instrument did not measure the distinct subtypes of speaking up. Another possible explanation is rooted in a different perspective on the collectivist nature of the Chinese society.[42] Team members with high power distance orientation readily accept the unequally distributed power between leaders and members and might, therefore, feel less responsible for team functioning and outcomes. Hence, these team members can speak their minds more freely. However, team members with low power distance orientation who perceive a shared responsibility may be less outspoken with an eye towards consequences to preserve harmony, which is an important value in the collectivist Chinese culture.[42,68] These possible explanations leave much space for future research to explore the nature of the relationship between power distance orientation and the various forms of speaking up, in relation to outcomes in China's rural hospitals and in other settings with high power distance.

Second, the positive relationship between leader-member perceived similarity and silence also contradicts our hypothesis. Different from the instrument measuring speaking up behaviour within the team,[53,54] the measurement for silence includes several items, which explicitly regard the interaction between a team member and the leader.[55–57] The social identity theory[69] and self-categorisation theory[70] suggest that team members might categorise leaders who are similar to themselves as "ingroups". The concept of "ingroups" facilitates the establishment of close interpersonal relationships and thus may prevent team members from commenting on similar leaders in front of others, which may also be attributed to the Chinese cultural elements "harmony" and "saving face".[68] Conversely, team members may experience less restraint to express their discontent to dissimilar leaders ("outgroups") and therefore be less likely to remain silent with them.

In line with extant literature, speaking up is found to be positively associated with the two outcomes considered, perceived quality of care and job satisfaction. Speaking up is also confirmed to mediate the relationships between team inputs and outcomes. By contrast, the findings do not show a significant relationship between silence and outcomes at the level of individual team members as hypothesised. This might be explained by the difficulty to distinguish whether a silent person is holding back or has no information to share. At the team-level, however, the multilevel models reveal that silence is negatively related to perceived quality of care and to job satisfaction when leader-member perceived similarity is the independent variable. This finding might reveal a downside of "ingroups" causing team members to keep a protective silence with similar leaders because they are "ingroups".[69,70] When team members remain silent on perceived quality of care and job satisfaction, an important relationship between team communication and outcomes is lost.

Morrison's review of research on employee voice and silence in the past decade indeed shows there is limited evidence on the outcomes of silence.[34] Most of the outcomes researched are emotion-related outcomes such as burnout and anger. An exception is Y. Wang & Hsieh's study which finds that individual-level acquiescent silence is negatively related to job satisfaction.[71] Similar to the multidimensionality of speaking up, silence can also be divided into three subtypes: acquiescent, defensive and prosocial silence.[21] Healthcare professionals may, for instance, remain silent to protect anonymity of fellow team members (ie prosocial silence) or to conceal errors made by themselves (ie defensive silence). To provide more evidence on silence, future research can investigate the subtypes of silence and their antecedents and outcomes.

Additionally, there are two other interesting findings. One is the positive correlation between speaking up and silence, which further confirms that they are two distinct constructs rather than a pair of opposite behaviours. The other interesting finding is that healthcare professionals from multidisciplinary teams have lower job satisfaction compared to those from monodisciplinary team, which is especially relevant as multidisciplinary teams are increasingly important in rural Chinese hospitals and elsewhere.

## Limitations

First, this study includes four hospitals and may therefore not depict a representative picture of all rural Chinese hospitals. Second, the response rate is unknown as the exact number of persons that have received the link of the questionnaire is not known. Third, all data were collected with the same type of respondents (ie healthcare professionals)

and methods (ie survey), which may create common source and method biases. Fourth, this study is a cross-sectional study. Therefore, causality of the relationships among the measured variables are not claimed.

## Conclusion

Speaking up plays an important role in improving team outcomes in rural Chinese hospitals, while silence shows a relatively negligible role. Perhaps surprisingly, speaking up and remaining silent can be practiced simultaneously in hospitals teams perceiving high leader-member similarity and with high power distance orientation. Hospitals that reinforce leader–member relationships should be aware of the unintended increased behaviour of silence in teams. Future research might further explore these relationships by focussing on the multidimensional aspects of speaking up and silence and their coexistence. On the positive side, speaking up facilitates a positive impact of leader-member relationships (ie leader-member perceived similarity and power distance orientation) on team outcomes (ie perceived quality of care and job satisfaction).

## Data Sharing Statement

The data that support the findings of this study are available on request from the corresponding author upon reasonable request.

## Ethical Approval and Informed Consent

This study was approved by the Research Ethics Review Committee of Erasmus School of Health Policy & Management, Erasmus University Rotterdam (No. ETH2122-0807). We obtained consent from respondents before data collection.

## Acknowledgments

This study belongs to the first author's PhD project and therefore is part of the first author's PhD thesis entitled "Team functioning in rural Chinese hospitals".[72] We first thank Yun Zhang and Jing Zhou from the Health Human Resources Development Centre of the National Health Commission of China, and Yan'an Wang and Xiaoxiao Wan from the County Health Media for helping connect rural Chinese hospitals. We also thank Wenxing Wang for her participation in the translation/back-translation before data collection. Finally, we show our highest gratitude to the presidents and all the respondents from the 4 rural Chinese hospitals for their support and contributions to this study.

## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting or writing, or substantially revising or critically reviewing the article; have agreed on the journal to which the article will be submitted; gave final approval of the version to be published; and agree to take responsibility and be countable for the contents of the article.

## Funding

This study was supported by the China Scholarship Council (Grant number: 201906160092). This funder has no role in study design, data collection, data analysis, interpretation of data and writing the manuscript.

## Disclosure

The authors report no competing interests in this work.

## References

1. Etges M, Coelho A. Ethical leadership in LTC: from caregivers' customer orientation to senior's satisfaction and well-being. *J Healthc Leadersh*. 2023;15:297–311. doi:10.2147/JHL.S426602
2. Antonakis J, Atwater L. Leader distance: a review and a proposed theory. *Leadersh Q*. 2002;13(6):673–704. doi:10.1016/S1048-9843(02)00155-8
3. Napier BJ, Ferris GR. Distance in organizations. *Hum Resour Manage Rev*. 1993;3(4):321–357.

4. Shemdoe A, Mbaruku G, Dillip A, et al. Explaining retention of healthcare workers in Tanzania: moving on, coming to 'look, see and go', or stay? *Human Resour Health*. 2016;14:2. doi:10.1186/s12960-016-0098-7
5. Wang H, van Wijngaarden J, Buljac-Samardzic M, van de Klundert J. Factors and interventions determining the functioning of health care teams in county-level hospitals in less affluent areas of China: a qualitative study. *Front Public Health*. 2023;11:1082070. doi:10.3389/fpubh.2023.1082070
6. House RJ, Hanges PJ, Javidan M, Dorfman PW, Gupta V, eds.. *Culture, Leadership and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, CA: Sage; 2004.
7. Rockstuhl T, Dulebohn JH, Ang S, Shore LM. Leader-member exchange (LMX) and culture: a meta-analysis of correlates of LMX across 23 countries. *J Appl Psychol*. 2012;97(6):1097–1130. doi:10.1037/a0029978
8. Culpepper RA, Watts L. Measuring cultural dimensions at the individual level: an examination of the Dorfman and Howell (1988) scales and Robertson and Hoffman (1999) scale. *Acad Strateg Organ Leadersh J*. 1999;3(1):22–34.
9. Huang X, Iun J. The impact of subordinate–supervisor similarity in growth-need strength on work outcomes: the mediating role of perceived similarity. *J Organ Behav*. 2006;27(8):1121–1148. doi:10.1002/job.415
10. Derue DS, Nahrgang JD, Wellman NE, Humphrey SE. Trait and behavioral theories of leadership: an integration and meta-analytic test of their relative validity. *Pers Psychol*. 2011;64(1):7–52. doi:10.1111/j.1744-6570.2010.01201.x
11. Cornelis I, Van Hiel A, De Cremer D. Birds of a feather: leader-follower similarity and procedural fairness effects on cooperation. *Eur J Work Organ Psychol*. 2011;20(3):388–415. doi:10.1080/13594321003630055
12. Lin W, Wang L, Chen S. Abusive supervision and employee well-being: the moderating effect of power distance orientation. *Appl Psychol*. 2013;62 (2):308–329. doi:10.1111/j.1464-0597.2012.00520.x
13. Khatri N. Consequences of power distance orientation in organisations. *Vision*. 2009;13(1):1–9. doi:10.1177/097226290901300101
14. Dietz AS, Pronovost PJ, Mendez-Tellez PA, et al. A systematic review of teamwork in the intensive care unit: what do we know about teamwork, team tasks, and improvement strategies? *J Crit Care*. 2014;29(6):908–914. doi:10.1016/j.jcrc.2014.05.025
15. Körner M, Bütof S, Müller C, Zimmermann L, Becker S, Bengel J. Interprofessional teamwork and team interventions in chronic care: a systematic review. *J Interprof Care*. 2016;30(1):15–28. doi:10.3109/13561820.2015.1051616
16. Lemieux-Charles L, McGuire WL. What do we know about health care team effectiveness? A review of the literature. *Med Care Res Rev*. 2006;63 (3):263–300. doi:10.1177/1077558706287003
17. Morrison EW. Employee voice and silence. *Annu Rev Organ Psychol Organ Behav*. 2014;1:173–197. doi:10.1146/annurev-orgpsych-031413-091328
18. Okuyama A, Wagner C, Bijnen B. Speaking up for patient safety by hospital-based health care professionals: a literature review. *BMC. Health Serv Res*. 2014;14:61. doi:10.1186/1472-6963-14-61
19. Szymczak JE. Infections and interaction rituals in the organisation: clinician accounts of speaking up or remaining silent in the face of threats to patient safety. *Sociol Health Illn*. 2016;38(2):325–339. doi:10.1111/1467-9566.12371
20. Sherf EN, Parke MR, Isaakyan S. Distinguishing voice and silence at work: unique relationships with perceived impact, psychological safety, and burnout. *Acad Manag J*. 2021;64(1):114–148. doi:10.5465/amj.2018.1428
21. Van Dyne L, Ang S, Botero IC. Conceptualizing employee silence and employee voice as multidimensional constructs. *J Manag Stud*. 2003;40 (6):1359–1392. doi:10.1111/1467-6486.00384
22. Burris ER, Detert JR, Romney AC. Speaking up vs. being heard: the disagreement around and outcomes of employee voice. *Organ Sci*. 2013;24 (1):22–38. doi:10.1287/orsc.1110.0732
23. Henriksen K, Dayton E. Organizational silence and hidden threats to patient safety. *Health Serv Res*. 2006;41(4p2):1539–1554. doi:10.1111/j.1475-6773.2006.00564.x
24. Lee WR, Kang SW, Choi SB. Abusive supervision and employee's creative performance: a serial mediation model of relational conflict and employee silence. *Behav Sci*. 2022;12(5):156. doi:10.3390/bs12050156
25. World Bank, World Health Organization. Healthy China: deepening health reforms in China: building high-quality and value-based service delivery; 2019. Available from: https://documents1.worldbank.org/curated/en/690791553844042874/pdf/Building-High-Quality-and-Value-Based-Service-Delivery.pdf. Accessed November 20, 2023.
26. Ann TW, Wu Y, Zheng B, Zhang X, Shen L. Identifying risk factors of urban-rural conflict in urbanization: a case of China. *Habitat Int*. 2014;44:177–185. doi:10.1016/j.habitatint.2014.06.007
27. Wang X, Tu M, Yang R, Guo J, Yuan Z, Liu W. Determinants of pro-environmental consumption intention in rural China: the role of traditional cultures, personal attitudes and reference groups. *Asian J Soc Psychol*. 2016;19(3):215–224. doi:10.1111/ajsp.12142
28. Shi C, Hu B. Preferences for formal social care in rural and urban China: evidence from a national survey. *J Gerontol Soc Work*. 2020;63 (1–2):19–40. doi:10.1080/01634372.2019.1709246
29. National Health Commission. [The statistical bulletin of the development of health services in China in 2022]; 2023. Available from: http://www.nhc.gov.cn/cms-search/downFiles/9b3fddc4703d4c9d9ad399bcca089f03.pdf. Accessed November 20, 2023.
30. Liden RC, Wayne SJ, Stilwell D. A longitudinal study on the early development of leader-member exchanges. *J Appl Psychol*. 1993;78(4):662–674. doi:10.1037/0021-9010.78.4.662
31. Turban DB, Jones AP. Supervisor-subordinate similarity: types, effects, and mechanisms. *J Appl Psychol*. 1988;73(2):228–234. doi:10.1037/0021-9010.73.2.228
32. Wolfram HJ, Mohr G. Transformational leadership, team goal fulfillment, and follower work satisfaction: the moderating effects of deep-level similarity in leadership dyads. *J Leadersh Organ Stud*. 2009;15(3):260–274. doi:10.1177/1548051808326595
33. Abu Bakar H, McCann RM. Workgroup diversity: surface-level actual similarity and deep-level perceived similarity in leader-member relationship communication. *Corp Commun*. 2018;23(1):35–50. doi:10.1108/CCIJ-03-2017-0012
34. Morrison EW. Employee voice and silence: taking stock a decade later. *Annu Rev Organ Psychol Organ Behav*. 2023;10:79–107. doi:10.1146/annurev-orgpsych-120920-054654
35. Greenberg J, Edwards MS, eds.. *Voice and Silence in Organizations*. Bingley: Emerald Group Publishing; 2009.
36. Byrne DE. *The Attraction Paradigm (Ser. Personality and Psychopathology, 11)*. New York: Academic Press; 1971.
37. Afsar B, Shahjehan A. Linking ethical leadership and moral voice: the effects of moral efficacy, trust in leader, and leader-follower value congruence. *Leadersh Organ Dev J*. 2018;39(6):775–793. doi:10.1108/LODJ-01-2018-0015

38. Weber TJ, Avey JB. Speaking up when values are aligned: manager value congruence and the mediating role of employee voice. *Balt J Manag*. 2019;14(4):578–596. doi:10.1108/BJM-10-2018-0345
39. Erkutlu H, Chafra J. Leader narcissism and defensive silence in higher education: a moderated mediation model of interactional justice and value congruence. *Res Educ Adm Leadersh*. 2020;5(2):586–620.
40. Clugston M, Howell JP, Dorfman PW. Does cultural socialization predict multiple bases and foci of commitment? *J Manage*. 2000;26(1):5–30.
41. Farh JL, Hackett RD, Liang J. Individual-level cultural values as moderators of perceived organizational support–employee outcome relationships in China: comparing the effects of power distance and traditionality. *Acad Manag J*. 2007;50(3):715–729. doi:10.5465/amj.2007.25530866
42. Hofstede G. Culture and organizations. *Int Stud Manag Organ*. 1980;10(4):15–41.
43. Botero IC, Van Dyne L. Employee voice behavior: interactive effects of LMX and power distance in the United States and Colombia. *Manag Commun Q*. 2009;23(1):84–104. doi:10.1177/0893318909335415
44. Guo Y, Zhu Y, Zhang L. Inclusive leadership, leader identification and employee voice behavior: the moderating role of power distance. *Curr Psychol*. 2022;41(3):1301–1310. doi:10.1007/s12144-020-00647-x
45. Li X, Xing L. When does benevolent leadership inhibit silence? The joint moderating roles of perceived employee agreement and cultural value orientations. *J Manag Psychol*. 2021;36(7):562–575. doi:10.1108/JMP-07-2020-0412
46. Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. *BMJ Qual Saf*. 2004;13(suppl 1):i85–i90. doi:10.1136/qshc.2004.010033
47. Liang HL, Yeh TK. The effects of employee voice on workplace bullying and job satisfaction: the mediating role of leader–member exchange. *Manag Decis*. 2020;58(3):569–582. doi:10.1108/MD-01-2019-0112
48. Musah AA, Zulkipli G, Ahmad NSI. Relationship between organizational communication and job satisfaction in temporary work environment: an empirical study of plant turnaround workers. *Glob Bus Manag Res*. 2017;9(1s):73–84.
49. Fard PG, Karimi F. The relationship between organizational trust and organizational silence with job satisfaction and organizational commitment of the employees of university. *Int Educ Stud*. 2015;8(11):219–227. doi:10.5539/ies.v8n11p219
50. Vakola M, Bouradas D. Antecedents and consequences of organisational silence: an empirical investigation. *Employee Relat*. 2005;27(5):441–458. doi:10.1108/01425450510611997
51. Waller LA. *Sense of Belonging at Work: A Guide to Improving Well-Being and Performance*. Routledge; 2021.
52. Dorfman PW, Howell JP. Dimensions of national culture and effective leadership patterns: Hofstede revisited. *Adv Int Comp Manag*. 1988;3 (1):127–150.
53. Van Dyne L, LePine JA. Helping and voice extra-role behaviors: evidence of construct and predictive validity. *Acad Manag J*. 1998;41(1):108–119. doi:10.2307/256902
54. Morrison EW, Wheeler-Smith SL, Kamdar D. Speaking up in groups: a cross-level study of group voice climate and voice. *J Appl Psychol*. 2011;96 (1):183–191. doi:10.1037/a0020744
55. Detert JR, Edmondson AC. Implicit voice theories: taken-for-granted rules of self-censorship at work. *Acad Manag J*. 2011;54(3):461–488. doi:10.5465/amj.2011.61967925
56. Guenter H, Schreurs B, van Emmerik IH, Sun S. What does it take to break the silence in teams: authentic leadership and/or proactive followership? *Appl Psychol*. 2017;66(1):49–77. doi:10.1111/apps.12076
57. Mignonac K, Herrbach O, Serrano Archimi C, Manville C. Navigating ambivalence: perceived organizational prestige–support discrepancy and its relation to employee cynicism and silence. *J Manag Stud*. 2018;55(5):837–872. doi:10.1111/joms.12330
58. Schmalenberg C, Kramer M. Essentials of a productive nurse work environment. *Nurs Res*. 2008;57(1):2–13. doi:10.1097/01.NNR.0000280657.04008.2a
59. Stalpers D, Van Der Linden D, Kaljouw MJ, Schuurmans MJ. Nurse-perceived quality of care in intensive care units and associations with work environment characteristics: a multicentre survey study. *J Adv Nurs*. 2017;73(6):1482–1490. doi:10.1111/jan.13242
60. Behling O. *Law KS. Translating Questionnaires and Other Research Instruments: Problems and Solutions*. Thousand Oaks, CA: Sage; 2000.
61. Podsakoff PM, Mackenzie SB, Lee JY, Podsakoff NP. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J Appl Psychol*. 2003;88(5):879–903. doi:10.1037/0021-9010.88.5.879
62. Liu H, Liu W, Yoganathan V, et al. COVID-19 information overload media discontinuance intention during the pandemic lockdown. *Technol Forecast Soc Change*. 2021;166:120600. doi:10.1016/j.techfore.2021.120600
63. Ngusie HS, Kassie SY, Zemariam AB, et al. Understanding the predictors of health professionals' intention to use electronic health record system: extend and apply UTAUT3 model. *BMC Health Serv Res*. 2004;24:889. doi:10.1186/s12913-024-11378-1
64. Kim JH. Multicollinearity and misleading statistical results. *Korean J Anesthesiol*. 2019;72(6):558–569.
65. Bell A, Fairbrother M, Jones K. Fixed and random effects models: making an informed choice. *Qual Quant*. 2019;53:1051–1074. doi:10.1007/s11135-018-0802-x
66. Collins CJ, Martinez-Moreno JE. Recruitment brand equity for unknown employers: examining the effects of recruitment message claim verifiability and credibility on job pursuit intentions. *Hum Resour Manag*. 2022;61(5):585–597. doi:10.1002/hrm.22089
67. Rockwood NJ Advancing the formulation and testing of multilevel mediation and moderated mediation models [Master's thesis]. Columbus, OH: The Ohio State University; 2017.
68. Cardon PW, Scott JC. Chinese business face: communication behaviors and teaching approaches. *Bus Commun Q*. 2003;66(4):9–22. doi:10.1177/108056990306600402
69. Tajfel H. Social identity and intergroup behaviour. *Soc Sci Inf*. 1974;13(2):65–93. doi:10.1177/053901847401300204
70. Turner JC. Social categorization and the self-concept: a social cognitive theory of group behavior. In: Postmes T, Branscombe NR, editors. *Rediscovering Social Identity*. Psychology Press; 2010:243–272.
71. Wang YD, Hsieh HH. Employees' reactions to psychological contract breach: a moderated mediation analysis. *J Vocat Behav*. 2014;85(1):57–66. doi:10.1016/j.jvb.2014.04.003
72. Wang H Team functioning in rural Chinese hospitals [PhD thesis]. Rotterdam, The Netherlands: Erasmus University Rotterdam; 2024. Available from: https://pure.eur.nl/en/publications/team-functioning-in-rural-chinese-hospitals. Accessed December 9, 2024.