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The impact of team functioning on the quality of care in rural hospitals: a cross-sectional survey study on similarity and multidisciplinarity

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Abstract

Background The World Health Organization recommends improving the quality of care in rural areas of developing countries by enhancing teamwork. Effective teamwork is especially essential for rural hospital care delivered to complex patients, which requires multidisciplinary coordination and cooperation. However, evidence on teamwork in hospitals is mostly from urban hospitals and developed countries, leaving team functioning in rural hospitals in developing countries largely under-researched. The distinctive contextual characteristics of rural areas in developing countries, such as increased diversity, impact teamwork dynamics. To advance the understanding of teamwork in hospitals in rural areas of developing countries, this study investigates the relationships among perceived similarity, multidisciplinarity, coordination and perceived quality of care in rural Chinese hospitals.

Methods We conducted a quantitative study via an online survey in four rural county-level hospitals from different provincial administrative regions in China. 1017 respondents including doctors, nurses and other healthcare professionals provided valid responses. A multilevel moderated mediation model was used for data analysis.

Results Perceived similarity is positively related to coordination, which in turn leads to higher perceived quality of care. Coordination partially mediates the relationship between perceived similarity and perceived quality of care. However, multidisciplinarity does not moderate the effect of perceived similarity on coordination.

Conclusions Perceived similarity can promote coordination and subsequently perceived quality of care. Multidisciplinarity does not moderate the relationship between perceived similarity and coordination, and further research into the role of multidisciplinarity is called for. Hospital management may leverage the advantage of similarity to form teams whose members perceive each other as similar. The functioning of teams perceived as less similar may require additional effort to promote coordination and perceived quality of care. Such challenges caused by dissimilarity are especially relevant in the process of workforce strengthening with the aim of quality improvement towards universal health coverage in rural areas of developing countries.

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Keywords Rural hospitals, Teamwork, Perceived similarity, Multidisciplinary team, Coordination, Cooperation, Quality of care, China

Background

To achieve universal health coverage by 2030, the World Health Organization (WHO) has called for improvement of access to high quality care across the globe. This improvement is most urgently needed in rural areas of developing countries such as China, where health resources are limited [1, 2]. High quality care essentially depends on effective teamwork between different healthcare professionals [3–7], especially for complex patients, e.g., with comorbid chronic conditions, whose care requires intensive coordination and multidisciplinary cooperation [1, 8, 9]. Hence, the promotion of teamwork to improve the quality of care in developing countries is recommended by the WHO [1, 2].

The large body of literature evidencing the essential role of teamwork in healthcare is mostly from developed countries [10–12]. The evidence from rural areas in developing countries in general, and from China in particular, has remained scant, despite the difficulties in providing access to high quality care being larger in such contexts [13, 14]. The relatively low economic development and scarcity of (highly educated) healthcare professionals in these areas cause unique context-related challenges for the hospital workforce that influence team functioning. For instance, Wang et al. find that the workforce in rural Chinese hospitals is predominantly local, resulting in a shared life background and cultural values and perceived similarity [15]. While this similarity appears conducive to team functioning, it may cause nonlocals to experience difficulties to integrate into the teams, thus impeding team processes such as coordination and collaboration. These diversity issues and integration difficulties complicate healthcare workforce recruitment and retention and may ultimately cause nonlocals to leave [15, 16]. The perceived dissimilarity thus may complicate efforts of rural Chinese hospitals to implement policy recommendations to relieve human resource shortages and strengthen the functioning of multidisciplinary teams caring for complex patients and the quality of care [17].

More generally, the building of teams which possess the competences required to provide higher quality care often necessitates the attraction and retention of talents that increase team diversity, for example, in the form of generational diversity, educational diversity, professional diversity and regional diversity. Team diversity has additionally been found to promote innovation and the integration of complementary knowledge [18, 19]. On the other hand, it may introduce ambiguity and communication and coordination challenges. Little appears to be known, however, about such diversity challenges, despite having been reported more widely in rural settings in developing countries [15, 16, 20, 21]. This lack of scientific understanding also applies to China's large rural health system, in which 18,133 county-level hospitals play a pivotal role [22]. Therefore, this research aims to advance the understanding of the role of (dis)similarity in healthcare team functioning through a study in county-level hospitals in rural Chinese hospitals.

Shemla et al. view perceived (dis)similarity as one of the three forms of perceived diversity and define it as individual perception of (dis)similarity to other team members regarding deep-level attributes (e.g., attitudes, values, and beliefs) [23]. We adopt their embedding of dissimilarity as a form of diversity and consider dissimilarity and similarity to relate to the same construct be it from opposite perspectives (as further operationalised below).

Empirical evidence predominantly shows the benefits of perceived similarity to a variety of team outcomes such as higher job satisfaction, team commitment and team efficiency and lower turnover intention [23, 24]. This evidence largely disregards the role of team processes in explaining how team inputs impact team outcomes, as posited by commonly adopted input-process-outcome healthcare teamwork models [10–12]. The extant literature, however, presents little evidence on the relationship between the team input perceived diversity (or, more specifically, dissimilarity) and team processes and is mainly from developed countries. Shemla et al. state that perceived value dissimilarity is negatively associated with team members' involvement in task-related team processes such as collaborative decision-making and information exchange, without reaching outcomes [23]. Triana et al.'s meta-analysis shows that deep-level diversity in culture, value and personality transmits negative influences to team task performance via processes such as information sharing, collaboration and coordination [25].

Coordination exhibits a prominent position among team processes in healthcare, and particularly to improve quality of care for patients with increasingly prevalent complex chronic and oncological conditions under which task interdependence is high [8, 9]. The understanding of the antecedents of coordination mostly lies at the theoretical level. Several reviews summarise frameworks related to care coordination, some of which include well-known healthcare teamwork models [11, 12]. These reviews propose a series of factors that impact coordination, such as care setting, team factors, healthcare professionals' characteristics, cultural factors, and task characteristics [26–28]. These proposed relationships, however, are only

scarcely supported by empirical evidence. In view of the apparent importance of perceived similarity, we propose and investigate the association between perceived (dis) similarity and coordination.

The introduction of multidisciplinary teams to address the needs associated with the growing population of complex patients, e.g. with chronic and/or multimorbid conditions, makes coordination in healthcare more challenging [1, 29, 30]. Discrepancies in disciplinary perspectives on patient treatment may produce additional obstacles to multidisciplinary teamwork [18]. These challenges complicate team functioning and may negatively impact the relationship between team inputs (e.g., perceived similarity), processes (e.g., coordination) and finally outcomes. As the Chinese government emphasises the establishment of multidisciplinary teams for patient-centred care [2], we especially research how multidisciplinarity impacts the relationships among perceived similarity, coordination and quality of care in rural China's county-level hospitals, which cover the health needs of nearly half a billion rural Chinese citizens [31]. China's national government explicitly prioritises the development of healthcare professionals within these rural hospitals [32].

Hypotheses development

Perceived similarity and coordination

Perceived similarity in this study refers to individuals' perceptions of the similarity in underlying attributes such as values, attitudes, and beliefs between team members, which is also called deep-level similarity [23]. It is different from surface-level similarity which is related to demographic characteristics such as age, gender, and race. Research shows that deep-level similarity plays a more important role in team functioning than surface-level similarity [33, 34].

Coordination refers to harmonising and synchronising team members' tasks and activities to fulfil the goal of the team and is part of teamwork processes and interaction [35, 36]. The similarity attraction theory suggests that people are more willing to interact with those they perceive similar to themselves and less likely to work with dissimilar ones [37]. Triana et al.'s meta-analysis confirms that deep-level diversity is negatively related to team process performance (e.g., regarding information sharing, collaboration and coordination) [25]. Srikanth et al.'s review shows that deep-level diversity complicates the coordination of information and task completion within teams [38]. Accordingly, we posit that when team members perceive others as more similar to themselves, they will find it easier to orchestrate the tasks between each other and therefore perceive coordination to be better. Thus, we propose:

Hypothesis 1: Perceived similarity is positively related to coordination.

The moderating role of multidisciplinarity

In contrast to monodisciplinary teams, multidisciplinary teams consist of members from multiple disciplines. The tasks performed in multidisciplinary teams are typically more complex. For example, multidisciplinary oncological teams usually include healthcare professionals from disciplines such as oncology, surgery, radiology, and pathology, and diagnose and treat patients through a complex care pathway [39, 40]. Due to the task complexity, multidisciplinary teams have to synchronise and orchestrate the tasks and activities across team members from various disciplines who have complementary roles. The differences in roles and tasks may create boundaries and conflicts, even between team members who perceive other team members as similar [18]. This in turn may impede collaboration and pose barriers to the coordination of tasks and activities [41], despite perceived similarity among team members. Therefore, the positive relationship between perceived coordination and similarity may be less pronounced in multidisciplinary teams:

Hypothesis 2: Multidisciplinarity moderates the relationship between perceived similarity and coordination such that this relationship is weaker in multidisciplinary teams than in monodisciplinary teams.

Coordination and perceived quality of care

The reviews presenting healthcare teamwork models build the connection between coordination and outcomes. For example, Lemieux-Charles & McGuire's review summarises the findings of field studies in healthcare and presents a positive relationship between coordination and subjective team effectiveness (e.g., perceived task outcomes and well-being) [11]. Reader et al.'s review finds positive perceived coordination is associated with reduced error rates [12]. In addition, other empirical evidence also supports the benefit of coordination to healthcare related outcomes. Bosch et al. conclude that improved coordination is positively related to patient outcomes such as lower complication rates, less functional decline, and higher self-rated health [42]. Castelao et al.'s systematic review also states that coordination is beneficial for effective cardiopulmonary resuscitation performance [43]. Such empirical evidence supports a positive relationship between coordination and perceived quality of care. Therefore, we propose:

Hypothesis 3: Coordination is positively related to perceived quality of care.

The mediating role of coordination

Based on the teamwork models [10–12], team processes mediate the impacts of inputs on outcomes. This mediation is confirmed by empirical findings. For example, Hu & Liden find that prosocial motivation (input) is positively associated with team performance (outcome) via team cooperation (process) [44]. Pangil & Chan present the mediating role of knowledge sharing (process) in the relationship between personality-based and institutional-based trust (inputs), and virtual team effectiveness (outcome) [45]. In the same spirit, we posit that team members who perceive themselves as similar to other team members find it easier to interact with fellow team members and perceive coordination to be better. Moreover, we posit that the perceived better coordination subsequently contributes to higher perceived quality of care. Perceived similarity may, however, also impact outcomes via other team processes such as collaboration and information sharing [25]. Therefore, we propose:

Hypothesis 4: Coordination partially mediates the relationship between perceived similarity and perceived quality of care.

Figure 1 summarises the theoretical model of this study.

Methods

Sample and procedure

China's rural health system is hierarchically organised and consists of village clinics, township health centres and county-level hospitals [22, 46]. In pursuit of our research aim, seven of the 18,133 county-level hospitals from seven different provincial administrative regions were approached with the help of the Health Human Resources Development Centre of the National Health Commission of China and the County Health Media (convenience sampling). Four of these seven hospitals agreed to participate in our study, including one secondary hospital and three tertiary hospitals. Two of the hospitals are from Northern China, while the other two are from Southern China. Together, these four hospitals employ a workforce of 3,500, including about 1,000 doctors and 1,700 nurses.

The questionnaire used in this study consisted of validated measures and questions regarding demographic features (see below). Without further testing, online questionnaires were therefore disseminated to doctors, nurses and other healthcare professionals from these four hospitals via the Chinese survey platform "Wen Juan Xing" between October 9 and October 28, 2022. All team leaders were excluded from the study.

This study was approved by the Research Ethics Review Committee of Erasmus School of Health Policy and Management, Erasmus University Rotterdam (No. ETH2122-0807). The four participating hospitals did not require additional ethical approval. Written informed consent was obtained prior to the data collection from each respondent.

Measures

The appendix provides the validated measures for perceived similarity, coordination and perceived quality of care. Multidisciplinarity was modelled by means of a binary variable.

Perceived similarity

Williams et al.'s 6-item measure [47], adapted from Liden et al. [48], was used to measure perceived similarity. All the items were measured using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The average of the scores of the six items rated by each respondent was used for the individual measurement of perceived similarity. Sample items are "Team members handle problems in a similar way" and "Team members think alike in terms of coming up with a similar solution". The Cronbach's α in this study is 0.97.

Coordination

A 3-item measure, developed by Lechler [36] and adapted by Song et al., [49] was used to measure individuals' perceptions of coordination within a team. A 7-point Likert scale was used for rating the items, with 1 indicating strongly disagree and 7 indicating strongly agree. The mean score of the three items for each respondent formed the individual measurement of coordination. Sample items are "1. The team members adjust closely the processing of their tasks" and "The team members

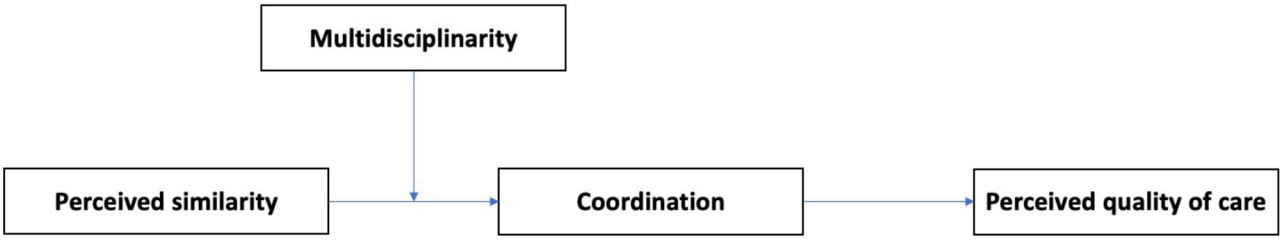

Fig. 1 Theoretical model

share opinions and information spontaneously". The Cronbach's α in this study is 0.98.

Perceived quality of care

We measured perceived quality of care via a single-item outcome indicator using a scale from 1 (very bad) to 10 (very good) [50, 51]. The single-item question is "On a scale from 1 to 10, how do you rate the quality of patient care in your team?".

Multidisciplinarity

Multidisciplinarity was modelled as a binary variable level two (team-level) variable based on a single question answered by each individual respondent as follows. We asked respondents to indicate all disciplines represented on their team. If more than 50% of the respondents reported only one discipline to be represented on their team, the team was classified as "monodisciplinary" and the binary variable was set to "0". If more than 50% of the respondents from a team reported more than one discipline to be represented on the team, the team was considered to be "multidisciplinary team" and a value of "1" was assigned. In case of a tie, i.e. the numbers of respondents from a team reporting one discipline was equal to the number of respondents reporting more than one discipline, the respondents and team were excluded from the analysis.

Control variables

Gender and team tenure were included as control variables in this study based on the significance to the mediator and dependent variable and previous research on team functioning [44, 52].

All the measures were translated from English into Chinese by the standard translation/back-translation technique [53]. The average scores per measure for each respondent form the individual measurements of member perceived similarity, coordination, and perceived quality of care.

Analysis

Data analyses were conducted via SPSS 29 and AMOS 28. Good factor loadings (ranging from 0.89 to 0.99) were shown for perceived similarity and coordination in confirmatory factor analysis. The two-factor model (i.e., perceived similarity and coordination are separate factors) shows a significantly better model fit ($\chi^2(26) = 627.89$, CFI = 0.96, TLI = 0.94, RMSEA = 0.15, SRMR = 0.03) compared to the one-factor model (i.e., perceived similarity and coordination are combined into one factor; $\chi^2(27) = 4380.51$, $p < 0.01$, CFI = 0.70, TLI = 0.60, RMSEA = 0.40, SRMR = 0.11). Pearson's correlation, point-biserial correlation and Phi correlation were used to calculate the correlation coefficients between continuous variables (i.e. team tenure, perceived similarity, coordination and perceived quality of care), between binary variables (i.e. gender and multidisciplinarity) and continuous variables, and between binary variables, respectively [54].

The fact that respondents were nested within teams resulted in dependency of observations. To separate the individual-level and team-level in the analysis, we conducted a multilevel analysis, which increases the reliability of the findings and reduces the bias in coefficient estimation [55, 56]. This choice was further confirmed when an alternative mixed model showed significant between-group variance for the dependent variable perceived quality of care.

The multilevel moderated mediation analysis was implemented using the MLmed macro in SPSS [55]. The main model was a 1-1-1 multilevel, with independent variable "perceived similarity", mediator "coordination" and dependent variable "perceived quality of care" all at level- 1, and moderator "multidisciplinarity" at level- 2. The control variables gender and team tenure were level-1 covariates. In addition, we included random intercepts and slopes in the analysis as the intercepts and slopes were considered to vary across groups [57]. Only level- 1 results will be reported and discussed as our hypotheses were all built at level 1 [56]. However, results of both levels are presented in Table 3.

A p value of less than 0.05 was set as the significance level. A significant level- 1 indirect effect of the 1-1-1 model therefore indicates a significant mediating effect of coordination between perceived similarity and perceived quality of care. This mediating effect is a partial mediation if there is still a significant level- 1 direct relationship between perceived similarity and perceived quality of care in addition to the significant level- 1 indirect effect; otherwise, it is considered as full mediation [58]. A significant interaction between multidisciplinarity and level- 1 perceived similarity indicates a significant moderating effect of multidisciplinarity on the relationship between perceived similarity and coordination.

Results

One thousand seventeen respondents provided valid responses. The average age and team tenure of these respondents are 32.25 years (median: 31.00, standard deviation: 7.95; interquartile range: 9.50) and 6.67 years (median: 5.00; standard deviation: 6.19; interquartile range: 8.00), respectively. Doctors account for 37.95% of the respondents (close to the national data 38.04% in 2022), while the proportion of nurses (58.01%) is higher than that in Chinese hospitals (44.81%) in 2022 [59]. The demographic characteristics of the respondents are listed in Table 1.

The correlation matrix (Table 2) shows a strong and significant correlation between perceived similarity and

Table 1 Demographic characteristics

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

*Due to missing values for age, the total number of people per age group is lower than the number of respondents

coordination ($r = 0.70$, $p < 0.01$). In addition, significant, moderate, correlations are found between perceived similarity and perceived quality of care ($r = 0.36$, $p < 0.01$) and between coordination and perceived quality of care ($r = 0.40$, $p < 0.01$). Full collinearity test confirms there are no serious multicollinearity issues in this study; the values of variance inflation factors for the control variables, independent variable and mediator range from 1.00 to 1.92 [60].

Table 3 shows the results of the multilevel moderated mediation analysis. Perceived similarity is significantly and positively related to coordination ($\beta = 0.57$, $p < 0.01$). However, multidisciplinarity does not moderate the relationship between perceived similarity and coordination ($\beta = 0.01$, $p > 0.05$). Furthermore, coordination is also significantly and positively associated with perceived quality of care ($\beta = 0.42$, $p < 0.01$) and partially mediates the relationship between perceived similarity and perceived quality of care ($\beta = 0.24$, $p < 0.01$) as there is a significantly direct positive relationship between these two variables ($\beta = 0.21$, $p < 0.01$) [58].

Discussion

This study investigates the relationships among perceived similarity, multidisciplinarity, coordination and perceived quality of care in rural Chinese hospitals. In line with our hypotheses, healthcare professionals perceiving themselves as more similar to their team members perceive better coordination and higher quality of care. Moreover, coordination partially mediates the relationship between perceived similarity and perceived quality of care in the studied rural Chinese hospitals. However, multidisciplinarity is not found to moderate the impact of perceived similarity on coordination.

Previous literature on perceived diversity and (dis)similarity presents little evidence on the connection among perceived similarity, processes and outcomes at individual level, and (to the best of our knowledge) none in healthcare settings in rural areas of developing countries [23–25]. This study confirms that perceived similarity is beneficial to coordination and consequently perceived quality of care, adding empirical evidence to the antecedents of coordination and the relationship between team inputs and processes in those theoretical models mentioned in the introduction. This study particularly provides quantitative supports for Wang et al.'s qualitative finding that similarity acts as a context-specific advantage for team functioning in rural Chinese hospitals [15].

While the strong local embedding of the workforce in rural hospitals may bring similarity related advantages, the downsides of perceived similarity should not be ignored. Lack of perceived dissimilarity may represent diversity limitations that can negatively impact innovation, creativity, and decision-making effectiveness [24, 38]. Moreover, the recruitment of a more diverse workforce to address the needs of more complex patients, such as the patients with comorbid chronic conditions, and achieve the goal of universal health coverage may increase regional and disciplinary diversity and

Table 2 The correlation matrix of all variables

	1	2	3	4	5	6
1. Gender (1 = female)	1.00					
2. Team tenure	− 0.15**	1.00				
3. Multidisciplinarity	− 0.03	− 0.02	1.00			
4. Perceived similarity	0.07	− 0.01	− 0.04	1.00		
5. Coordination	0.15**	0.00	− 0.04	0.70**	1.00	
6. Perceived quality of care	0.15**	− 0.09**	− 0.09**	0.36**	0.40**	1.00

**$p<0.01$

Table 3 Multilevel moderated mediation analysis

	Coordination	Perceived quality of care
Fixed effects		
Within-group (Level 1)		
Intercept	5.74**	6.43**
Perceived similarity	0.57**	0.21**
Moderation (Perceived similarity * Multidisciplinarity)	0.01	-
Coordination	-	0.42**
Gender	0.27**	0.22
Team tenure	− 0.00	− 0.02*
Between-group (Level 2)		
Multidisciplinarity	− 0.01	-
Perceived similarity	0.64**	0.26**
Moderation (Perceived similarity * Multidisciplinarity)	0.03	-
Coordination	-	0.40**
Gender	0.24**	0.32
Team tenure	0.00	− 0.02
Mediation (Level 1)	-	0.24**
Mediation (Level 2)	-	0.26**
Random effects (Variance)		
Intercept	0.03	0.25**
Slope (Perceived similarity~)	0.09**	0.20**
Slope (Coordination~)	-	0.11

*$p<0.05$

**$p<0.01$

subsequently adversely impact coordination and quality of care. Therefore, future organisational research should further disseminate the duality of perceived (dis)similarity as a determinant of the effectiveness of workforce strengthening in rural hospitals.

The influence of perceived similarity on coordination may depend on contextual characteristics [23]. In this regard, it may be considered as surprising that we did not find evidence on a moderating role of multidisciplinarity in the relationship between perceived similarity and coordination. This absence might be explained by the job demands-resources model. This model divides contextual factors into job demands, which require sustained efforts, consume energy and are associated with negative performance, and job resources, which are conducive to achieving team goals and counteract the negative effects of job demands [24, 61]. Demands and resources exert distinct impacts on team functioning. The task complexity encountered in multidisciplinary teams may play a role as a job demand and impede the positive impact of perceived similarity on coordination. In that case, the non-significant finding implies that other job resources offset the hypothesised negative moderating effect of multidisciplinarity. For example, the diversity of knowledge, skills and perspectives that healthcare professionals from different disciplines bring into multidisciplinary teams may well improve team functioning [38, 62]. Furthermore, the governmental and hospital support for the functioning of multidisciplinary teams, for instance, in the form of team training, can also be seen as a job resource that facilitates teamwork. Future research may further analyse specific job demands and resources to strengthen the corresponding evidence base on the role of multidisciplinarity in team functioning.

Our findings suggest some practical implications for rural hospital management and team leadership in China. Homogeneous teams can utilise the advantages of similarity to coordinate team yet may need additional management efforts to promote innovation and creativity to improve quality of care. The job demands-resources model [61] suggests that heterogeneous teams possess strengths derived from diversity-driven resources such as access to more diverse information and knowledge [24]. However, these more heterogenous teams may require explicit management efforts to improve coordination and quality of care [63]. This may especially apply to multidisciplinary teams. Rural hospital administrators should be aware of the challenges caused by dissimilarity as they are likely to evolve when strengthening the workforce to improve quality of care on the path towards universal health coverage.

Although this study was conducted in rural Chinese hospitals, the findings may have validity in other contexts, and particularly for hospitals in rural areas in other developing countries [20, 21, 64]. The study may form a starting point for the evidence base on the role of (dis) similarity in the efforts to strengthen the rural hospital workforce in pursuit of universal health coverage.

Limitations

First, the exact number of people receiving the questionnaire is unknown, preventing us from calculating the response rate. Second, the cross-sectional study design cannot claim causality of relationships found among the variables. Third, the data were collected with the same respondents (i.e. healthcare professionals) via the same research method (i.e. survey), which may introduce common-source and common-method bias. Fourth, as we had no access to clinical measures of the quality of care, this study used the subjectively perceived quality of care by a single-item indicator as a proxy of the quality of care. Based on these limitations, longitudinal studies including clinical quality of care indicators are called for.

Conclusion

Perceived similarity appeared to promote coordination and subsequently to be beneficial for perceived quality of care. Moreover, the team process coordination played a mediating role between the team input perceived similarity and the team outcome perceived quality of care. Interestingly, our results suggest that multidisciplinarity does not moderate

the relationship between perceived similarity and coordination, and further research into the role of multidisciplinarity is called for. Rural hospital management may leverage the advantage of similarity to form teams whose (local) members perceive each other as similar. The functioning of teams perceived as less similar may require additional effort to promote coordination and perceived quality of care. Such challenges caused by dissimilarity are especially relevant in the process of workforce strengthening with the aim of quality improvement towards universal health coverage in rural areas of developing countries.

Supplementary Information

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Supplementary Material 1.

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Authors' contributions
All authors made a significant contribution to the work reported. They collaborated closely on the conception, study design, execution, acquisition of data, analysis and interpretation. Each of authors was also closely involved in the drafting and writing of one or more sections of the manscript. All authors 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.

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

Declarations

Ethics approval and consent to participate
This study was approved by the Research Ethics Review Committee of Erasmus School of Health Policy and Management, Erasmus University Rotterdam (No. ETH2122-0807). The research was therefore conducted in accordance with The Netherlands Code of Conduct for Research Integrity and therefore in compliance with the Helsinki Declaration. Written informed consent was obtained prior to the data collection from respondents.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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