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Team effectiveness in Chinese Public Hospital

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Master in Human Resources Management and Organizational Consulting

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Instituto Universitário de Lisboa

The Role of Interpersonal Conflict, Qualitative Job Insecurity and
Communication in Understanding Exhaustion in Chinese Employees Working
Abroad

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Abstract

Teams have become a basic model of organizational operation today, and team effectiveness largely determines the efficiency of the entire organization. In recent years, more and more scholars have begun to pay attention to team effectiveness, and top management support and resource allocation are closely related factors to team effectiveness. As a large and complex organization, Chinese hospitals play an important role in studying their team effectiveness. In this article, we use hierarchical regression analysis to verify the relationship between the three, and propose resource allocation as a mediator to reconcile the relationship between top management support and team effectiveness. Employees of a Chinese hospital (N=131) participated in this questionnaire. The result shows that top management support affects resource allocation and team effectiveness in Chinese hospital. And the top management support adjusts team effectiveness through the mediation of resource allocation. Finally, we propose the practical implications of these findings and future research directions.

Keywords: top management support, resource allocation, team effectiveness

Resumo

As equipas tornaram-se hoje um modelo básico de operação organizacional, e a eficácia da equipa determina em grande medida a eficiência de toda a organização. Nos últimos anos, cada vez mais académicos começaram a prestar atenção à eficácia da equipa, e o apoio de gestão de topo e a alocação de recursos são fatores intimamente relacionados com a eficácia da equipa. Como uma organização grande e complexa, os hospitais chineses desempenham um papel importante no estudo da eficácia da sua equipa. Neste artigo, utilizamos análises hierárquicas de regressão para verificar a relação entre os três, e propomos a alocação de recursos como mediador para conciliar a relação entre o apoio de gestão de topo e a eficácia da equipa. Funcionários de um hospital chinês (N=131) participaram neste questionário. O resultado mostra que o apoio de gestão de topo afeta a alocação de recursos e a eficácia da equipa no hospital chinês. E o suporte de gestão de topo ajusta a eficácia da equipa através da mediação da alocação de recursos. Por último, propomos as implicações práticas destas conclusões e futuras direções de investigação.

Palavras-chave: suporte de gestão de topo, alocação de recursos, eficácia da equipa

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1. Introduction

Now, today's market is becoming more and more complex and competitive, in order to execute and perform their operating target, organization should often focus on the performance of working group (Klang & Luria, 2021). Hence, Mathieu also said that this popularity will call for a deeper understanding on how to use a tool to better create effective groups (Mathieu, Hollenbeck, van Knippenberg, & Ilgen, 2017). As a matter of fact, the multidisciplinary teams have been widely used in healthcare industry like clinical research and administrative sectors due to advances in medicine and complex regulatory and economic factors affecting healthcare. Some scholars pointed out that nowadays, team-based care had already become the foundation and key factors of many changes in healthcare services and growing valued-based model (Gamm, Kash & Bolin, 2007). At the same time, multidisciplinary teams have been demonstrated as the best practice for optimal patient care across many disciplines in medical field (Merién, Van de Ven, Mol Houterman & Oei 2010; Tripathy, 2003).

Not surprisingly, teamwork failure is still the main cause of mistakes and near misses in the field of health care. The root cause analysis shows that 60-70% of serious patient accidents are related to the lack of effective teamwork (such as communication) (Rabøl, Andersen, Østergaard, Bjørn, Lilja, & Mogensen, 2011). Despite increasing awareness and knowledge about the importance of teamwork, health care leaders still do not have a consensus strategy to help health care organizations achieve the best teamwork (Manser, 2009).

Many scholars advocate that with the development of management, team has become an indispensable part of modern organizations (De Dreu, 2007). Team can contribute to the daily organization function. As argued by Cacioppe and Stace, team is an essential factor to organization's effectiveness and even cause problem or limit success of operation (Cacioppe & Stace, 2009). There is an increasing interest in studying team effectiveness recent year.

The organizational literature defines a team as: A group of individuals who depend

on each other in the task. They share responsibility for the results, regard themselves and others as a complete social entity, embedded in one or more larger social systems, and manage their relationships across organizational boundaries (Cohen & Bailey, 1997).

In fact, most hospitals are divided into many subsystems: governance, space, equipment, people, tasks, policies and rules, hierarchies, and more. What is more, because of the norms of professional representatives, medical teams are usually bulky no matter how much their contribution to patient care is. As the pressure and complexity of managing resources more effectively increases, effective working groups are becoming increasingly important in hospitals. Therefore, all systems within hospital should cooperate together to reach healthcare goal so as to better construct healthy and efficient human resource. There is an increasing interest on studying team effectiveness.

The template of modern organizational work is mainly based on an effective team. Hence, it is essential to build and design an effective working group so as to achieve the high performance in organization including not only the business enterprise but also the nonprofit public sectors. Following this trend, in academic world, scholars are also paying more and more attention on research of effective team design in the Applied Psychology and management.

Increasing evidence show a popularity that organizations factors have a heavy effect on the team work and are beneficial to team effectiveness and performance (Acker, 2004; Hackman, 2002; Walsh, Brabeck & Howard, 1999). In the field of hospital management, teamwork has a positive influence clinical (e.g., diagnostic accuracy, time to response/treatment), patient (e.g., complications, length of stay; e.g., (Schmutz & Manser, 2013), and employee (e.g., well-being and patient satisfaction; (Ogbonnaya, Tillman & Gonzalez, 2018) outcomes

As we all know, different industries have different structures and characteristics. In particular, teams in hospitals have clearly defined agreements and procedures, professional hierarchy and shared institutional goals, which are different from other industries. However, as early as 1996, Belassi and Tukul proposed that top

management support is the most common key factor for the success of an organization, no matter in which industry (Belassi & Tukel, 1996).

There are also a range of researches demonstrating that there is positive relationship between the organizational culture, structure and team outcomes (Lemieux & McGuire, 2006; Lemieux, et al., 2002; Siegler & Whitney, 1994) Some arguments also proved that team become effective and efficient when the organizational environment supported and promoted teamwork. If an organization tend to manage individuals instead of group, the organizational performance will be damaged. The basic management task of a hospital can be divided into two foundational parts: quality management and resource allocation (Biller-Andorno, Lenk, & Leitis, 2004). The top management ensures the efficient use of resources in the form of an effective team building process, which in turn creates more resources for social and sick people. Due to this, it can be estimated that top management may have a serious impact on team effectiveness through the mediating role of resource allocation.

At present, scholars mainly look to the personal factors that impacts the team effectiveness like the cooperation. Very few organizational factors had been study. If an organizational philosophy is to cherish teamwork, it can deeply motivate health workers to cooperate and work collaboratively by creating a supportive environment (D'Amour, Ferrada-Videla, San Martin Rodriguez, & Beaulieu, 2005). It is impressive and imperative to provide top management and resource for team work so as to increase the team function. Decades of evidence have been proved having a positive influence on organization performance. However, there is still lack of professional research which is an important academic research gap.

From literature review, I know that there are some researchers studying the team effectiveness through the intervention like leadership (Black & Westwood, 2004), strategic planning (Way, Jones, & Baskerville, 2001), support to teams by identifying goals and implementing resources (Morey et al., 2002), establish protocols and guidelines on roles and responsibilities. But there is no any research working through the aspects of and resource allocation which will well fill the gap in the research of

team effectiveness in the hospital management. And in this article, I am going to develop a comprehensive, evidence-based framework for healthcare team effectiveness. Developing accurate methods for measuring team effectiveness will be crucial to help drive quality improvement.

The structure of this paper is as follows. In Section 2, I review the relevant research of team effectiveness, which provides a theoretical basis for our research. Then, discuss the relationship between team effectiveness, top management and resource allocation. I develop the research model and put forward the research hypothesis. Following, I will discuss the research methods and variables measurement used to test hypotheses in Section 3. In part 4, results between team effectiveness top management and resource allocation will be presented. The last section summarizes the findings, theoretical and practical implications, limitations and future directions of this paper.

2. Literature review and Hypothesis Development

2.1. Overview of team effectiveness

Historical research has led to more than 200 years of research on hospital efficiency. And modern hospital management is more complicated and difficult than before. Because of this, team efficiency in hospitals is becoming a top priority for hospital management in China. More and more managers, including the government, senior leaders of hospitals and leaders in the team attach great importance to the development of the team and the related influencing factors.

Not only that, in recent years, there have been more and more practical cases about teams in other countries. For example, research in the United States has focused on using teams to improve the delivery of chronic disease care by applying clinical guidelines on core practical competencies in primary care settings (Baker, 2001). United Kingdom have led to the introduction of an interprofessional team approach for most primary health-care groups. Similar in New Zealand, the Government

launched a primary health-care strategy that focuses on universal access to primary health-care services (Roddick, 2001). Even in Australia, a number of health centers and other service provider practice arrangements have been established as multidisciplinary teams targeting rural and other specific populations. Hospital effectiveness has made enormous strides in the last two hundred years and Hospital management is much more sophisticated today.

2.1.1. Definition of team effectiveness

The complexity of health care services, including the continuing trend of value-based health care and performance-based compensation, has increased the importance of team-based health care in the provision of health services. Rousseau said that the team effectiveness is refers to the extent to which a team has achieved the objectives managed by some authorized personnel or organization (Aubé & Rousseau, 2011). The first one mentions the idea of team effectiveness is Hackman (Hackman, 1987). He proposed that the team effectiveness mainly focus on three aspects: the work output, improvement of team future problem-solving ability and the impact on team members (including group satisfaction), and improvement of team problem-solving ability in the future.

Team effectiveness is not only an important embodiment of organizational effectiveness, but also a symbol of hospital management ability. Different views about how to measure team effectiveness have been mentioned. Some scholars used indicators like the internal and external satisfaction, performance, and team learning to study the group effectiveness (Sundstrom & McIntyre, 1994). The ideas are quite different in the academic world. For example, Lurey and Raisinghani argues that internal satisfaction and performance are enough to evaluate the team effectiveness (Lurey & Raisinghani, 2001).

Some scholars believe that team effectiveness shows the management result and outcome of an organization and it can prove that whether the benefits of a team policy application. Some experts are trying to defined the team effectiveness more detailed

(Russell, 2002). So, Cohen and Baily further defined more specific that team effectiveness should have three levels: (1) team performance, namely efficiency, productivity, response speed, quality, service customer satisfaction and innovation; (2) team members, i.e., satisfaction, commitment and trust in management of group members; (3) Member behavior, i.e. member absence, personnel mobility and safety (Cohen & Bailey, 1997). Ross and his team predicted team effectiveness from 5 variables: performance, behavior, attitude, team member style, and corporate culture (Ross, Jones, & Adams, 2008). Some scholars believed that team effectiveness is based on team performance which means the productive output reached the customer's requirement, interdependent functions which can cooperate with other team, internal satisfaction.

Team effectiveness is defined as performance and employee satisfaction (Gladstein, 1984). More explicitly, Hackman defines it as the degree to which a group's output meets requirements in terms of quantity quality, and timeliness (performance); the group experience improves its members' ability to work as a group in the future (behavior), and the group experience contributes to individual satisfaction attitude) (Hackman, 1992). This definition makes team effectiveness a function of performance, attitude, and behavior.

2.1.2. Benefits of team effectiveness

Health and social care professionals are also at the forefront of health promotion and prevention who work with children, adolescents and families to provide counselling and health promoting interventions. They not only need to be well educated and experienced, but also, perhaps more importantly, need to be motivated and involved in the work they are doing (Bakker, 2015). From this aspect, it is essential to provide deep study on how to enhance and improve team effectiveness.

Due to that the team-based organization have become the basic and vital model for modern management, how to build an effective team also become necessary to reach the operational targets and high performance. At this moment, lots of

organizations including government are appealing to enhance the team effectiveness no matter within a team or between different teams and make this as the organizational strategy (Fyke, 2001; Commission on the Future of Health Care in Canada, 2002). Teams will work better if they are in an atmosphere that support teamwork and they could own excellent leadership and top management support. When a hospital system supports team to work effectively, the healthcare quality can be improved, patient safety can be enhanced, workload issue can be reduced among the healthcare. Reflecting this reality, scholarly investigation of-team design features in the applied psychology and management fields is more active than ever before (Mathieu, Hollenbeck, van Knippenberg, & Ilgen, 2017). The healthcare industry operates in a high-reliability environment. Referring to the nature and severity of suboptimal performance, there is an urgent need to continuously improve team performance (Zajac, Woods, Tannenbaum, Salas, & Holladay, 2021).

As early as 1995, Vincent stressed the importance of understanding team processes and developing clinical leadership had a great significance to improve clinical quality (Vincent & Moss, 1995). Historical evidence has highlighted that as the key component, team effectiveness and performance play a more and more important role in healthcare industry. Through improving the team effectiveness, both the primary healthcare and public healthcare will get a huge improvement and enhancement on its performance (Fyke, 2001).

Andreatta, P.B put forward that clinical output, culture for clinicians the healthcare quality for patients, patient safety and working environment would gain enormous increase under the high level of healthcare team effectiveness (Andreatta, 2010). For the complex organization mode of the hospital, the more advanced the hospital is, the more multiple the tasks it undertakes. First of all, hospitals should not only provide good medical services for patients, but also train and educate the next generation of medical staff. Moreover, such training mode is often distributed according to departments, and more specifically, it operates according to teams. Therefore, the effectiveness of teamwork is of great significance for improving high-quality service and training and educating the next generation of medical personnel.

Even for the sustained and good development of the whole medical industry, it plays an indispensable role.

Some recent research on human resource management suggests that teamwork may be an important factor in reducing employees' shortcomings, as well as reducing their stress and anxiety levels (Health Council of Canada, 2005). At the same time, some scholars also put forward similar views: they believe that team work can reduce workload to some extent, improve job satisfaction and retain talents, improve patient external satisfaction and reduce patient mortality (Zwarenstein, Reeves, & Perrier, 2005).

2.2. Team effectiveness and top management

Top management is usually composed of CEO, President, chairman, President, board of directors or other individuals in senior management positions (Denison, Hart, & Kahn, 1996). They lead the whole organization, set strategic target, allocate resources, and provide a convenient and supportive working environment and conditions for the team. Therefore, they are the guarantee and premise of a team's performance. As for top management support, scholars defined it as a combination of gaining attention and resource offering for team leaders to the operation of team so as to reach the high performance (Chollet, Brion, Chauvet, Mothe, & Géraudel, 2012). And from another aspect, TMS is also recognized as the quantity and quality of support that team hope to receive from the top management, no matter for individual or the whole team (Pinto, Slevin, & English, 2009).

Because of the widespread use of team systems in today's organizations, and the important impact of leadership on team operations and outcomes, human resource development (HRD) professionals need a better understanding of behaviors and conditions that enable leaders to effectively manage human resources, which in turn affects the success of teams (Pratoom, 2018). And TMS played an essential element for a team to reach projects success. Even a team leader with high leadership qualities cannot successfully gain team effectiveness without the support of the organization's

top management. In another words, it is important for a team to build team effectiveness with the support of top management. Management teams is asking for strong organizational support to function effectively. There are some studies indicating that the top management support can play an important effect on not only the high team performance (Kanwal, Zafar, & Bashir, 2017) but also team building (Baiden, Price, & Dainty, 2006).

Top management support is one of the most important critical factors for successful implementation of projects. A clear organizational philosophy that values teamwork can motivate health professionals to practice collaboratively by creating a supportive environment.

It was strong supported that lack of top management support is a key obstacle (Somers & Nelson, 2004) because senior management participates in the development of projects, sets goals, sets goals, determines budgets, and provides human, material and technical resources. All in all, in order to catch the team effectiveness in Chinese hospital, it is full of significance to consider the impact of top management support. The support of top management is related to the motivation and performance of team members, pointing to the key role they play in the operation of the team (Swink, 2003). From what has been discussed before, we can know that top management support has a large possibility to boost the team effectiveness in hospital management. Hence, we make the following hypothesis:

Hypothesis 1: There is a positive significance between top management support and team effectiveness in the Chinses hospital.

2.3 Team effectiveness and resource allocation

The issue of the availability and optimal allocation of medical resources is a problem that most societies in the world have been facing (Culyer & Newhouse, 2000). Inefficient allocation is a fundamental flaw in public hospitals in developing countries. In a public health care system, the distribution process is the end result of the behavior of different participants with competing goals. There is also existing a

view that resource allocation can be seen as a specific goal-setting issue that takes into account a number of factors such as manager preference information and employee skill proficiency. Resource allocation is the allocation of resources, often financially — between competing different teams. When we discuss the allocation of health care funding, we need to consider three different levels of decision-making.

Level 1: Allocate resources to health care over other societal needs.

Level 2: Allocate resources within the healthcare sector.

Level 3: Allocation of resources among individual patients.

But here, in this article, I mainly discuss the resource allocation within different teams in hospital, to some extent, the internal resource allocation. Resource allocation refers to the allocation of resources between different uses. The choice of future use of resources determines the composition of social products. Resource allocation becomes a problem for two reasons. First, the supply of social resources is limited (scarcity of resources), while people's desire for needs is unlimited; Second, certain resources often have many different usage options (Lin & Chen, 2009).

Along with the expanded study of resource allocation theory, scholars have proposed that teams are resource-limited because they often need to use limited resources and abilities to perform their team tasks and team roles (Barnes et al., 2008). A wide variety of resources can contribute to project performance. Team effectiveness requires a variety of resources to achieve, especially in the special organizational form of the hospital. Studies have shown that resource utilization under optimal control mechanisms contributes to the final performance of the team (Snell, 1992). Strategies to improve team efficiency need to consider the environment in which the team works, so as to provide sufficient resources to promote the efficiency of the team. Organizations need to provide resources and tools to support the implementation and maintenance of team work so that teams can achieve goals or objectives (Currie, 1994).

It is an urgent issue that the health resource availability and optimal model of resource allocation are becoming more and more important and necessary to most of the world's countries and government (Culyer & Newhouse, 2000). Hence it raises a

lot of attention and discussion. The findings of Christopher O. L. H. Porter's study had shown that resource allocation had a certain function on team performance when team had some kinds of workload distribution problem (Porter, Itir Gogus, & Yu, 2010). Weinstein proposed a cost-effectiveness analysis (CEA) to allocate resources in healthcare and to evaluate efficiency (Weinstein, 1990). Organizations need to provide resources and tools to support the implementation and maintenance of teamwork to enable teams to achieve targets or objectives (Anderson, Ones, Sinangil & Viswesvaran ,2001).

At this moment, due to the covid 19, the healthcare situation has become more and more difficult and complex. facing the continual increasing cost and attention on sustainability of current lever of healthcare, it is widely discussed that limited resources should be allocated reasonably and efficiently (Kiernan, 2016). Following the fact that resource is becoming limited and demand are surpassing supply both for healthcare sectors and individual, resource allocation has already become a vital problem.

Through research, Matthew W. Miller and his team found the attentional resource allocation did affect the human performance of a team when a team was facing cognitive workload problem or mental stress (Miller et al., 2013). By the evidence of a national hockey team, some other scholars also put forward an idea that the efficient proximal resource allocation strategies are able to forecast distal Team Performance. So, we propose that:

Hypothesis 2: There is a positive significance between resource allocation and team effectiveness in the Chinses hospital.

2.4 The mediating role of adequate resource allocation

Some experts supported that authority (top management support) can internally decide the best lever of social and team performance and at the same increase the efficiency of medical resource allocation so as to increase the whole society benefits (Lai, Cheung & Fu, 2018). That is to say, top management have some degree impact

on both resource allocation and team effectiveness. Top management can improve the efficiency of the team by managing resources, thus creating an environment and conditions that can well motivate the development of the team.

Resource is something people valued like objects, conditions, characteristics or energy and it would become harmful to team when lost it. Effective use of resources (e.g., operating rooms, specialized doctors, etc.) allows hospitals to efficiently provide high-quality care to patients. Conservation of resources theory holds that leaders, as a basic resource, create and conserve resources for an organization through the efficient use of human resource (Mao, Chiang, Chen, Wu & Wang, 2019). The effective role of top management support includes positively influencing stakeholders by providing resources, negotiating, persuading and motivating strong parties to support implementers (Boonstra, 2006).

Studies have already shown that when team members feel supported by their top management, they are more inclined to put in more effort at work (De Bakker, Boonstra, & Wortmann, 2010). In 1996, Belassi and Tukel found in their study that when top management gives team leaders enough available resources and support, projects executed by such teams are often able to rank high in terms of success, rather than receiving top support and resources from the top (Belassi & Tukel, 1996).

Top management support can be classified as a resource caravan corridor in the leader's work environment, helping leaders to effectively utilize and structure organizational resources. Top management support by providing adequate resources facilitates the formation of team effectiveness. And studies have proved that the inadequacy of inputs and support has led to the result that teams are unable to complete their projects (Ewusi-Mensah, 1997).

When organization allocates sufficient resource to team, it maybe stimulates team to work effectively. Organization owns the responsibility to allocate necessary and adequate resource to team (Denison, Hart, & Kahn, 1996; Tharumarajah & Control, 2001). Any lack of resources may be due to lack of top management support for team (Gupta & Wilemon, 1990), which indicates the interplay between resource allocation and top management engagement. It is very important that top management

controls the resources necessary to support any project (Bai & Sarkis, 2013). In this study, we view resources such as organizations providing adequate personnel, facilities, and research funds to various teams in hospital. Under these conditions, it is reasonable to draw a hypothesis that:

Hypothesis 3: The positive relationship between top management support and team effectiveness, is mediated by resource allocation.

3. Methodology

3.1. Measurements and participants

A total of 131 participants across the different department in this Chinese hospital answer this questionnaire. The team were drawn from a range of health care and social care personnel with predominately a multidisciplinary ethos and working practice. Chinese employees who work in a Chinese hospital will be invited to answered the questionnaire in this study visa email or WeChat using the convenience sampling. The original question is English version and will be translated into Chinese. As a standard, all team members complete the questionnaire in two weeks which guarantee the same situation at the same time. What is more, in order to minimize the likelihood of bias, all the questionnaire were answered anonymously and the facility to compare individual team with the other teams are not available. Employees were told about the purpose of data collection and ensured that their information would be kept secret and only for research purposes. The factors of the article are measured in the way that have been verified in the past to ensure its accuracy and feasibility.

3.1.1. Measurements of team effectiveness

As the body of knowledge continues to evolve, many scholars suggested some types to measure the team effectiveness. After a large amount of literature survey, from the perspective of the feasibility and reliability of the research, I finally decided to four

variables to measure team effectiveness in hospital. As is widely accepted, team effectiveness is a holistic idea, which should not only consider whether team can achieve the task and perform well, but also how the team members cooperate to accomplished this task and get the outcome (Eduardo, 2005). Referring to the measurement of team effectiveness, in 2010, Henttonen put forward his own theory that there is no single and uniform measure method of team effectiveness and the measurements should be recommended as a multi-dimensional concept (Henttonen, 2010). Hence, this paper will adopt multiple dimensions to evaluate team effectiveness.

A method argued by Cohen and Bailey in 1997 supported that a variety of important outcomes on three dimensions of team effectiveness in an organizational setting: performance, member attitudes which can be measured by such as employee commitments), and behavioral outcomes measured by such as turnover measured by such as employee commitments (Cohen & Bailey, 1997). Because of the many attitude and behavioral variables used in team effectiveness, this study used these measurements for team effectiveness: team-oriented commitment (employee attitudes) and intention to leave(turnover).

Team-oriented commitment

In 1985, Granovetter said that the closed network structure can increase trust and dependence within teams, it is related to team commitment (Granovetter, 2018). To a certain extent, commitment means that employees' willingness to devote to explicit values and goals. For the sake to predict employees' working behavior, it is full of necessary to make clear this topic (Reichers, 1985). Team commitment is the psychological attachment of team members to the team. It is similar to organizational commitment, only the goal of attachment is the team rather than the larger organization of which the team is a part (Pearce & Herbik, 2004). Because this paper is mainly focus on team effectiveness, we decided to use the measure tool related to team. In 1998, Dick and his team put forward a measurement of team-oriented commitment which is measured by three items: 1, I am prepared to do additional

chores, when this benefits my team. 2. I feel at home among my colleagues at work. 3. I try to invest effort into a good atmosphere in my team (Ellemers, de Gilder, & Van Den Heuvel, 1998). On a 5-point Likert scale, respondents ranked the statements from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha was 0.784.

Intention to leave

A more prominent phenomenon in the medical industry is that the turnover rate is high. Some scholars argue that effective teams must address the characteristics of the organization of work in order to reduce employees' willingness to leave (Zhang, Punnett, Gore & CPH-New Research Team, 2014). High turnover costs a lot for the whole organization and is damage for residents because it is expensive to hire and train human resource (Jones, 2008) and is harmful for the quality of resident care (Castle & Engberg, 2005). And intention to leave is a strong direct predictor of future turnover (Alexander, Lichtenstein, Oh & Ullman, 1998) and so scholars said intention to leave was also related to the job satisfaction in healthcare industry (Decker, Harris-Kojetin, & Bercovitz, 2009). Turnover is expensive for employers and disruptive for residents, with increased costs of hiring and personnel training (Jones, 2008) and decreased quality of resident care (Castle & Engberg, 2006).

Employees were assessed for their intention to leave with four items: 1. "I have a good chance of leaving this job in the next two years." Intention to leave within the next 2 years was believed to reflect the actual willingness to leave (Kash, Naufal, Dagher, & Johnson, 2010). 2. I would prefer another more ideal job than the one I now work in. 3. I have thought seriously about changing agencies since I began working here. 4. I hope to be working for this agency until retire. These items were assessed with a 5-point Likert-type scale from strongly disagree to strongly agree. The Cronbach's alpha was 0.952.

Goal, Quality and Productivity

This article also uses Gibson's research. Their research on team effectiveness found that the team background is crucial. To promote this, they made a series of research to further verify the importance of the effectiveness of cross-team, organizational environment and culture. A team efficiency measurement tool that is suitable for different cultures and organizational environment is proposed. Considering the extensive application and execution of this tool, this article uses three of them: Goal, Quality and Productivity. Each of these three aspects are measured with five items. For example, goal: This team fulfills its mission. The Cronbach's alpha was 0.912. Quality use the items like: This team has a low error rate. The Cronbach's alpha was 0.860. Productivity: This team uses too many resources (Gibson, Zellmer-Bruhn & Schwab, 2003). The Cronbach's alpha was 0.898. These items were assessed with a 5-point Likert-type scale from strongly disagree to strongly agree.

3.1.2. Measurements of top management

The level of support from the top management is measured by adopting the five dimensions proposed by Boonstra (Boonstra, 2006). By rating these five dimensions, participants can learn from the ratings the role that high-level support plays in the team. These items were assessed with a 5-point Likert-type scale from strongly disagree to strongly agree. The Cronbach's alpha was 0.917. These five dimensions are:

Provide resources: The top level provides enough resources for the team to run.

Structural arrangements: The top level provides reasonable arrangements or suggestions for the team's results.

Communication: Senior management often communicates effectively or in a timely manner with the team.

Expertise: Senior management has good expertise or social skills to guide the team or set strategies.

Power: Top management has power and uses it to support the team and protect team members.

3.1.3. Measurements of resource allocation

And as for how to measure whether the resource allocation is sufficient and adequate, the job demands-resources (JD-R) model is widely used. JD-R model has several propositions that are summarized in Bakker and Demerouti. Here, I determine to use the measure method of job resource. Job resources have also been found to be particularly important when demands are high because they boost work engagement (Bakker, 2015). Through the evaluation of job resource, it can measure the level and effectiveness of hospital resource allocation to a certain extent. Here, in this paper, I decide to use the evaluation model of Sabine Kaiser, etc (Kaiser, Patras, Adolfsen, Richardsen, & Martinussen, 2020). In their paper, they believed job resource allocation can be divided into five perspectives: autonomy, organizational support, collaboration, leadership, and team climate.

Autonomy: you have absolute autonomy to realize your own ideas in your job.

organizational support: you can receive enough support when you are facing some problems.

Collaboration: you have a good collaboration between each other in team.

Leadership: team leadership is good enough.

Team climate: team climate is good enough.

In my paper, the measurements for most of the variables were adapted from previous studies. These variables were collected using a Likert scale of 5, with 1 indicating "strong disagreement" and 5 indicating "strongly agreeing" (de Quervain, et al., 2004). The Cronbach's alpha was 0.908.

3.2. Data collection

Respondents were asked to consider their experience with a recently completed project when answering survey questions. Of the 140 questionnaires distributed, 131

were recovered, representing a recovery rate of 93.6 percent. The demographic data of the respondents are shown in table 1. There were a variety of questions and scales in the questionnaire including demographic characteristics like age, gender, education, number of people under the same team and years of working. From the whole population, men make up the majority, 54.2%, and women with 45.80%. For the distribution of age, the population aged 20 to 30 reached 38.20%, 39.70% aged 31 to 40 and 15.3% aged 41 to 50. Only 6.9% of the population is over the age of 50. Among the study population, 26% worked for more than 3 years, 20.60% worked for 3 to 5 years, 25.20% for 5 to 10 years, 15.30% in 10 to 15 years, and the remaining 15.30% worked for more than 15 years. For education backgrounds, 32.8% of the people have a bachelor's degree, 40.5% have a master's degree, and 22.9% have a doctoral degree. For team size, the majority of people belong to teams of 11 to 20 people, reaching 47.3%. Teams with fewer than 5 people are fewer, with only 3.1% belonging to such teams. 22.9% belong to teams of 6 to 10 people. 17.6% belong to teams of 21 to 30 people, and 9.2% belong to teams of more than 30 people.

Table 1. Sociodemographic statistics of the sample

Category	Number	Frequency
Gender		
Male	60	45.80%
Female	71	54.20%
Age		
20–30 years old	50	38.20%
31-40 years old	52	39.70%
41-50 years old	20	15.30%
>50 years old	9	6.90%
Working years		
1-3 years	34	26%
3-5 years	27	20.60%
5-10 years	33	25.20%
10-15 years	20	15.30%
>=15 years	17	13%
Education		
Bachelor's degree	43	32.8%
Master's degree	53	40.5%
Doctoral degree	30	22.9%
Others	5	3.8%

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Number of hospitals have worked		
1- until 3	77	58.8%
3- until 5	37	28.2%
>=5	17	13%
Team size		
≤5 members	4	3.1%
6–10 members	30	22.9%
11–20 members	62	47.3%
21-30 members	23	17.6%
>30 members	12	9.2%

Procedure

This study is a qualitative correlational research. Chinese employees who work in a Chinese hospital will be invited to answered the questionnaire in this study visa email or WeChat using the convenience sampling. The original question is English version and will be translated into Chinese. After collect all the data from the hospital in one weeks, I will star to use IBM SPSS Statistics software to analyze the data of the questionnaire.

For the first step, it is to do the descriptive analysis and pilot analysis and calculate the mean responses of different variables. The standard deviation and correlations between each other will be calculated through the reliability analysis. The reliability analysis is a mechanism employed to check the internal consistency. Analysis of the measurement model mainly involves the assessment of reliability and validity. Another metric for internal consistency is composite reliability, which is not sensitive to the number of items in the scale (Hair, Ringle & Sarstedt, 2011). As for testing the hypotheses, simple linear regression analysis was conducts between the predictors (top management support and resource allocation) and team effectiveness. And finally, the relationship between the three variables can be verified with hierarchical regression analysis which can also test the mediating effect of resource allocation in this model.

4. Result

Further details on the scales utilized in this study are provided in the following section. Cronbach's alphas are considered adequate when they are equal to or greater than 0.70, according to guidelines from the European Federation of Psychologists' Associations (2013). The Cronbach's alphas become good when they equal or exceed 0.80, and excellent when they surpass 0.90. All factors' Cronbach's alphas exceeded 0.7. It means that data has good reliability in this article.

Table 2 Construct reliability of variables

Variable	CR
Intention to leave	0.952
Team commitment	0.784
Goal	0.912
Quality	0.86
Productivity	0.898
Team effectiveness	0.814
Top management support	0.917
Resource allocation	0.908

Note: CR = Construct reliability TMS= top management support RA= resource allocation

The aim of this paper is to study the correlations between team effectiveness including different aspects of team goal, team productivity, team quality, commitment and intention to leave, top management support and resource allocation. All the studied variables are shown in Table 3 along with their means, standard deviations, and correlations. Firstly, we conducted a bivariate correlation (see figure II) among these measures, obtaining the following results: we can see that the team productivity is positive related with top management support and resource allocation ($r=0.922$, p

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< .001; $r=0.897$, $p < .001$). Team goal and team quality also have a positive relationship with top management support ($r=0.852$, $p < .001$; $r=0.832$, $p < .001$), positive with resource allocation ($r=0.828$, $p < .001$; $r=0.863$, $p < .001$). The result also shows that one of variables of team effectiveness, team commitment positively associates with top management support and resource allocation ($r=0.867$, $p < .001$; $r=0.825$, $p < .001$). As for intention to leave, we found that it is negatively related with top management support ($r=-0.892$, $p < .001$) and resource allocation ($r=-0.904$, $p < .001$).

Table 3 Mean, standard deviations and Correlations between variables

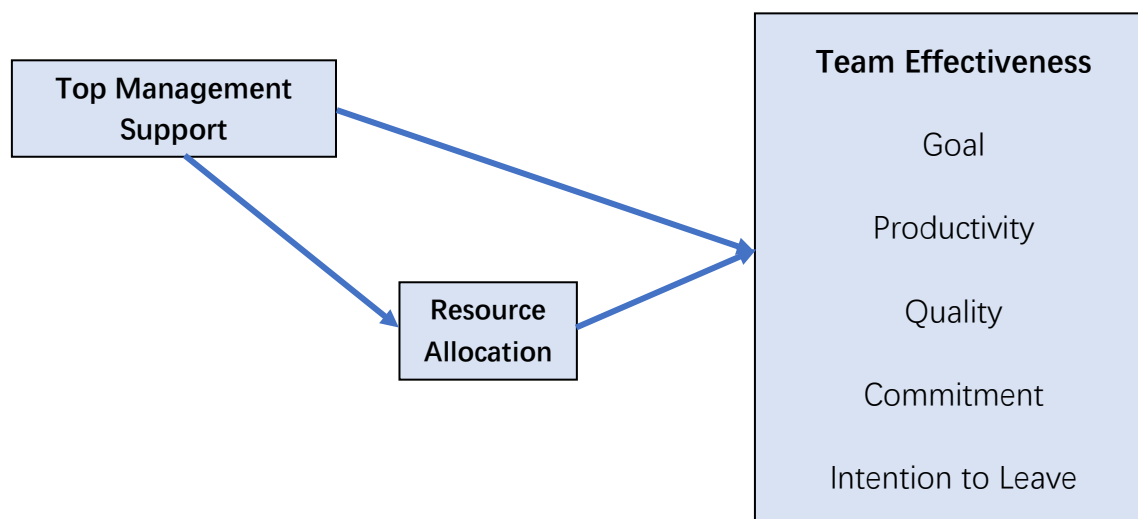
	M	SD	1)	2)	3)	4)	5)	6)	7)
1) Team Productivity	3.377	1.269	1						
2) Team Goals	3.305	1.155	0.836**	1					
3) Team Quality	3.229	1.159	0.805**	0.730**	1				
4) Intention to Leave	2.571	1.358	-0.896**	-0.856**	-0.845**	1			
5) Commitment	3.232	1.153	0.854**	0.734**	0.790**	-0.864**	1		
6) Resource allocation	3.208	1.108	0.897**	0.828**	0.863**	-0.892**	0.825**	1	
7) Top management support	3.266	1.154	0.922**	0.852**	0.832**	-0.904**	0.867**	0.910**	1

* $p < 0.05$ ** $p < 0.01$

Note: $N=131$. * $p < .05$; ** $p < .01$; *** $p < .001$

4.1 Test of Hypotheses

Model:



Multiple Hierarchical Linear Regression (MHLR) analyses were conducted to test our hypotheses, the role of top management support in predicting team effectiveness. According to Table 4, the results of the hierarchical linear regression predicting team effectiveness are presented as standardized coefficients (β) and t-statistics (t). In the step 1, we use control variables consisting of sociodemographic variables related to human resource management control: gender, age, education, the number of hospital that employees have worked and number of members of each team. In Step 2, we entered top management support as a predictor. In step 3, we just add the factor of resource allocation into model and observe the main effect of between three factors. Hypothesis 1 argued that top management support may has a positive relationship with team effectiveness. So according to our literature review, we analyze hypothesis 1 from different aspects: team Productivity, team goals, team quality, intention to leave and commitment.

Team Goal

As shown in table 4, we observed in step 1 that no individual demographic variable predicts team goal. In model 2, top management support explains team goal significantly with 85.2%, significantly increase adjusted R^2 to 72.5% (ΔR^2 model 2=73.4%) obtaining the following relations: the better top management support positively results better lever of team goal, $\beta = 0.910$, $t(131) = 18.486$, $p < .001$. Hence, top management positively influenced team goal. In model 3, resource allocation positively explains 33.6% team goal with an increasing adjusted R^2 of 74.1% (ΔR^2 model 2=1.6%). It indicates that the higher level of resource allocation causes the high level of team goal $\beta = 0.828$, $t(131) = 16.760$, $p < .001$. What is more, it indicated that the better top management support causes the better resource allocation which in turn to greater team goal. This also proved that resource allocation mediates the relationship between top management support and team goal. As for to test the mediation effect, we use Bootstrap to test mediation. The result also proved the same conclusion, $Z = 2.902$, $p = 0.004$; 95% bootstrap CI=0.086 to 0.459, excluding zero.

Table 4 Hierarchical Multiple Regression Analyses of Team Goal

Independent Variable	Team Goal		
	Model1	Model2	Model3
Gender	ns	ns	ns
Age	ns	ns	ns
Tenure	ns	ns	ns
Education	ns	ns	ns
Number of working hospitals	ns	ns	-0.181*
Team size	ns	ns	ns
Top management support		0.852**	0.557**
Resource allocation			0.336**
Adjusted R ²	-0.009	0.725	0.741
△R ²		0.734	0.016
F Change	ns	331.713**	8.539**

β coefficients presented a t test with* p<0.05 ** p<0.01

Test of mediation

	B	SE B	β	t	p
Top management support on resource allocation	0.875	0.035	0.910	24.999	0.000**
resource allocation on Team Goal	0.863	0.051	0.828	16.760	0.000**
Top management support on Team Goal	0.853	0.046	0.852	18.486	0.000**

Indirect effects of Top management support on Team Goal through resource allocation	Normal theory approach		Bootstrap approach	
	Z	P	Boot estimates (SE)	95% CI LL UL
Indirect through resource allocation	2.902	0.004	0.096	0.086 0.459

Team Quality

As shown in table 5, there is no individual demographic variable predicting team goal. In model 2, top management support explains team quality significantly with 83.9%, significantly increase adjusted R^2 to 67.7% (ΔR^2 model 2=70.8%) obtaining the following relations: the better top management support positively results better team quality, $\beta = 0.270$, $t(131) = 2.557$, $p < .001$. Hence, top management support positively influenced team quality. In model 3, resource allocation positively explains 33.6% team goal with an increasing adjusted R^2 of 74.2% (ΔR^2 model 2=6.5%). It indicates that the better resource allocation causes the better team goal, $\beta = 0.617$, $t(131) = 5.856$, $p < .001$. What is more, it indicated that the better top management support causes the better resource allocation which in turn to greater team quality. This also proved that resource allocation mediates the relationship between top management support and team goal. To test the mediation effect, we used Bootstrap to test mediation. The result also proved the same conclusion, $Z = 5.563$, $p < 0.00001$; 95% bootstrap CI=0.370 to 0.768, excluding zero.

Table 5 Hierarchical Multiple Regression Analyses of Team Quality

Independent Variable	Team Quality		
	Model1	Model2	Model3
Gender	ns	ns	ns
Age	ns	ns	ns
Tenure	ns	ns	ns
Education	ns	ns	ns
Number of working hospitals	ns	ns	ns
Team size	ns	ns	ns
Top management support		0.839**	0.269*
resource allocation			0.651**
Adjusted R ²	-0.031	0.677	0.742
△R ²		0.708	0.065
F Change	ns	272.707**	32.056**

β coefficients presented a t test with* p<0.05 ** p<0.01

Test of mediation

	B	SE B	β	t	p
Top management support on resource allocation	0.875	0.035	0.910	24.999	0.000
resource allocation on Team Quality	0.645	0.110	0.617	5.856	0.000
Top management support on Team Quality	0.271	0.106	0.270	2.557	0.012

Indirect effects of Top management support on Team Quality through resource allocation	Normal theory approach		Bootstrap approach		
	Z	P	Boot estimates (SE)	95% CI	
				LL	UL
Indirect through resource allocation	5.563	0.000	0.101	0.370	0.768

Team Commitment

We found no individual demographic variable predicts team commitment in table 6. In model 2, top management support explains team commitment significantly with 87.2%, significantly increase adjusted R^2 to 74.8 % (ΔR^2 model 2=77.3%) obtaining the following relations: the better top management support positively results better lever of team commitment, $\beta = 0.675$, $t(131) = 6.429$, $p < .001$. Hence, top management support positively influenced team commitment. In model 3, we found that the relationship between resource allocation and team commitment is not significant and resource allocation did not mediate the relationship between top management support and team commitment.

Table 6 Hierarchical Multiple Regression Analyses of Team Commitment

Independent Variable	Commitment				
	Model1	Model2	Model3		
Gender	ns	ns	ns		
Age	ns	ns	ns		
Tenure	ns	ns	ns		
Education	ns	ns	ns		
Number of working hospitals	ns	ns	ns		
Team size	ns	ns	ns		
Top management support		0.872**	0.682**		
resource allocation			0.216		
Adjusted R ²	-0.025	0.748	0.753		
△R ²		0.773	0.005		
F Change	ns	380.880**	3.739		
Test of mediation					
	B	SE B	β	t	p
Top management support on resource allocation	0.875	0.035	0.910	24.999	0.000
resource allocation on Commitment	0.219*	0.109	0.211	2.008	0.047
Top management support on Commitment	0.675**	0.105	0.675	6.429	0.000
Indirect effects of Top management support on Commitment through resource allocation					
Indirect through resource allocation	Normal theory approach		Bootstrap approach estimates (SE)	95% CI	
	Z	P		LL	UL
Indirect through resource allocation	2.007	0.045	0.096	0.015	0.393

Team Productivity

In table 6, no individual demographic variable predicts team productivity. In model 2, top management support explains team productivity significantly with 101%, significantly increase adjusted R^2 to 85.4 % (ΔR^2 model 2=85.9%) obtaining the following relations: the better top management support positively results better lever of team productivity, $\beta = 0.612$, $t(131) = 7.927$, $p < .001$. Hence, top management support positively influenced team productivity. In model 3, resource allocation positively explains 38.1% team productivity with an increasing adjusted R^2 of 87.2 % (ΔR^2 model 2=1.8%). It indicates that the higher level of resource allocation causes the high level of team productivity $\beta = 0.34$, $t(131) = 4.397$, $p < 0.0001$. Further, it indicated that the better top management support causes the better resource allocation which in turn to greater team productivity. This also proved that resource allocation mediates the relationship between top management support and team productivity. As for to test the mediation effect, we use Bootstrap to test mediation. The result also proved the same conclusion, $Z = 4.763$, $p < 0.0001$; 95% bootstrap CI=0.166 to 0.449, excluding zero.

Table 7 Hierarchical Multiple Regression Analyses of Team Productivity

Independent Variable	Team Productivity		
	Model1	Model2	Model3
Gender	ns	ns	ns
Age	ns	-0.230**	-0.192*
Tenure	ns	ns	ns
Education	ns	ns	ns
Number of working hospitals	ns	ns	-0.181*
Team size	ns	ns	ns
Top management support		1.011**	0.677**
Resource allocation			0.381**
Adjusted R ²	-0.005	0.854	0.872
ΔR ²		0.859	0.018
F Change	ns	728.880**	18.477**

β coefficients presented a t test with* p<0.05 ** p<0.01

Test of mediation

	B	SE B	β	t	p
Top management support on resource allocation	0.875	0.035	0.910	24.999	0.000
resource allocation on Team Productivity	0.389	0.088	0.340	4.397	0.000
Top management support on Team Productivity	0.674	0.085	0.612	7.927	0.000

Indirect effects of Top management support on Team Productivity through resource allocation	Normal theory approach		Bootstrap approach		
	Z	P	Boot estimates (SE)	95% CI	
				LL	UL
Indirect through resource allocation	4.763	0.000	0.071	0.166	0.449

Intention to Leave

As shown in table 8, there is no individual demographic variable predicting intention to leave. In model 2, when top management support decreases one unit, the value of intention to leave will increase 1.067, adjusted $R^2 = 81.6\%$ (ΔR^2 model 2=83.5%). We can draw a conclusion that top management support has a negative relationship with employees' intention to leave, $\beta = -0.538$, $t(131) = -6.378$, $p < .001$. In model 3, when the value of resource allocation decreases one unit, intention to leave will increase 0.493 with an increasing adjusted R^2 of 85.4% (ΔR^2 model 2=2.7%). It indicates that the lower level of resource allocation causes the higher intention to leave $\beta = -0.402$, $t(131) = -4.769$, $p < 0.0001$. Further, these data show that better top management support causes the better resource allocation which in turn to lower intention to leave. To test the mediation effect, we use Bootstrap to test mediation. The result also proved the same conclusion, $Z = 4.999$, $p < 0.0001$; 95% bootstrap CI=-0.529 to -0.185, excluding zero.

Table 8 Hierarchical Multiple Regression Analyses of intention to leave

Intention to Leave			
Independent Variable	Model1	Model2	Model3
Gender	ns	ns	ns
Age	ns	0.221*	ns
Tenure	ns	-0.147*	ns
Education	ns	ns	ns
Number of working hospitals	ns	ns	ns
Team size	ns	ns	ns
Top management support		-1.067**	-0.636**
resource allocation			-0.493**
Adjusted R ²	-0.019	0.816	0.843
△R ²		0.835	0.027
F Change	ns	564.114**	21.948**

β coefficients presented a t test with* p<0.05 ** p<0.01

Test of mediation

	B	SE B	β	t	p
Top management support on resource allocation	0.875	0.035	0.910	24.999	0.000
resource allocation on Intention to Leave	-0.493**	0.103	-0.402	-4.769	0.000
Top management support on Intention to Leave	-0.633**	0.099	-0.538	-6.378	0.000

Indirect effects of Top management support on Intention to Leave through resource allocation	Normal theory approach		Bootstrap approach		
	Z	P	Boot estimates (SE)	95% CI	
				LL	UL
Indirect through resource allocation	-4.999	0.000	0.086	-0.529	-0.185

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From what had been discussed, top management support plays a positive role in team goal, team quality and team productivity. And it has a negative effect on intention to leave. Therefore, we said that Hypothesis 1 are supported except team commitment. Moreover, there are also positive relationship between resource allocation and team goal, team quality, team productivity and team commitment. So, hypothesis 2 are supported except team commitment. We also find that resource allocation can mediate the relationship between top management support and team goal, team quality, team productivity and team commitment. Hence, hypothesis 3 are supported except team commitment.

5. Discussion and conclusions

5.1. Implications

In this study, the relationships among top management support, resource allocation and team effectiveness in Chinese hospital are thoroughly investigated by way of questionnaire. The result shows that top management support has a significant, positive effect on team effectiveness from different aspects like team-oriented commitment, goal, quality and productivity. As the same time, top management support can reduce team member's intention to leave in team, no matter how big the team size is, education, age, working years or other demographic factors. This result quite fit the argument put forward by Zwikael in 2008 that top management support has a positive effect on project success which was conducted by team (Zwikael, 2008). Lack of top management support was the basic determinant of the failure of team. Moreover, top management support also plays a positive role in the process and quality of resource allocation, which can boost the improvement, rationality and high quality of resource allocation within the whole hospital. In 2012, Chollet said that top management support provides attention and resource to team (Chollet, Brion, Chauvet, Mothe, & Géraudel, 2012). In the end, we also found that resource allocation can positively affect team effectiveness to some extent.

We also test the mediating effect of resource allocation between top management support and team effectiveness. According to the result of empirical test, resource allocation mediates the relationship between top management support and team effectiveness, which reveals the deeper connection among these three factors. It is full of importance that top management control resource to motivate, facilitate and encourage team to work effectively (Bai & Sarkis, 2013). Top management support is critical to the success of a team in establishing the necessary resources and providing them when they are needed (Staehr, 2010).

5.1.1. Theoretical Implications

This study has important implication for hospital management research. First of all, we made effort to find out the effect of top management support and resource allocation on team effectiveness. we found a different finding from previous studies. In one article, the author argues that top management support and resource allocation are on an equal position to play a role in the team effectiveness of the organization's operation and management (Kanwal, Zafar, & Bashir, 2017). But overall, we found that our hypothesis was well supported. This article has proved that top management support actually has a positive impact on resource allocation. This will facilitate a deeper substantive understanding of top management support and resource allocation. At the same time, the results of our article also express a deeper fact: the mediating role of resource allocation in the mediation between team effectiveness and top management support. From this perspective, this article explores the deeper relationships that exist between these factors. Such results also confirm an as-yet-unproven inference in a study that the importance of resources may play an important role in team effectiveness and organizational success. The data confirm this assertion.

Secondly, this study introduced team effectiveness including how to measure and its benefits in management and demonstrated the mediating effect of resource allocation in the relationship between team effectiveness and top management. Team effectiveness belongs to an meso-lever management content, which can represent the lever of macro- management to some extent. Many scholars directly study the outcome of finance, macro-lever construct and organizational lever outcome. From this study, it well fills the gap which is seldom researched before in academical world. This study further enriches the literature on the ways of how organizational factors influences team effectiveness.

Thirdly, this study draws a conclusion that resource allocation fully mediates the relationship between team effectiveness and top management support. This indicates that top management lever in hospital management can through increasing the aspects

of resource allocation which can contribute to the success and efficiency in team so as to boost team effectiveness. All of these finding can have laid a hard foundation for future academic study and deepen in-depth insights into the mechanisms of more undiscovered roles and effects of research team effectiveness.

5.1.2. Practical implications

Our findings are practically relevant because the direct and mediating relationship among these three variables is important for both researchers and practitioners. These findings may have several applied implications. Firstly, team effectiveness has existed in almost every industry not only in healthcare. Since team-based organizations have become the basic and important model of modern management, how to build an effective team has also become a necessary condition for achieving business objectives and high performance. At this point, many organizations, including governments, are calling for greater team efficiency, both within and between different teams, as an organizational strategy (Commission on the Future of Health Care in Canada, 2002). This research figures out the importance of top management and resource allocation. In order to enhance team effectiveness so as to achieve higher performance and outcome in hospital management, organization can try to devote more top management support or attention and increase the input of relative resource allocation. Supportive top management and enough allocation can have significantly positive effect on team effectiveness.

Today, the healthcare industry faces health care shortages and challenging demands, especially under the impact of COVID-19, which requires comprehensive and long-term planning, as well as new predictive methods that can predict teamwork models (Buske & Newton, 1997). Governments, academia, regulators and professional groups should implement health resource planning strategies that encourage collaborative practices to replace existing models that rarely consider collaborative practices or professions and strengthen teamwork. The study of top management support and team effectiveness in this paper can be a good guide to this aspect. Top

management support plays a vital role in improving team effectiveness.

Only when all levels of the healthcare system work simultaneously can we effectively improve the level of health care in China. At the practical level, health professionals know how to work together to practice, but for health professionals to practice collaboratively in teams, they need to understand the processes required to collaborate and have a common understanding of the concepts of teamwork and teamwork. In addition, organizational and management structures must be in place to support teamwork, and policy directives must provide infrastructure and frameworks so that organizations can prioritize making teamwork a reality.

Secondly, this study also pointed out the mediation role of resource allocation between top management and team effectiveness which provides a deeper understanding of variations in team effectiveness and has practical implications for organizations, managers, and organizational consultants. Therefore, top management should pay greater attention to building and strengthening team effectiveness by managing the reasonable resource allocation to each team. The result suggests that hospital managers who hope to increase team effectiveness in various departments should make sure the top management and resource allocation is on the daily agenda.

5.2 Limitations and Future Research

First, we did not examine the role of organizational culture as a regulatory variable. However, some scholars believe that cultural differences affect team building, which in turn affects team effectiveness, and future research should also consider this aspect (Ali, Li, Khan, Shah, & Ullah, 2020). Different organizational cultures can have different effects on team management. This is an inevitable aspect, and in the future, it is best to incorporate organizational culture into the study of team effectiveness.

The second is about the universality of the study. In order to collect data, we focused on a hospital in China, which makes our data not so universal. However, due to the large population of China, there are many types of hospitals, such as specialized hospitals, hospitals of different and different sizes, tertiary hospitals, secondary

hospitals and so on. These different types of hospitals may have different ways of organizing and managing teams. These factors may have a different effect on the findings. Analyzing the causal relationship between the results and the factors affecting team effectiveness, such as tasks, processes, and environments, should span across the healthcare system. So, in future studies, research in other grades of hospitals may repeat the same study.

Thirdly, the major limitation of the present study is because our respondents are mainly in the same hospital, and because of the complexity of the hospital work and the large scale of the team, the respondents may have the problem of homogeneity and non-representativeness. In the future, we should increase the sample size and expand the survey scope of the questionnaire to other hospitals. In terms of survey factors, especially team effectiveness, commitment and intention to leave are homogeneous. In the future, other survey dimensions can be added to explore team effectiveness, making it more comprehensive. When other factors are added, a pre-experiment can be carried out in a small range, so as to better adjust the content of the questionnaire and improve the quality of the questionnaire.

This model can predict team effectiveness to a certain extent and adapt to the environment and work process of most hospitals. In practice, the means of intervention can be developed according to different situations. It is also important to pay attention to the important role of resources in this process. Develop alternative funding, compensation, and incentive models for existing practices. Develop appropriate resources for promoting teamwork to influence health human resources and promote changes in work practices, and develop incentives to improve performance and reward innovation for effective teamwork. Develop best practices for delivery models that promote collaborative practices by developing interventions, resources, and tools.

Finally, our findings also demonstrate that top management support plays a positive role in team effectiveness and resource allocation. Future research may examine the impact of high-level support on different areas of knowledge across the team effectiveness dimension (collaboration, internal satisfaction, external satisfaction, team survival, team learning, etc.).

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Factor analysis

1. team effectiveness

1.1

Table 1. Exploratory factor analysis of team effectiveness scale.

Significance of change comparing with previous experience to:	Productivity	Goal	Quality
This team fulfills its mission.		0.618	0.515
This team accomplishes its objectives.		0.717	
This team meets the requirements set for it.		0.776	
This team achieves its goals.		0.797	
This team serves the purpose it is intended to serve.	0.708	0.427	
This team has a low error rate.			0.771
This team does high quality work.			0.637
This team consistently provides high quality output.	0.622		0.560
This team is consistently error free.			0.801
This team needs to improve the quality of its work.			0.541
This team uses too many resources.	0.693		
This team is productive.	0.650		
This team is wasteful.	0.786		
Inputs used by this team are appropriate for the outputs achieved.	0.703		
This team is efficient.	0.661		
% of explained Variance	30.9%	25.3%	24.9%
Cronbach's Alpha coefficients	.949	.927	.928

N= 131. Keiser-Meyer-Olkin index = 0.963. The total variance is explained by 3 factors in 81.1%: *Productivity* explains 30.9% *Goal* explains 25.3% and *Quality* in 24.9% of the variance. The factor loading was obtained by Varimax rotation and forced into 3 factors.

1.2

Table 1. Exploratory factor analysis of team effectiveness scale.

Since there is confusion among factors in TEGoal1、TEGoal5 and TEQual3, they are took out to obtain the following new factor analysis results.

Significance of change comparing with previous experience to:	Productivity	Goal	Quality
This team accomplishes its objectives.		.722	
This team meets the requirements set for it.		.773	
This team achieves its goals.		.812	
This team has a low error rate.			.785
This team does high quality work.	.512		.644
This team is consistently error free.			.805
This team needs to improve the quality of its work.	.529		.523
This team uses too many resources.	.670		
This team is productive.	.649		
This team is wasteful.	.775		
Inputs used by this team are appropriate for the outputs achieved.	.735		
This team is efficient.	.750		
% of explained Variance	31.3%	26.1%	25.2%
Cronbach's Alpha coefficients	.898	.912	.928

N= 131. Keiser-Meyer-Olkin index = 0.954. The total variance is explained by 3 factors in 82.6%: *Productivity* explains 31.3% *Goal* explains 26.1% and *Quality* in 25.2% of the variance. The factor loading was obtained by Varimax rotation and forced into 3 factors.

1.3

Since there is confusion among factors in TEQual2 and TEQual5, they are taken out to obtain the following new factor analysis results.

Table 1. Exploratory factor analysis of team effectiveness scale.

Significance of change comparing with previous experience to:	Productivity	Goal	Quality
This team accomplishes its objectives.		.705	
This team meets the requirements set for it.		.794	
This team achieves its goals.		.807	
This team has a low error rate.			.787
This team is consistently error free.			.807
This team uses too many resources.	.684		
This team is productive.	.661		
This team is wasteful.	.787		
Inputs used by this team are appropriate for the outputs achieved.	.746		
This team is efficient.	.763		
% of explained Variance	33.6%	28.2%	22.8%
Cronbach's Alpha coefficients	.898	.912	.860

N= 131. Keiser-Meyer-Olkin index = 0.947. The total variance is explained by 3 factors in 84.7%: *Productivity* explains 33.6% *Goal* explains 28.2% and *Quality* in 22.8% of the variance. The factor loading was obtained by Varimax rotation and forced into 3 factors.

1.4 Commitment

Table 2. Exploratory factor analysis of Commitment support scale.

Significance of change comparing with previous experience to:	Commitment
I am prepared to do additional chores, when this benefits my team.	0.909
I feel at home among my colleagues at work.	0.910
I try to invest effort into a good atmosphere in my team.	0.874
% of explained Variance	80.6%
Cronbach's Alpha coefficients	.877

N= 131. Keiser-Meyer-Olkin index = 0.735. The total variance is explained by 1 factor in 80.6% (single factor). The factor loading was obtained by Varimax rotation.

1.5 Intention to Leave

Table 3. Exploratory factor analysis of Intention to Leave support scale.

Significance of change comparing with previous experience to:	Intention to Leave
I am likely to leave this job in the next two years.	0.931
I would prefer another more ideal job than the one I now work in.	0.945
I have thought seriously about changing agencies since I began working here.	0.936
I hope to be working for this agency until retire. (R)	0.930
% of explained Variance	87.5%
Cronbach's Alpha coefficients	.952

N= 131. Keiser-Meyer-Olkin index = 0.873. The total variance is explained by 1 factor in 807.5% (single factor). The factor loading were obtained by Varimax rotation.

2. top management support

Table 4. Exploratory factor analysis of top management support scale.

Significance of change comparing with previous experience to:	top management support
The top level provides enough resources for the team to run.	0.877
The top level provides reasonable arrangements or suggestions for the team's results.	0.814
Senior management often communicates effectively or in a timely manner with the team.	0.867
Senior management has good expertise or social skills to guide the team or set strategies.	0.884
Top management has power and uses it to support the team and protect team members.	0.887
% of explained Variance	75.1%
Cronbach's Alpha coefficients	.917

N= 131. Keiser-Meyer-Olkin index = 0.841. The total variance is explained by 1 factor in 75.1% (single factor). The factor loading were obtained by Varimax rotation.

3. resource allocation

Table 5. Exploratory factor analysis of resource allocation scale.

Significance of change comparing with previous experience to:	resource allocation
Autonomy: you have absolute autonomy to realize your own ideas in your job.	0.859
organizational support: you can receive enough support when you are facing some problems.	0.871
Collaboration: you have a good collaboration between each other in team.	0.854
Leadership: team leadership is good enough.	0.849
Team climate: team climate is good enough.	0.843
% of explained Variance	73.1%
Cronbach's Alpha coefficients	.908

N= 131. Keiser-Meyer-Olkin index = 0.891. The total variance is explained by 1 factors in 73.1% (single factor). The factor loading were obtained by Varimax rotation.

The questionnaire of team effectiveness in Chinese hospital

Dear sir or madam,

I am a master student of the IBS (ISCTE Business School) AACSB accredited school. ISCTE is a public university situated at Lisbon, in Portugal. This research aims to explore team effectiveness in Chinese hospital. There will not be any criteria for neither right nor wrong towards your answers, thus please select the answer which can explain your thoughts or behavior best. This questionnaire is anonymous and all the information will be only used for this research.

Thank you so much for participating!

Please refer to your actual experience in the past year (12 months), answer the questions and tick the blanks accordingly.

1=Strongly disagree

2=Disagree

3=Neutral

4=Agree

5=Strongly agree

1. Regarding your team we would like to know what do you think about its goals

	1	2	3	4	5
1. This team fulfills its mission.					
2. This team accomplishes its objectives.					
3. This team meets the requirements set for it.					
4. This team achieves its goals.					
5. This team serves the purpose it is intended to serve.					

2. Also regarding your team, we would like to know your opinions about its processes and outputs

	1	2	3	4	5
6. This team uses too many resources.					
7. This team is productive.					
8. This team is wasteful.					
9. Inputs used by this team are appropriate for the outputs achieved.					
10. This team is efficient.					
11. This team has a low error rate.					
12. This team does high quality work.					

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13. This team consistently provides high quality output.					
14. This team is consistently error free.					
15. This team needs to improve the quality of its work.					

3. Concerning the leadership and the support you have, you would like to know your opinion about the following aspects

	1	2	3	4	5
16. The top level provides enough resources for the team to run.					
17. The top level provides reasonable arrangements or suggestions for the team's results.					
18. Senior management often communicates effectively or in a timely manner with the team.					
19. Senior management has good expertise or social skills to guide the team or set strategies.					
20. Top management has power and uses it to support the team and protect team members.					
21. Autonomy: you have absolute autonomy to realize your own ideas in your job.					
22. organizational support: you can receive enough support when you are facing some problems.					
23. Collaboration: you have a good collaboration between each other in team.					
24. Leadership: team leadership is good enough.					
25. Team climate: team climate is good enough.					

4. Concerning yourself, we would like to know your perspectives for the future

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	1	2	3	4	5
26. I am prepared to do additional chores, when this benefits my team.					
27. I feel at home among my colleagues at work.					
28. I try to invest effort into a good atmosphere in my team.					

5. Concerning yourself, we would like to know your perspectives for intention to leave

	1	2	3	4	5
29. I am likely to leave this job in the next two years.					
30. I would prefer another more ideal job than the one I now work in.					
31. I have thought seriously about changing agencies since I began working here.					
32. I hope to be working for this agency until retire. (R)					

Personal information:

33 What's your gender?

- a. Male b. Female

35. What's your age?

- a. 20–30 b. 31–40 c. 36-40 d. 41–50 e. Above 51

36 How many years have you been working?

- a. 1- until 3 b. 3- until 5 c. 5- until 10 d. 10- until 15 e. ≥ 15

35. What's your education level?

- a. Bachelor's degree b. Master's degree c. Doctoral degree d. Others

36. How many people are there working under the direct supervision of the same leader?

- a. ≤ 5 members b. 6–10 members c. 11–20 members d. 21–30 members
e. >30 members

37. How many hospitals have you worked before this one?

- a. 1- until 3 b. 3- until 5 c. ≥ 5

Thanks for your answers.