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The roles of emotional labour and empathy in the relationship between doctor-patient mistrust and burnout

DU Zhenguang

Doctor of Management

Supervisor:

PhD MA Shaozhuang, Associate Professor with Habilitation
ISCTE University Institute of Lisbon

July, 2022



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July, 2022

**The roles of emotional labour and empathy in the relationship
between doctor-patient mistrust and burnout**

DU Zhenguang

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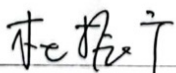
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Abstract

The doctor-patient mistrust and a high level of burnout among doctors in China have affected the quality of healthcare services and are prone to resulting in an increased turnover rate among doctors. This study aims to explore the relationships among doctor-patient mistrust, emotional labour strategies, empathy and burnout and to test the mediating role of emotional labour strategies and the moderating role of empathy.

A self-reported online survey was carried out among doctors in a Grade A tertiary hospital in China from August 9 to 21, 2021, and 339 valid questionnaires were recovered. Hierarchical multiple regression and structural equation modelling were used to analyse and test the hypothesized model.

The study revealed the following results: 1) doctor-patient mistrust is positively related to surface acting while negatively related to deep acting; 2) both doctor-patient mistrust and surface acting are positively related to burnout, while deep acting is not significantly related to burnout; 3) surface acting mediates the relationship between doctor-patient mistrust and burnout, whereas deep acting does not mediate the said relationship; 4) empathy positively moderates the relationship between doctor-patient mistrust and burnout.

The above results suggest that doctor-patient mistrust may cause doctors to adopt surface acting strategy and reduce the performance of deep acting. This will increase the likelihood of burnout among doctors. Besides, when doctors are at a high level of empathy, their perceived mistrust from patients will increase their burnout.

Keywords: burnout; doctor-patient mistrust; emotional labour; empathy; human resource management

JEL: M15; I12

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Resumo

A falta de confiança entre pacientes e médicos junto com um alto nível de burnout nos médicos na China são fatores que afetam a qualidade dos serviços de saúde e que aumenta a rotatividade externa entre a classe médica. Este estudo visa explorar as relações entre desconfiança médico-paciente e o burnout, testando o papel mediador do trabalho emocional (atuação superficial e profunda) e o papel moderador da empatia.

Um questionário online foi respondido por médicos a trabalhar hospital central de grau A na China entre 9 a 21 de agosto de 2021, tendo sido recolhidos 339 questionários válidos. O modelo hipotetizado foi testado com regressões hierárquicas múltiplas e modelos de equações estruturais.

O estudo obteve os seguintes resultados: 1) a desconfiança médico-paciente está positivamente relacionada com a atuação superficial, mas negativamente com a atuação profunda; 2) quer a desconfiança médico-paciente quer a atuação superficial estão positivamente relacionadas com o burnout, enquanto a atuação profunda não está significativamente relacionada com o burnout; 3) a atuação superficial medeia a relação entre desconfiança médico-paciente e burnout, enquanto a atuação profunda não medeia essa relação; 4) a empatia atenua a relação entre desconfiança médico-paciente e o burnout.

Os resultados sugerem que a desconfiança médico-paciente pode levar os médicos a adotarem a atuação superficial reduzindo a atuação profunda. Isso aumentará a probabilidade de burnout entre os médicos. Além disso, quando os médicos detêm um nível alto de empatia, a desconfiança dos pacientes aumentará o seu burnout.

Palavras-chave: burnout; desconfiança médico-paciente; trabalho emocional; empatia; gestão de recursos humanos

JEL: M15; I12

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摘要

中国医生面临的医患不信任以及较高的工作倦怠感影响了医疗服务的质量且容易导致医生离职率上升。本研究旨在探讨医生视角的医患不信任、情绪劳动策略与工作倦怠之间的关联关系，并检验情绪劳动策略的中介作用以及共情的调节作用。

本研究于 2021 年 8 月 9 日 - 21 日，通过自填式线上问卷调查，从某三级公立医院的医生群体中收回有效问卷 339 份。采用分层线性回归和结构方程模型对假设模型进行分析检验。

分析结果显示：1) 医患不信任与表层扮演呈正向关联，而与深层扮演呈负向关联；2) 医患不信任、表层扮演与工作倦怠呈正向关联，而深层扮演与工作倦怠无显著的关联；3) 表层扮演在医患不信任与工作倦怠关系中具有部分中介作用，而深层扮演不具有中介作用；4) 共情对医患不信任与工作倦怠的关系具有减弱两者关系的调节作用。

由上述结果可知：医患不信任可能会导致医生采取表层扮演策略，而减少深层扮演策略的执行，这会导致医生更容易出现工作倦怠。此外，当医生处于高水平共情时，感受到的来自患者的不信任将加剧医生的情绪衰竭。

关键词：工作倦怠；医患不信任；情绪劳动；共情；人力资源管理

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List of Abbreviations

BM: Burnout Measure

BMS: Burnout Measure Short Version

CFA: Confirmatory factor analysis

DDA: Deliberative dissonance acting

DEELS: Discrete Emotions Emotional Labour Scale

DPR: Doctor-patient relationship

DPR-C: Doctor-Patient Relationship in China

EFA: Exploratory factor analysis

ERI: Effort-Reward Imbalance

HELS: Hospitality Emotional Labour Scale

HES: Hogan Empathy Scale

IRI: Interpersonal Reactivity Index

ITS: Interpersonal Trust Scale

JSE: Jefferson Scale of Empathy

MBI-HSS: Maslach Burnout Inventory-Human Services Survey

MBI-GS: Maslach Burnout Inventory-General Survey

MBI-MP: Maslach Burnout Inventory-Human Services Survey for Medical Personnel

NCD: Non-communicable disease

OLBI: Oldenburg Burnout Inventory

QCs: Quality controllers

TiPS: Trust in Physician Scale

WFPTS: Wake Forest Physician Trust Scale

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Chapter 1: Introduction

This chapter introduces the research background, identifies the research problem, clarifies the research purpose, puts forward the research questions, points out the theoretical and practical significance, and presents the structure of this thesis.

1.1 Research background

1.1.1 Doctor-patient relationship and doctor-patient mistrust in China

With China's socio-economic development and the new round of health care system reform, Chinese people's health has been improved in an all-round manner. Yet in the meantime, Chinese people's demand for high-quality healthcare services has been rising (X. Y. Liu et al., 2021; C. Wang et al., 2013); population aging, the rising incidence of major chronic non-communicable diseases (NCDs) and increasing mortality rates have resulted in the prominent contradiction between the supply and demand of quality healthcare resources, leading to the "difficulty and high cost of accessing medical treatment" (Fan & Wang, 2018; Papagianni & Tziomalos, 2018). This gap between expectations and reality has resulted in mistrust and even hatred towards healthcare workers and healthcare institutions by patients and their families when seeking medical treatment. People have gradually formed the stereotype that healthcare workers are "highly professional, poor at communication and unempathetic", exacerbating tensions in doctor-patient relationships (DPRs) as well as rudeness and violence in healthcare settings (He & Qian, 2016; T. Sun et al., 2017; S. E. Zhang et al., 2018).

DPR is a specific therapeutic relationship between a healthcare worker and a patient in the health care delivery process. It is a key interpersonal relationship in the healthcare context. Over the years, DPR has evolved from a largely paternalistic model to a more interactive one (Chamsi-Pasha & Albar, 2016). DPR in a narrow sense specifically refers to the interactive relationship between a doctor and his/her patient, while DPR in a broad sense refers to the patient-centred interpersonal relationship between "the doctor side" engaged in medical practices with the doctor playing a main role and "the patient side" seeking medical treatment.

In recent years, tensions in DPRs or medical disputes have become an issue of keen interest and social concern, mainly due to the continuous occurrence of and persistent increase in doctor-patient conflicts year by year (Feng & Liu, 2016). Starting from 2000, the number of medical disputes in China kept increasing year on year. In particular, the number of medical disputes increased tenfold from 2002 to 2012. Although medical disputes have started to show a year-on-year decline since 2014, the overall situation remains worrying (J. H. Ren, 2020). Currently, medical disputes are becoming increasingly difficult to handle and are now mainly dealt with in courts. Medical disputes are prone to generating social reactions and have become the focus of attention from all sectors of society (M. Y. Liu et al., 2019). Criminal cases arising from medical disputes have also been on the rise, and there have even been vicious incidents where healthcare workers got killed, causing a bad social impact. Strained DPRs have severely impacted the medical services market and seriously affected the work attitudes, behaviours, safety as well as physical and mental health of healthcare workers (Ahmad et al., 2018; Jia et al., 2019; M. Y. Li et al., 2019; X. Y. Zhang et al., 2020), leading to high staff turnover.

The increasing doctor-patient conflicts and medical disputes is attributable to the scarcity and misallocation of medical resources, the gradual deviation of the nature of the healthcare sector from “for public interests” and the imperfect risk-sharing mechanism. More importantly, the mutual mistrust between doctor and patient, which has, in some cases, even degenerated into an interest game, is the most fundamental reason (Y. H. Hu & Zhang, 2015; Ma et al., 2017; Y. Pan et al., 2015). Doctor-patient trust is a concrete expression of interpersonal trust in a specific community of doctors and patients. When the income of healthcare workers is linked to the fees charged for medical services, the basic trust of patients in doctors is somehow undermined, and the doctor-patient mistrust will lead to serious consequences for both doctors and patients, as well as for healthcare undertakings (Yin, 2003).

After China’s reform and opening-up, the planned economy system was transformed into a market economy system. The increase in profit-making practices in the healthcare market has led to a steady decline in patient satisfaction, an increased awareness of the rights of doctors and patients, and a lack of effective mechanisms to resolve medical disputes, leading to increasingly prominent conflicts between doctors and patients. The transformation from a planned economy to a market economy also contributed to the market-oriented reform of healthcare institutions (Jin & Jiang, 1999). Prior to the market-oriented reform of the health care system, serving the people was the main objective of healthcare institutions. The market-oriented reform of healthcare institutions has transformed China’s welfare-based healthcare policy of “prioritising equity while maintaining efficiency” into an economic health care system.

Hospitals are more inclined towards economic interests while pursuing social benefits. In the process of health care reform, healthcare institutions have neglected their nature of serving public interests and instead pursued economic interests to the detriment of equity and fairness in healthcare services.

In the meantime, doctors and patients have gradually become alienated from each other. Some healthcare workers use their knowledge and power to demand additional “rewards” from patients, while some patients provide financial benefits to healthcare workers through informal means such as sending “red packets”. As a result, the roles of doctors and patients are misaligned, and the behaviours of healthcare workers are not in line with the moral and treatment expectations of patients. The pursuit of financial gain has caused healthcare workers and patients to become accustomed to resolving medical disputes through “doctor-patient disputes”. This has led to an overall lack of trust in the medical profession (Z. Li, 2019). Doctor-patient mistrust not only affects the professional status and development of healthcare workers (S. M. Deng et al., 2018; R. Han et al., 2018; Tucker et al., 2015; X. Y. Zhang et al., 2020), but is also closely related to patient satisfaction, treatment adherence, treatment outcomes and health status (De Waard et al., 2018; Diamond-Brown, 2016; Y. Liu et al., 2020; Mahmoudian et al., 2017; Nie et al., 2018). In fact, dealing effectively with doctor-patient mistrust has become a job requirement for healthcare workers, who are required to consume a variety of job resources to maintain a balance and improve job performance (Yan, 2018).

1.1.2 Unbalanced job demands and job resources for Chinese doctors

With progress in social development and healthcare standards, China’s healthcare sector is faced with a new landscape. This change has brought new challenges to the professional environment of doctors, producing a certain degree of impact on doctors, patients, hospitals and even the society to some extent (W. J. Wang, 2019). The work environment and job demands Chinese doctors are dealing with are elaborated as follows.

Firstly, the workload of doctors is increasing as people’s healthcare needs continue to increase. According to the *China Health Statistics Yearbook*, the number of visits per doctor per day in Chinese general hospitals increased by approximately 38.2% from 1990 to 2012, and the number of hospital admissions increased from 2.47 million in 1980 to 179 million in 2012. However, during the period between 1980 and 2012, the total number of healthcare workers in China increased by only 51.2%. The heavy workload and the shortage of healthcare workers have gradually led to an increased workload of each doctor. The imbalance between the demand

and supply of medical resources led to a sharp increase in pressure on doctors, who have to work longer hours to cope with the overload. In an overloaded work environment, the psychological pressure on doctors increases day by day. According to one survey, over 70% of Chinese clinicians worked more than eight hours a day (L. H. Yang et al., 2020). Overload implies an increase in not only working hours or workload but also complex factors such as personal competence requirements, motivations and expectations. It is generally accepted that workload is a subjective experience shaped by the interaction of factors such as the number of tasks, expectations, motivation, time, training, healthcare environment and task difficulty. In the field of clinical medicine, the clinical skills are lifelong due to the long career development and training process. Meanwhile, clinical practice is characterised by high risk and uncertainty, and some diseases cannot be cured even with great efforts made by the doctor. Such a discrepancy in efforts and outcomes can affect doctors' perception of their workload and result in psychological stress.

Secondly, in doctor-patient communication, doctors need to be more emotionally attentive. However, at present, medical conflicts are prominent and incidents of violence against healthcare workers keeps emerging in China. The increasingly strained DPR has become an important cause of doctors' increased work stress. According to the National Health Commission of the PRC, about one million medical disputes occurred each year. On average, about 40 medical disputes occurred in each healthcare facility per year. In the event of a medical dispute, clinicians are at the risk of being insulted, beaten, sued and prosecuted by patients, exacerbating their emotional exhaustion.

However, despite the fact that doctors suffer from work overload and tensions in DPRs, organizational incentives remain inadequate, which leads to a low sense of professional efficacy among doctors. Many hospitals still suffer from such problems as rigid management systems as well as unreasonable incentive systems and performance appraisal systems. Clinicians with low titles often do not have the right to participate in organizational decision making. Their reasonable claims for performance awards and title appointments are not taken seriously by their supervisors, and their professional values are not well reflected. What is worse, their career advancement pathways are not smooth; many outstanding young doctors are not recognised or put in important positions. As a result, clinicians suffer from reduced work motivation and a low sense of professional efficiency.

Furthermore, given the limited internal hospital resources, there is intense competition among clinicians for the distribution of tasks, bonuses and promotion quotas as well as mutual suspicion, jealousy and engagement in small groups among colleagues. All these factors reduce

clinicians' sense of belonging to the organization and affect their family and social interactions outside the organization. Faced with regular intense work, clinicians may work overtime around the clock and may not even be able to go home all night or for days on end, leaving them with much less time to devote to family and social activities. The role overload caused by multiple roles, such as the role of a doctor, the role of a parent and a child, and the role of a citizen, are more likely to cause burnout among doctors.

To a certain extent, the negative public opinion environment also adds to the psychological burden of doctors. With the increase in adverse medical events, society has taken the healthcare sector more seriously. Firstly, the media tend to focus more on patients' needs and ignore doctors' objective explanations. Secondly, some media outlets selectively report events. They tend to deliberately exaggerate facts to create a sensation and focus excessively on clinicians' medical errors and excessive treatment while turning a blind eye to clinicians' efforts to safeguard patients' lives and health. Meanwhile, China's existing healthcare regulations are not fully developed. As a result, clinicians' legitimate rights and interests cannot be guaranteed in the event of medical disputes, increasing risks for clinicians. Particularly, since the introduction of the reversal of the burden of proof system, doctors tend to adopt self-protective behaviours in medical practices to avoid medical disputes. The biased guidance of the media has created an unfavourable public opinion environment for healthcare workers. In recent years, the Chinese media have been paying increasing attention to medical disputes. Some media over-exaggerated the facts while some reported events in a one-sided and non-objective manner (G. Wang, 2018). Due to information asymmetry, patients are often seen as the vulnerable party in DPR (Y. H. Xu & Zhu, 2004). As a result, doctors often have to suffer unfair treatment in public opinion, which to a certain extent harms the image of doctors and leads to a more negative social impact.

Doctors also face higher occupational health risks than other occupational groups. Doctors are inevitably exposed to a wide range of patients in their practices, making them a high-risk group for bacterial and viral infections (G. Wang, 2012). In the treatment process, doctors are closely exposed to physically and chemically harmful factors such as drugs and medical devices, which also has some impact on their lives and health. In China, doctors' health risks are caused by not only physical and chemical hazards but also verbal and violent attacks by patients (G. L. Han et al., 2019).

However, though doctors are working in a demanding and challenging work environment, the support they receive is limited, which are not able to sustain doctor's professional and quality healthcare service. A heavy workload, poor working conditions, pressure from the

hospital and the patient side, pay-reward imbalance, role conflict, work-family imbalance and low organizational support become work stressors in doctors' professional environment, causing doctors to experience negative emotions such as depression and anxiety (T. Sun et al., 2017; S. E. Zhang et al., 2018). Healthcare workers need to meet high requirements for knowledge and expertise and face high risks. Because of this, they are sensitive to the remuneration and social recognition they receive for their work. This is particularly true for doctors working in public hospitals whose work attitudes are influenced by whether their own value can be reflected in their professional environment, mainly in the forms of remuneration and social status (W. Y. Chi & Zhou, 2018). However, although Chinese doctors' income levels fall in the upper middle-income range of the society, they are still far below the income levels of doctors in most countries around the world.

1.1.3 Doctor's emotional labour in Chinese healthcare setting

Doctors are faced with many unfavourable factors in their interpersonal interactions with patients and their families at individual, organizational and social levels (J. D. Wu et al., 2011), which significantly challenge their emotional expressions at work. This affects not only the physical and mental health of doctors but also the quality of healthcare services (Qian et al., 2019; S. E. Zhang et al., 2018). Specifically, to cope with doctor-patient mistrust, doctors' need to engage and perform emotional labour extensively by regulating and managing their emotional in order to deliver healthcare services.

In the organizational context of a healthcare facility, doctors need to interact well with the patient side (patients and their families, caregivers, etc.) and other employees in the organization (leaders, colleagues, subordinates etc.) to deliver high quality healthcare services and achieve personal and organizational performance. In these two different interaction contexts, doctors perform a great deal of emotional labour, which has an impact on their attitudes and behaviours at work and on their physical and mental health (L. Liu, P. Y. Xu, et al., 2018; Psilopanagioti et al., 2012; Riley & Weiss, 2016; Rogers et al., 2014).

The concept of emotional labour was put forward by Hochschild (1983) who defined it as "the management of feelings to create bodily and facial displays compliant with social requirements" and argued that "emotional labour is sold for a wage and therefore has exchange value" (Hochschild, 1983, p. 7). Emotional labour is a common phenomenon in interpersonal relationships, particularly in the service sector. There are two recognised emotional labour strategies: "surface acting" and "deep acting". When individuals engage in surface acting, they

do not change their inner feelings, but only act out the emotions and behaviours to meet the organization's expected emotional displays; while when people engage in deep acting, they actually modify their inner feelings through proactive thinking and efforts to align their true emotions with the organization's expected emotional displays (Hochschild, 1983). In 1993, Ashforth and Humphrey (1993) put forward "the expression of genuine emotion" as a third emotional labour strategy. The expression of genuine emotion means that the individual's true feelings are consistent with the organization's desired emotional expressions, and that the feelings are expressed naturally without conscious emotion regulation. These three emotional labour strategies produce differentiated organizational behaviours and health outcomes due to differences in the way mental regulation is processed (A. A. Grandey & Melloy, 2017; Humphrey et al., 2015).

Emotional labour can directly result in internal conflict and dissonance, strained interpersonal relationships and loss of affective functioning, which in turn negatively influence individuals' work attitudes (burnout, job satisfaction etc.) and behaviours (organizational citizenship behaviour, turnover, absenteeism, etc.), physical and mental health (depression, anxiety, sleep problems and substance abuse, etc.) and work performance. Existing studies have shown that different emotional labour strategies can significantly influence the burnout levels in various occupational groups, and that different burnout levels will produce different impact on emotional labour strategies. When performing surface acting, employees' inner feelings are generally inconsistent with the emotions the organization requires them to display, which may easily cause them to experience emotional dissonance and burnout. However, when employees perform deep acting, their true feelings are in alignment with the emotions the organization requires them to display, which will reduce the employee's burnout. Furthermore, because performing deep acting is a type of nonconscious emotion regulation, it does not impair employees' emotional and psychological well-being. Specifically, surface acting has a significant positive effect on emotional exhaustion and depersonalisation dimensions of burnout (A. A. Grandey, 2003; Zammuner & Galli, 2005a), while its effect on reduced personal accomplishment dimension of burnout can be positive (Zammuner & Galli, 2005a) or negative (Brotheridge & Grandey, 2002). Deep acting has a significant negative effect on emotional exhaustion (Hur et al., 2013; Hwa, 2012) and a significant positive effect on the sense of personal accomplishment (Brotheridge & Grandey, 2002; Brotheridge & Lee, 2002).

Chinese scholars have found that both the total scores of emotional labour and the scores of surface acting and deep acting strategies are positively related to emotional exhaustion, that deep acting is positively related to depersonalisation, and that the total scores of emotional

labour and the score of deep acting are also positively related to reduced personal accomplishment (L. Liu, Q. Ma, et al., 2018). In addition, deep acting strategy can significantly positively predict the DPR perceived by healthcare workers (Qian et al., 2019). In a study of the mechanism influencing the DPR, it was found that exposure to workplace violence had a significant positive predictive effect on the surface acting strategy of healthcare workers. Specifically, the higher the level of workplace violence experienced by healthcare workers, the more they would tend to adopt surface acting strategy to deal with their patients, which will produce negative consequences for both patients and doctors (X. Q. Yang, 2017). Negative emotions at work can also influence the performance of emotional labour strategies. When employees are experiencing negative emotions, they will be more likely to adopt the emotional labour strategy of surface acting (Brotheridge & Lee, 2003).

1.1.4 Doctor's burnout

Healthcare workers in China suffer from high levels of burnout. A recent systematic review showed that the overall incidence of burnout among Chinese physicians was 75.48%, with a 48.64% incidence of emotional exhaustion. The high levels of burnout have become a prominent management issue in urgent need of resolution (Y. Y. Sun et al., 2019; Zheng et al., 2022; S. Y. Zheng et al., 2016). Doctor-patient mistrust, a poor professional environment, inadequate coping resources and dysfunctional emotion regulation may all be important causes of burnout. Burnout is a series of psychological and physiological syndromes, including emotional exhaustion, depersonalisation and reduced personal accomplishment, that occur as a result of stressful reactions to chronic work stressors in the work environment (Y. Li, 2003; Maslach & Jackson, 1981). Among the three core components, emotional exhaustion refers to the individual's subjective feeling that his/her emotional resources are excessively consumed at work and that he or she feels exhausted and depleted, and it is the core component of burnout; depersonalisation is a negative, cold and excessively distant emotional state manifested by an individual at work when treating service recipients or dealing with his/her job tasks; reduced personal accomplishment refers to the decrease in an individual's sense of competence, achievement and well-being in the workplace.

Many empirical studies have been conducted among healthcare workers to explore and explain the factors influencing burnout and the mechanism of its occurrence and development, which provide a basis for the prevention and management of burnout among healthcare workers. Firstly, burnout among healthcare workers is influenced by the combination of personality traits,

work conditions and organizational factors, and is the result of the combined effect of the individual's internal and external factors. In terms of gender, Y. Wei et al. (2019) conducted a questionnaire survey among doctors in Chinese tertiary hospitals and concluded that female doctors are more likely to suffer from burnout than male doctors. Age is also an important factor influencing burnout among doctors. Most studies suggest a negative association between age and burnout. Specifically, as age increases, the level of burnout among doctors decreases (Bazmi et al., 2019). As to marital status, married people experience higher levels of burnout than single people (Abarghouei et al., 2016). In addition, the effect of personality traits on burnout has been widely validated. Cui and Yi (2013) found that the personality trait of psychoticism is positively related to depersonalization and reduced personal accomplishment dimensions of burnout. Y. P. Guo et al. (2015) also identified a positive relationship between psychoticism and depersonalisation as well as a positive relationship between psychoticism and emotional exhaustion. Doctors in the emergency department are more likely to experience burnout than doctors in other departments, but their level of job satisfaction is higher (Boutou et al., 2019). The study conducted by Amofo et al. (2015) revealed a negative relationship between job satisfaction and burnout. Brown et al. (2019) demonstrated that burnout is negatively related to organizational commitment, that increasing employee satisfaction with the organizational environment is more important for retention than reducing workload, and that organizations need to create a work environment that is healthy and supportive and recognises employees' contributions at work to reduce burnout. Sui and Jia (2018) argue that the two dimensions of burnout, namely emotional exhaustion and depersonalisation, are significantly affected by perceived organizational support, which can reduce burnout levels. The result is consistent with the findings of Z. W. Wu et al. (2019).

1.1.5 Job Demands-Resources model and conservation of resources theory

In facing and coping with doctor-patient mistrust, doctors may mobilise emotional resources to perform the necessary processing of emotional expressions that subsequently have different psychological and behavioural effects on patients and themselves. Thus, Job Demands-Resources (JDR) model and the conservation of resources (COR) theory are the relevant theories to apply to examine how Chinese doctors perform emotional labour (and its strategies) to deal with doctor-patient mistrust (as a job demand) and how the use of emotional labour strategies lead to burnout.

The JD-R model assumes that job demands and job resources, as two important job elements, have a direct and interactive effect on employees' work status and behaviour (Demerouti et al., 2001). The JD-R model contains two main assumptions. The first assumption is that the job elements in each occupation can be classified into two main categories: job demands and job resources. Specifically, job demands are task characteristics that require sustained physical and psychological effort or cost to achieve, while job resources are job characteristics that provide physical, psychological and emotional support or assistance to facilitate learning, growth and development. In a sense, adequate job resources can help employees reduce the effort or cost required to meet their job demands. The second assumption of the JD-R model is that job demands and job resources will stimulate two potential psychological processes: the "health impairment process" and the "motivational process". The "health impairment process" refers to the fact that high job demands will constantly drain employees' physical strength and energy, and if employees are not supported by job resources, they may suffer negative results such as burnout. The other is the "motivational process", referring to the fact that job resources have the function of internal and external motivational incentives, which can increase employees' dedication and produce positive effects such as high performance. Based on these two assumptions, the JD-R model argues that the job demands faced by employees and the job resources available to them will respectively play a role in employees' performance; in the meantime, job demands and job resources interact with each other. On the one hand, job resources significantly moderate the "fatigue process" caused by job demands. Specifically, the negative effects of job demands are reduced for employees with sufficient job resources, while high job demands lead to more severe negative outcomes when job resources are scarce or not replenished in a timely manner. On the other hand, the "motivational process" of job resources is also more pronounced under high job demands. Specifically, the positive effect of job resources increases for employees with high job demands.

The COR theory is one of the key theories for understanding how individuals cope with external pressures and dilemmas and describes the process by which resources interact between the individual and the social environment. The core idea of the COR theory is that individuals always tend to seek and possess an adequate variety of resources to survive or cope with threats. When an individual perceives that his or her resources are likely to be lost, or have been lost, and that the desired resources are not available, he or she will experience psychological stress and tension, which may lead to a variety of psychological and behavioural outcomes. According to the COR theory, individuals perceive resources to be material, personal and valuable things, or the ways, abilities and means to obtain them, such as food, money, resilience and optimism,

self-efficacy, social support, career development opportunities, participation in decision-making and autonomy (De Cuyper et al., 2012; Hagger, 2015; Van Woerkom et al., 2016; W. L. Wu & Lee, 2020). In the workplace, individuals always try to preserve or maintain existing resources that are manageable and expect to obtain more resources to achieve a particular task goal. However, when individuals are at the risk of losing resources at work, or when their resources do not meet their job demands, or when they do not receive the expected return on their investment of resources, they are prone to work attitude problems such as burnout and reduced sense of satisfaction (De Cuyper et al., 2012; Prapanjaroensin et al., 2017).

1.1.6 Research background framework

As shown in Figure 1.1, lack of social trust, inadequate financial investment, misconduct by the doctor side, inadequate perceptions of the patient side and a deteriorating public opinion environment are important reasons for strained DPRs and increasing doctor-patient mistrust in China. When doctors perceive mistrust, they will adopt different emotional labour strategies to cope with this work stressor. Failure of the adopted coping strategy will lead to burnout among doctors. On the other hand, resources from individuals or organizations can help doctors cope with the challenges of an adverse work environment and mitigate the harm caused by doctor-patient mistrust or emotional labour.

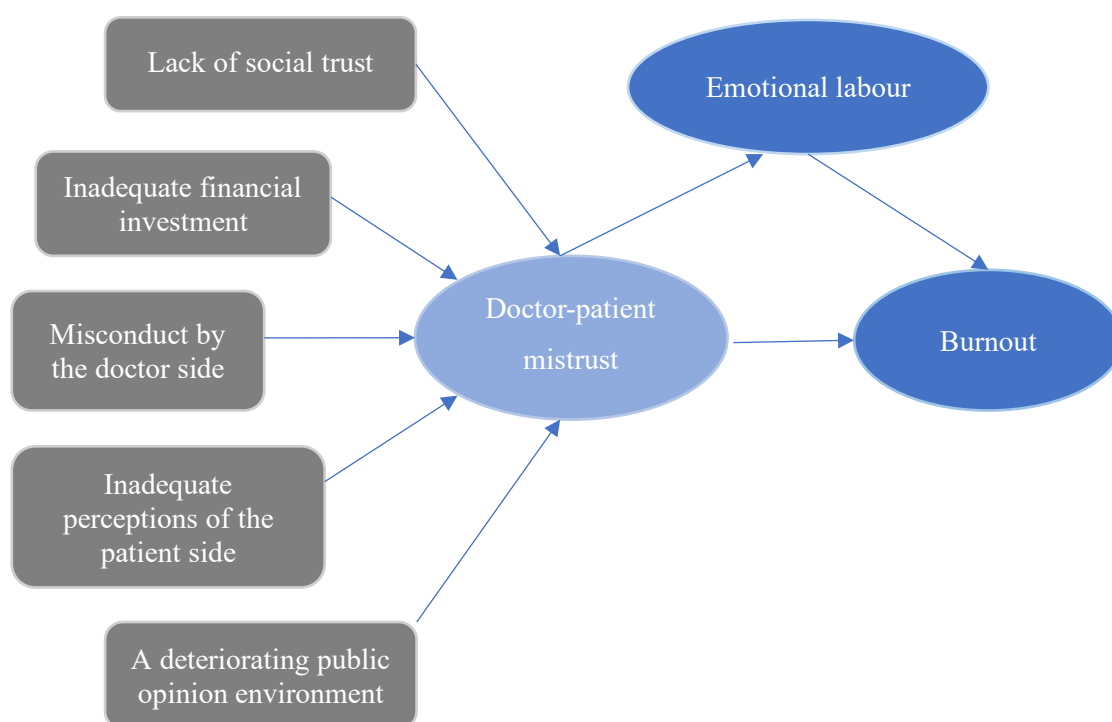


Figure 1.1 Research background framework

1.2 Research problem

Doctor-patient mistrust has become widespread in doctor-patient interaction, producing a serious impact on the interests of both doctors and patients and the healthy development of healthcare undertakings. However, in the actual professional environment of doctors, doctor-patient mistrust is a consequence of many external factors that doctors have little control over. Thus, this study argues that to deal with the issue of doctor-patient mistrust on daily basis, doctors engage emotional labour which may lead to a high level of burnout among doctors.

1.3 Research purpose

Guided by the JD-R model and the COR theory, this study aims to conduct a cross-sectional quantitative study among doctors in The People's Hospital of Liaoning Province to understand the relationships between doctor-patient mistrust, emotional labour strategies and burnout. In addition to examining the above main relationships, this study is interested in understanding how empathy as a personal resource may moderate the mechanism by which doctor-patient mistrust leads to doctors' work attitude problems. It is hoped that this study will provide a new approach and strategies to the management of doctor-patient mistrust and burnout among doctors in Chinese public hospitals from the perspective of emotional labour strategies and empathy.

1.4 Research questions

To achieve the above research purpose, this study puts forward the following five research questions:

1. As the new round of health care system reform persists and in the context of the normalisation of the COVID-19 pandemic prevention and control, what is the status of doctor-patient mistrust perceived by doctors as well as their emotional labour, empathy and burnout?
2. What are the relationships between doctor-patient mistrust, emotional labour, and burnout?
3. Does doctors' empathy moderate the relationships between doctor-patient mistrust, emotional labour and burnout?

By understanding the above questions, this study may contribute to the literature and to the healthcare sector in China in several ways as discussed next.

1.5 Research significance

1.5.1 Theoretical significance

Doctor-patient mistrust has a serious negative impact on the interests of both doctors and patients as well as the healthy development of healthcare undertakings. This study explores whether doctors can successfully cope with doctor-patient mistrust and maintain positive work attitudes by adopting different emotional labour strategies and utilising personal resources, and whether doctors' empathy moderates the relationships between doctor-patient mistrust, emotional labour and burnout. It is conducive to identifying the relationships between doctor-patient mistrust, emotional labour, empathy and burnout. In addition, this study examines the mediating role of emotional labour strategies and the moderating role of empathy to shed light on the mechanism by which doctor-patient mistrust results in doctors' work attitude problems. In this sense, this study will contribute to the expansion of the JD-R model and the COR theory from the perspectives of doctor-patient mistrust from a Chinese healthcare setting.

1.5.2 Practical significance

This study has practical significance in the following three aspects:

First, this study can shed light on the status of doctor-patient mistrust perceived by doctors in Chinese public hospitals and their emotional labour, empathy and burnout to provide basic information for hospital managers and policy makers;

Second, this study can help find out whether emotional labour strategies mediate the relationship between doctor-patient mistrust and burnout among doctors as well as whether empathy moderates the said relationship and shed light on the mechanism by which these two intrinsic resources interact with each other, thereby providing a reference for hospitals managers and policy makers to take appropriate actions.

This study can provide a new approach to the management of doctor-patient mistrust and burnout among doctors in Chinese public hospitals based on emotional labour and empathy.

1.6 Thesis structure

Based on the above research purpose, research questions and research significance, the structure of this thesis is arranged as follows:

Chapter 1: Introduction. Research background, theoretical basis, research problem, research purpose, research questions, research significance and thesis structure are presented.

Chapter 2: Literature Review. Existing literature on doctor-patient mistrust, emotional labour and its strategies, burnout and empathy is reviewed, involving their definitions, dimensions, influencing factors, outcomes and measurement.

Chapter 3: Research Methods. Participants, sampling methods, survey methods, measures, quality control methods, data management and statistical analysis methods are described.

Chapter 4: Results. Results of descriptive statistics, correlation analysis, hierarchical multiple regression and structural equation modelling are presented.

Chapter 5: Findings and Conclusions. The findings of this study are interpreted and discussed with reference to existing research findings. Implications for relevant stakeholders are pointed out. Conclusions of this study are drawn, limitations pointed out, and suggestions for future research lighted upon.

Chapter 2: Literature Review

This chapter provides a literature review of the concepts of doctor-patient mistrust, emotional labour, empathy and burnout and describes the relationships between them. Then the research hypotheses and theoretical model are put forward based on the JD-R model and the COR theory.

2.1 Doctor-patient mistrust

2.1.1 Doctor-patient relationship and doctor-patient mistrust in China

Doctor-patient relationship (DPR), as a specific therapeutic relationship between healthcare workers and patients in the process of disease diagnosis and treatment, is a core interpersonal relationship in the healthcare context (Pearson & Raeke, 2000). For a long time, DPR has been largely paternalistic. However, as the society progresses, it has evolved into a more interactive interpersonal relationship (Chamsi-Pasha & Albar, 2016). In terms of the concept, DPR can be understood in a narrow sense or in a broad sense. In a narrow sense, DPR is a clear and concrete interactive relationship between doctor and patient; in the broad sense, DPR is more macroscopical and ambiguous as it refers to the relationship between “the doctor side” and “the patient side”. Specifically, “the doctor side” refers to the healthcare institutions engaged in medical practices with doctors playing a key role; and “the patient side” refers to the people, families or groups involved in the act of seeking medical treatment with the patient at the centre (Y. Song et al., 2019).

As a specific interpersonal relationship in the healthcare sector, DPR is often strained due to a variety of factors. In many cases, the factors that lead to or trigger doctor-patient conflicts and disputes, or even serious conflicts and confrontations between doctors and patients, are complex and varied, and there are no obvious rules to follow. There are medical disputes arising from the improper handling of medical liability incidents on the part of the doctor. There are also vicious incidents in which patients disrespect healthcare workers during the consultation process and use verbal abuse, assault or even serious violence against doctors, causing doctors to suffer physical injuries or even death (Dai et al., 2014; Feng & Liu, 2016).

To explore the reasons for strained DPRs, it is important to focus on healthcare services in the research on strained DPRs. Life and diseases are complex by nature. Genetic differences

among individuals lead to distinct differences in the onset, development and progression of diseases. As a result, there are significant limitations in the medical diagnosis and treatment of diseases. There is asymmetry between doctors and patients in terms of medical expertise and treatment information. In the process of diagnosis and treatment, the patient side wants to be cured and to have a good prognosis. However, the existing diagnosis and treatment capacity and expertise of the doctor side are not always able to meet the patient side's expectations and requirements. This had led to a conflict between the doctor side and the patient side regarding disease treatment. However, whether the cause lies in the doctor side or the patient side, the conflict can further lead to problems in some healthcare delivery links. These problems, if not dealt with properly and in a timely manner, can turn into disputes and even conflicts. Tensions in DPR may seem to be small-scale problems between the doctor side and the patient side. However, when such tensions occur frequently in society, or even when crimes involving doctors are committed, causing a great deal of public concern and affecting the mentality of the public, such tensions will be magnified as a universal phenomenon in society. In that case, people will become sceptical and even accusatory towards the health care system and health policies (W. Liu et al., 2020; Y. Q. Wang et al., 2019). Although tensions in DPR will continue to exist in China's new stage of socialist modernization with Chinese characteristics, the new round of health system reform will focus on solving the various problems in the operation of healthcare services, providing new ways and means to gradually resolve tensions in DPR.

The doctor-patient trust represented in the specific group of doctors and patients is a special interpersonal trust relationship that is distinct from the ordinary interpersonal trust relationship. Doctor-patient trust is the most central part of DPR. From the patient side's perspective, doctor-patient trust refers to the patient's perceptual behaviour towards the doctor when he/she chooses a doctor and seeks medical treatment with both suspicion and expectation (X. J. Hu & Yang, 2016). Conversely, doctor-patient mistrust refers to a diagnosis and treatment process where the lack of trust and understanding between the patient and the doctor affects the patient's choice and access to care as well as the doctor's treatment process.

2.1.2 Models of doctor-patient relationship

To resolve the tensions in DPR, it is necessary to first trace the origin and development of the concept of DPR to gain a better understanding of it. Researchers tend to classify DPRs into different models. People's different understandings of DPR have led to the classification of two DPR models, namely the competency-based DPR model and the moral DPR model. Such

classification has laid the theoretical foundation for the research on DPR (J. Zhang, 2017).

Parsons (1951) proposed an “asymmetric model” based on the asymmetrical nature of information in DPR, arguing that the doctor or the doctor side is in a clearly dominant position in DPR. Firstly, doctors have received training in medical knowledge and skills and possess the knowledge and expertise to treat diseases. Besides, doctors have the right to treat, enjoy legal and moral protection, have a monopoly on the expertise to successfully treat diseases, and are thus authoritative. Furthermore, during the consultation and treatment process, patients are largely dependent on the doctor side. When a patient needs treatment for an illness that he or she cannot do anything about, the patient has no choice but to turn to the doctor and develop a dependent relationship with the doctor. Parsons’ “asymmetric model” is a further exploration of the traditional DPR. With the development of science and technology, the improvement of health literacy as well as the quantitative and qualitative changes in health care services, this traditional “asymmetric model” has become largely incompatible with the reality. Particularly, in the case of common and frequently-occurring diseases, patients are more aware of their own diseases and have greater autonomy in the process of diagnosis and treatment, weakening the absolute dominance of doctors. Therefore, problems in DPR in the new situation need to be explained by a new DPR model.

Building on Parsons’ “asymmetric model” of DPR, Szasz and Hollender (1956) concluded that the severity of the patient’s disease was the determining factor in the doctor-patient interaction. In the diagnosis and treatment process, there are differences in the positions, level of activity and strength of interaction between doctor and patient. Because of this, Szasz and Hollender (1956) identified three models: the Model of Activity-Passivity, the Model of Guidance-Cooperation and the Model of Mutual Participation (Szasz & Hollender, 1956). The Model of Activity-Passivity captures a process in which the doctor makes decisions when the patient is severely ill, unconscious or totally incapacitated, and the patient is completely passive, with little or no doctor-patient interaction; the Model of Guidance-Cooperation depicts a process in which the doctor provides appropriate treatment to a patient with an acute or infectious disease by understanding the patient’s symptoms and medical history; and the Model of Mutual Participation reflects a process where both the patient and the doctor participate fully in the treatment of a chronic disease with the patient knowing his/her own condition and having a greater degree of autonomy in the process (Szasz & Hollender, 1956).

By combining ethics with the characteristic of doctors and patients, Veatch (1972) identified four DPR models: the Engineering Model, the Priestly Model, the Collegial Model and the Contractual Model. Specifically, 1) the Engineering Model is a model with a greater

emphasis on expertise and competency in which the doctor is able to give the patient the most accurate picture of the illness and enables the patient to decide whether or not to allow the doctor to treat the illness; 2) the Priestly Model is one in which the doctor has absolute authority over the patient, and the patient is completely passive, has no autonomy, and only cooperates with the doctor in the process of treatment; 3) the Collegial Model refers to the formation of mutual trust and respect between the doctor and the patient in the treatment process, with both parties having equal status and working together to complete the treatment process. In practice, however, the Collegial Model is often difficult to develop due to limitations in such aspects as social class as well as educational and cultural background; and 4) the Contractual Model is one in which the doctor and the patient are naturally regarded as the responsible parties in the treatment process, with their responsibilities and powers specified in some terms and conditions. The equality of the relationship between the two is not always guaranteed, but both parties are responsible for the decisions they make for their mutual benefit.

Although there is no fundamental difference in the understanding of DPR models between Chinese and Western scholars, there are some differences in the classification of DPR models due to such factors as the level of social development, the level of medical technology as well as the historical and cultural backgrounds. Parsons (1951), Szasz and Hollender (1956) and Veatch (1972) argued that there are differences between different DPRs, but some scholars hold that their understanding is solely based on medical technology and that the model they were referring to was the same competency-based model. In addition, moral, value-based, legal, and financial interest-based DPRs are also common types of DPR models (Q. Z. Wang et al., 2009).

2.1.3 The doctor-patient trust dilemma in China

During the planned economy period, the Chinese government implemented a system of publicly-funded healthcare. Particularly, employees with urban *hukou* (household registration status) or those working in enterprises or public institutions could go to hospitals for free or at little cost. Doctors' salaries were paid entirely by the state treasury and had nothing to do with the act of prescribing or examining diseases, nor with the performance of the hospital. Under such a health care system, DPRs were harmonious, and there was absolute understanding and trust between doctors and patients. However, the drawback of this health care system soon revealed itself as it led to a serious waste of healthcare costs. The state treasury was overwhelmed. By the late 1970s, China initiated the first round of health care system reform, which lifted the curtain of the path of health care system reform in China. The health care

system reform in this stage implemented a policy based on which public hospitals shall take responsibility for their own profits or losses while power was decentralised and profits transferred to public hospitals. The government no longer gave public hospitals adequate financial support, yet still regulated them and retained the public hospital system. In the early 1980s, nearly 60% of the revenue of public hospitals came from the government finance; by 2003, the percentage had dropped below 10% and remained at around 7% ever since (Barber et al., 2014; Yip et al., 2020). On the one hand, the government required hospitals to be responsible for their own profits or losses; but on the other hand, it strictly limited the fees for services that reflected the value of healthcare workers, such as the fees for registration, consultation and surgery. In most public hospitals, the registration fee for a chief physician was maintained at around five-to-ten yuan for years. In this policy context, hospitals had to make up for the unrealised labour value by charging fees for examination, drugs and equipment to maintain their survival and development.

To ease the pressure on the survival of public hospitals, China's National Development and Reform Commission (2006) stipulated in its *Opinions on Further Rectifying the Pricing of the Drug and Medical Services Market* that the prices of drugs sold in healthcare institutions at or above the county level should be strictly based on the actual purchase prices, with a mark-up of no more than 15%, and that the mark-up rate for Chinese herbal medicines could be appropriately relaxed, but in principle should be kept within 25%. Since then, public hospitals could maintain their own survival and development by means of a mark-up on drugs. The implementation of the drug mark-up policy may seem to have ensured the survival of public hospitals, but it posed an even greater challenge. Drug revenue quickly became an important source of revenue for public hospitals. Because hospitals could generate income from drugs, and higher drug prices meant higher income for hospitals, drug prices were gradually raised. In the meantime, doctors' income was passively linked to their medical practices, leading to widespread problems such as over-prescription, over-examination and over-treatment, and subsequently a significant rise in medical costs for patients. Over time, the burden on the people became heavier and heavier, forming a vicious circle. In this context of "hospitals covering expenses with drug sales", the image of doctors was gradually alienated as "drug sellers", and over-prescription and over-medication became common practices. "The difficulty and high cost of accessing medical treatment" became a new normal. The image of doctors as "angels in white" that heal the wounded and rescue the dying was significantly undermined. Instead, their treatment practices were no longer for the sake of treatment only but were accompanied by commissions and financial gains. This notion has gradually taken root in the hearts of patients,

which has, to a large extent, worsened DPRs.

It is obvious that the health care services provided by public hospitals for the purpose of seeking profits have seriously undermined people's respect for and trust in doctors and healthcare institutions. Medicine itself is a science of uncertainty, and the diagnosis and treatment of diseases are also full of uncertainty. In the context of focusing on the prevention and treatment of chronic NCDs, the complexity of diagnosis and treatment of major chronic diseases such as malignant tumours, cardiovascular diseases, neurological diseases and metabolic diseases has gradually increased. In the event of treatment failure, there is a great chance that patients and their families' dissatisfaction with doctors' services will explode instantly as patients have been suffering from the pain of illness and their families need to bear the high cost of treatment. Such explosion will destroy the original DPR and result in doctor-patient conflicts. Chinese doctors who profit from the current health care system are constantly faced with the risk of the outbreak of doctor-patient conflicts. Because of this, a top priority of the new round of health care system reform is to break the system of "hospitals covering expenses with drug sales" and rebuild harmonious DPRs. However, there is much to do and a long way to go.

In 2012, the General Office of China's State Council (2012) printed and distributed the Major Arrangement on Deepening Health Care System Reform, which abolished drug mark-up fees in public hospitals. In 2015, the General Office of China's State Council (2015) printed and distributed the "Guiding Opinions on a Comprehensive Pilot Reform in Urban Public Hospitals", which abolished the profit-seeking mechanism of public hospitals, optimised the compensation system for public hospitals, removed the revenue from drug mark-ups, and retained only two channels: service charges and government subsidies. This change was expected to fully embody the labour value of healthcare workers. In 2017, China's seven departments and ministries jointly issued the Notice on the Comprehensive Reform of Public Hospitals (China's National Health and Family Planning Commission et al., 2017), requiring all prefectural-level cities and municipalities to introduce implementation plans for the comprehensive reform of urban public hospitals by July 31 of that year; by September 30, 2017, the comprehensive reform of public hospitals had been fully implemented, and all public hospitals had abolished drug mark-ups (except for Chinese herbal pieces). Abolishing drug mark-ups and raising the prices of medical services are right steps taken in the direction of the health care system reform. However, the implementation was beset with difficulties. Under the public-funded healthcare system, it was taken for granted that the government should provide low-cost or free healthcare services to patients. So, no matter where the government raised

prices for healthcare services, patients might think that the government had undermined their interests. This process requires a long period of friction and gaming among stakeholders such as patients, healthcare workers, hospitals and health insurance departments. Obviously, good DPRs have become one of the key indicators of the success of the health care system reform.

2.1.4 Existing studies on doctor-patient trust in China

Research on DPR in China started in the 1980s. Researchers were mainly concerned with issues such as the importance of doctor-patient trust as well as perceived roles, information asymmetry, communication problems and the ethics of trust between doctors and patients. Research perspectives mainly included sociology, economics, law and ethics. Researchers studied the importance and influencing factors of doctor-patient trust as well as the coping strategies from different perspectives. Within the framework of ethics, D. X. Zheng (2007) analysed the conflict of interests between doctors and patients during the transitional period from a legal perspective and explored the ethical issues of DPR. Although information asymmetry between doctors and patients in the treatment process is one of the preconditions for the lack of doctor-patient trust, the fact that doctors' behaviours are driven by financial interests and patients have to bear serious financial burden as a consequence is the root cause of doctor-patient mistrust (X. F. Lu & Zhang, 2019). Doctors have the medical knowledge and expertise to treat diseases and are in almost complete control of the treatment information during the entire health care delivery process. Patients, in comparison, lack the relevant medical knowledge and skills and are in most cases in a passive position. This typical information asymmetry is one of the major influencing factors of DPR.

For a long time, the inadequate provision of health care resources, increasing profit-seeking tendency of health care providers and doctors, compromised public welfare nature of health care services in the market economy, and high health costs borne by residents in the process of seeking medical treatment have been the underlying economic reasons for doctor-patient mistrust (Wang, 2017). In addition, the rule of law in medical affairs can enhance the trust between doctors and patients, while doctor-patient trust is an important basis for the successful implementation of the rule of law in medical affairs (Shi & Zhang, 2015). From an integrated perspective of medical ethics, sociology and psychology, D. L. Li and Lu (2011) explored patients' preconceived trust and preconceived mistrust in doctors and the influencing factors, with patients as the centre. In terms of the classification of doctor-patient trust models, Lv (2020) argues that doctor-patient trust is an organic unity of competency-based trust and moral trust.

However, with important knowledge and technological breakthroughs in the biomedical model, people tend to rely more on medical technology to treat diseases, which seems to render DPR insignificant in disease treatment. There is a greater emphasis on purely technical expertise in the treatment process, where the doctor is responsible for the diagnostic and treatment techniques and provides all the fact related to the disease and treatment to the patient, leaving it to the patient to decide whether or not to allow the doctor to treat the disease.

In terms of the content of research on DPR, Chinese scholars have mostly focused on the information asymmetry between doctors and patients and the importance of doctor-patient trust (Lv, 2020). M. Wang et al. (2015) identified the factors influencing patients' preconceived mistrust of doctors to be the lack of trust in the system, declined social reputation of the doctor side and information asymmetry and put forward corresponding countermeasures to reshape doctor-patient trust based on these aspects. Liao (2015) argued that the long-standing conflict between doctors and patients over economic interests under the system of "hospitals covering expenses with drug sales" was one of the major underlying causes of compromised doctor-patient trust. Tucker et al. (2015) conducted a qualitative study in seven hospitals in Guangdong Province with doctors, nurses, managers, patients, and patients' families as sample. Using participant observation and in-depth interview methods, they found that doctor-patient mistrust was rooted in a strong sense of inequity. Specifically, patients felt that medications and overall healthcare costs were inflated and that clinical decisions about diagnostic tests and medication prescriptions tended to maximise revenue rather than improving treatment outcomes (Tucker et al., 2015). D. H. Zhao et al. (2016) randomly selected 1,210 respondents from outpatients at two tertiary public hospitals in Shanghai, China to assess patient trust in doctors and to identify the determinants of trust in doctors. The study showed that 67% of the patients had trust or strong trust in their doctors and that the profit-seeking orientation of doctors was not the most critical reason for patients' mistrust of doctors. Instead, the most critical reason for patients' mistrust of doctors was information asymmetry between patients and doctors. Age, annual income and education level were significantly associated with trust: patients aged between 18 and 29 years old had low levels of trust in doctors; the higher the patients' income level, the higher their trust in doctors; and patients with other education levels were more likely to trust doctors than those who had only received primary education or less. However, patients' trust in doctors was not significantly related to their gender, marital status and household registration (D. H. Zhao et al., 2016). Lv and Zhao (2019) and Kuai (2021) concluded that negative emotions between doctors and patients during the treatment process can undermine doctor-patient trust. The study by Chai et al. (2020) showed that the position of media reports on DPR,

the direction of commentary and the nature of commentary content did not have a significant effect on the participants' level of trust in doctors. However, an in-depth analysis revealed a triple interaction effect among the position of media reports, the direction of commentary and the nature of commentary content on trust levels as well as a twofold interaction effect of the position of media reports and the nature of commentary content on trust levels. Based on the "risk-vulnerability analysis framework", Z. H. Wang et al. (2019) analysed the factors influencing the vulnerability of doctor-patient trust from within the system and proposed a "Perceived Medical Services-Doctor-Patient Trust Vulnerability Analysis Framework". J. Chen et al. (2021) argue that the collaboration among parties to and multiple actors behind doctor-patient trust constitute a harmonious operating system that includes emotions and morality, and that the interests of the administrative, judicial, financial, governmental, civil, medical and professional bodies involved must be coordinated comprehensively to enhance doctor-patient trust (J. Chen et al., 2021). Using CGSS2012 data, S. X. Chi and Chen (2018) studied the influence of social capital on doctor-patient trust in urban and rural areas. The results showed that for urban residents, special trust, general trust and institutional trust could play a stronger role, while for rural residents, the influence of general trust was weaker compared to special trust and institutional trust.

In the context of the rapid development of the "Internet plus healthcare", one study found that Chinese Internet users trusted doctors significantly less compared to non-Internet users and validated the moderating effect of the Internet use. Specifically, the use of the Internet negatively affected patients' trust in and satisfaction with doctors. In addition, Internet information is an important basis for Chinese Internet users' perceived trust in doctors (B. W. Zhu & Luo, 2017).

Overall, doctor-patient mistrust is rooted in the relevant factors at three levels: social, institutional and interpersonal (Chan, 2018; Z. Li, 2019). The factors influencing doctor-patient trust include: 1) at the social level, the prominent lack of trust in society has spilled over to DPR; 2) at the government level, the main factors include insufficient public financial investment, imperfect medical security system, unreasonable distribution of medical resources, the lack of a pharmaceutical regulatory system and the imperfect legal system; 3) in terms of the doctor side, the main factors include limitations in medical technology, lack of ability to handle doctor-patient disputes, lack of humanistic care in services, low income of doctors and nurses, low legal awareness of doctors and lack of medical accident insurance; 4) the patients mainly lack proper medical knowledge and a full understanding of the special features of healthcare work, are not able to actively and effectively communicate with doctors, and have

low legal awareness. Besides, a small number of patients have an unhealthy mentality in seeking medical treatment; (5) other aspects such as malicious hype by news media.

Doctor-patient trust in China is influenced by the following factors:

(1) The level of hospital: The levels of patients' trust in the competency of doctors and nurses in primary hospitals are significantly higher than those in secondary and tertiary hospitals; and the personality of doctors and the overall hospital image in primary hospitals are also recognised by more patients (S. Wang et al., 2014).

(2) Inpatients vs. outpatients: Inpatients have lower levels of trust in their doctors. In this study, outpatients were compared with inpatients, and the results showed that: inpatients had a longer stay in hospital and better communication with healthcare workers. In contrast, communication between outpatients and healthcare workers was short, hasty and more frequent. The communication environment was usually noisy, which could easily lead to anxiety, thereby affecting doctor-patient trust (Xie et al., 2009).

(3) The income levels of patients: According to the COR theory, individuals with more resources have a higher level of trust in themselves, are more likely to develop a positive and optimistic mindset and are more likely to trust others. In addition, low-income patients tend not to communicate with their doctors (Y. L. Chen et al., 2012; Xie et al., 2009).

(4) The levels of medical expenses borne by patients: From patients' perspective, the medication and overall healthcare costs are inflated, and clinical decisions about diagnostic tests and medication prescriptions tend to maximise revenue rather than improve outcomes. Patients' level of trust in doctors is directly associated with the cost of care (D. X. Zheng, 2007), and unreasonable costs in their perceptions would reduce their trust in doctors. The higher a patient's cost of care, the higher his/her expectation for healthcare outcomes, and the higher his/her expectation for the competency level and service quality of healthcare workers. When the treatment outcome falls short of the patient's expectation, he/she will have a poorer evaluation of the doctor's competency, personality, and even the hospital as a whole.

(5) The behaviours of the doctor side. The behaviours of the doctor side mainly include: degree of attention paid by healthcare workers to patients, promptness of the service, proficiency of skills, kindness of the attitude, willingness to answer questions and protection of personal privacy (Ozawa & Sripad, 2013). Provided that the personal privacy and hygiene are guaranteed, the behaviours of the doctor side have a significant positive effect on patients' trust in doctors (Z. Wang & Peng, 2018). Of these behaviours, the level of doctors' willingness to answer questions and the promptness of service have a greater impact on patients' trust in the hospital compared to proficiency of skills. This shows that the professional ethics of healthcare

workers and the quality of service they provide can significantly influence doctor-patient trust.

(6) Social trust and perception of systems: Social trust and perception of systems have a greater impact on doctor-patient trust than hospital equipment, medical and nursing ethics as well as medical and nursing skills (Shen et al., 2017). Therefore, fairness of systems, government investment in healthcare and allocation of healthcare resources have a significant impact on doctor-patient trust.

2.1.5 Outcomes of doctor-patient mistrust

Compromised or lack of doctor-patient trust will negatively influence the attitudes and behaviours of both patients and doctors. Doctor-patient mistrust will lead to problems with patients' choice of doctors and treatment adherence, which may affect the access to treatment of the patient side and the treatment process of the doctor side. Consequently, a significant negative impact can be produced on patients' satisfaction with treatment, treatment outcomes, prognosis and recovery. The survey conducted by Thom et al. (2002) showed that patients who did not trust their doctors were more likely to complain that their doctors did not provide adequate medical care and were dissatisfied with caregiver services and reluctant to accept treatment, showed poor treatment adherence, and had lower levels of symptom improvement after two weeks. Piette et al. (2005) observed that patients' trust in their doctors could reduce the burden of prescription drug costs and increase patients' medication adherence. Hojat et al. (2010) concluded that patients' perceived empathy of their doctors was significantly associated with patient satisfaction, trust in doctors and treatment adherence. Lord et al. (2012) found in their study that patients' confidence in treatment and knowledge of cancer were significantly related to doctor-patient trust. The study by Gupta et al. (2014) suggested that higher levels of trust in doctors were associated with higher success rates in screening patients for rectal cancer. A longitudinal cohort study by Dong et al. (2017) indicated that elderly people with higher levels of doctor-patient trust were at lower risk of depression. Birkhäuser et al. (2017) found that higher levels of trust in healthcare workers reported by patients helped improve patients' quality of life by facilitating more health behaviours and higher levels of treatment satisfaction.

While mutual trust between doctors and patients facilitates communication between the two sides, improves doctors' concentration, and contributes to improved quality of healthcare services (W. J. Li, 2018), doctor-patient mistrust can lead to reduced job satisfaction and thus lower levels of work engagement. In turn, low levels of doctor-patient trust can undermine the self-esteem of healthcare workers; tensions in DPRs impose a serious threat to healthcare

workers and increase their psychological stress, leading to burnout. With the frequent occurrence of medical disputes, hospitals often choose to sacrifice doctors' personal interests to protect their reputation. This greatly undermines the legitimate rights and interests of healthcare workers, resulting in an increase in the turnover rate of doctors and even the reluctance of some doctors to engage in medical practice (L. L. Pan & Liu, 2011). Doctor-patient mistrust will also increase the cost of medical care for patients, adding to their financial burden. A distrustful relationship between doctors and patients will lead to defensive healthcare behaviours and increased costs for patients, further exacerbating "the difficulty and high cost of accessing medical treatment" (L. Ren & Bai, 2011). Tucker et al. (2015) found that doctor-patient mistrust led to anger in medical disputes, which produced three main outcomes: 1) patients remained dissatisfied with doctors, but disputes could not be resolved; 2) disputes were resolved through violence; 3) disputes were resolved through non-violent means. Violent solutions included verbal abuse, threats to doctors, physical violence leading to injury and death; alternative solutions included negotiated settlement through financial compensation instead of resorting to legal means. To prevent or respond to violence against doctors, hospitals were equipped with relevant security personnel. But this measure can be unsettling for patients and families (Tucker et al., 2015).

2.1.6 Measurement of doctor-patient mistrust

In China, doctor-patient mistrust is an important reason for deteriorating DPRs and doctor-patient conflicts. On the one hand, patients do not trust doctors' medical expertise and medical ethics, worry about unfavourable treatment outcomes, and have a guarded mentality. On the other hand, doctors do not trust the information provided by patients about their state of illness and may adopt excessive or defensive medical treatment for fear of medical disputes, making it difficult for them to empathise with patients. As doctor-patient trust is the most central component of DPR, measurement of DPR or doctor-patient conflict is generally measurement of doctor-patient trust (G. Y. Liu et al., 2015). In 1973, Wallston et al. (1973) developed a scale to measure nurses' trust of patients based on the "Interpersonal Trust Scale" (ITS). The developed scale was used to measure 79 nurses' trust of their patients. In 1990, L. A. Anderson and Dedrick (1990) conducted interviews on patients' trust in their physicians at a US veteran's centre and developed the "Trust in Physician Scale (TiPS)" based on the qualitative results and validated the scale's test-retest reliability. Thom et al. (1999) revised the TiPS and further enhanced its applicability through interviews and surveys. Hall et al. (2001) and Hall et al.

(2002) developed another measure of doctor-patient trust, namely the Wake Forest Physician Trust Scale (WFPTS), using a more scientific and rational approach. W. L. Zeng et al. (2018) developed the Doctor-Patient Relationship in China (DPR-C) scale, which consists of ten items under two dimensions, namely doctor-patient trust and patient-centred care. They also validated the scale with a large nationwide sample, filling the gap where the previous measures of DPR in China were unanimously from the patients' perspective.

2.2 Emotional labour

2.2.1 The concept and definition of emotional labour

Hochschild (1983) defined emotional labour based on an in-depth study of the emotional expressions of flight attendants in Delta Airlines. Specifically, he defined emotional labour as “the management of feeling to create a publicly observable facial and bodily display” (Hochschild, 1983, p. 7). Drawing from the dramaturgical perspective, Hochschild (1983) identified two different ways in which employees managed their feelings, namely surface acting and deep acting. She found that employees always regulate their inner feelings to meet the demands of the organization and to align their feelings with the emotional displays expected by the organization. In the early years after its proposal by Hochschild (1983), the concept of emotional labour did not attract much attention from the public or researchers. After Rafaeli and Sutton (1987) conducted a series of qualitative studies on emotional labour across different occupations, emotional labour gradually gained the attention of researchers. Building on the work of Hochschild (1983) and others, many researchers have discussed the definition and concept of emotional labour from different perspectives.

2.2.1.1 Act of expression (Ashforth & Humphrey, 1993)

Ashforth and Humphrey (1993, p. 90) defined emotional labour as “the act of displaying the appropriate emotion, with the goal to engage in a form of impression management for the organization”. Compared to the definition proposed by Hochschild (1983), this definition emphasises the act of display rather than the management of feeling. It argued that only the act of expression can affect the service recipient, and that the emotional labour performer will perceive whether his or her own act of expression meets the requirements of the organization and will have the autonomy to change his or her emotional display to achieve certain ends. In some cases, individuals are often able to experience and express desired emotions in a natural

and authentic way. For example, nurses are able to express compassion towards an injured child without the need to “act out” the emotion. Meanwhile, such emotions are consistent with the emotions expected of the profession. In addition, Ashforth and Humphrey (1993) put forward a different view from Hochschild (1983) as to whether emotional labour always results in energy depletion. They argued that many service jobs are repetitive and that employees have developed “acting” as a professional habit over time, thus making emotional labour relatively effortless (Ashforth & Humphrey, 1993).

2.2.1.2 Social-contextual factors (Morris & Feldman, 1996)

Based on the work done by predecessors, Morris and Feldman (1996) introduced social-contextual factors to the concept of emotional labour, arguing that emotional labour is determined by the social context. Furthermore, the interpersonal contacts that individuals have in their work processes include not only people outside the organization such as customers, but also members within the organization such as colleagues and leaders. Like Ashforth and Humphrey (1993), Morris and Feldman (1996) were more focused on the act of expression. What the service industry expects is actually what employees can express, because it is the outward expressions instead of the genuine emotions of employees that the service industry jobs really expect. However, regarding the view that individuals do not need to make an effort to act all the time to meet the role requirements, Morris and Feldman (1996) argued that it is important for an individual to present appropriate emotional display even if he/she feels what is expected of him/her from the organization. By then, research on the concept of emotional labour had developed to a relatively mature stage (Y. G. Wang et al., 2012).

2.2.1.3 Action theory (Zapf, 2002)

Zapf (2002) considered emotional work (emotional labour) part of work, a process by which individuals regulate their emotions to meet organizational expectations. Emotional labour, in essence, is a form of emotional regulation of the individual in response to the emotional behaviour management goals set by the organisation. On the basis of combining the performance, process and outcomes of emotional work, Zapf et al. (1999) further captured emotional work as a multi-dimensional construct consisting of seven aspects. The seven aspects are: display of positive emotions, display of negative emotions/the variety of emotions to be expressed, sensitivity requirements, showing empathy, emotional dissonance, routineness and interaction control. Specifically, the four dimensions of display of positive emotions, display of negative emotions/the variety of emotions to be expressed, sensitivity requirements and

showing empathy are all emotional requirements or job demands, which require employees to be able to not only feel, regulate and express appropriate emotions but also perceive the emotions of the people they serve with sensitivity. Based on the dissonance acting proposed by Ashforth and Humphrey (1993), Zapf (2002) developed the concept of deliberative dissonance acting (DDA). This behaviour refers to the rule of different emotional expressions in a given situation and requires employees to not only show moderate emotions but also maintain neutral feelings, i.e., to remain calm and peaceful. Clearly, DDA may be more applicable to the emotional expression of doctors in healthcare settings.

A model of emotional regulation for emotional labour (A. A. Grandey, 2000)

In 2000, A. A. Grandey (2000) introduced Gross' theory of emotion regulation (Gross, 1998) to emotional labour, arguing that deep acting is an antecedent-focused approach to emotion regulation based on contextual reappraisal, while surface acting is a response-focused approach to emotion regulation based on expression inhibition, enriching the connotations and extensions of emotional labour in organizational contexts and providing an important theoretical framework for a comprehensive and in-depth study of the antecedents and outcomes of emotional labour as well as the underlying mechanisms and boundary conditions (A. A. Grandey & Melloy, 2017). In an interactive context, emotional episodes trigger individual emotional responses, and individuals engage in antecedent-focused or response-focused emotion regulation processes in response to individual differences, role interaction expectations and work context. Individual differences include age, gender, ethnicity, personality traits, abilities and social identity; role interaction expectations include rules of expression, work tasks and interpersonal relationships; and work context involves factors such as job autonomy, organizational climate and management systems. A. A. Grandey (2003) finally defined emotional labour as "the process of managing emotions such that they are suitable to organizational or professional display rules. It takes place through representations, while the control of inner emotions takes place in the form of deep roles" (A. A. Grandey, 2003, p. 86).

2.2.2 Emotional labour strategies

Emotional labour refers to a process where an individual regulates his/her emotions to display publicly visible expressions according to the emotional display rules of the organization. Emotional labour strategies refer to an individual's approaches to emotion regulation and are mainly used when individuals' real emotions are not in line with organizational expectations; Hochschild (1979), drawing from the dramaturgical perspective, divided employees'

management of emotions into surface acting and deep acting and found that employees always adjust their inner feelings to meet organizational requirements and to align them with organizational expectations (Hochschild, 1979). Surface acting involves changing an individual's externally visible expressions or behaviours to display the organization's desired emotions without changing the individual's inner feelings; deep acting involves changing an individual's inner feelings through effort so that the individual's emotional expressions are consistent with those desired by the organization. Later, a third emotional labour strategy was proposed, namely "the expression of genuine emotion" (Ashforth & Humphrey, 1993). It refers to the individual's experiencing emotions and feelings consistent with the organization's expected emotional expressions and expressing them naturally without conscious emotion regulation. These three emotional labour strategies produce differentiated job performance and health outcomes due to differences in the way psychological regulation is processed (A. A. Grandey & Melloy, 2017; Humphrey et al., 2015). Currently, only surface acting and deep acting are generally recognised emotional labour strategies in academia.

Surface acting: It involves the individual displaying emotions in line with those required by the organization without experiencing the said emotions. Surface acting is often seen as an "insincere performance" involving such superficial behaviours such as modulating facial expressions, gestures or voice and tone. Employees who are engaged in surface acting regulate their emotional displays without changing their feelings. For example, a hotel employee may seem to be empathetic towards clients, but he/she is actually full of complaints.

Deep acting: It involves the individual not only meeting the organization's expected emotional displays but also "genuinely" feeling the emotions required by the organization (Ashforth & Humphrey, 1993). For example, if a hotel employee feels low and encounters a guest with a problem, he or she tends to put himself/herself in the guest's shoes and show empathy towards the guest. When performing deep acting, employees must try to fit into their role, to feel the emotions the organization is trying to convey as much as possible, and to show emotions that are consistent with the organization's requirements. This is achieved in two ways: one is emotional arousal, where the individual actively tries to evoke or suppress a certain emotion; the other is trained imagination, where the individual actively calls on imagination, images or memories to trigger the desired emotion.

2.2.3 Factors related to emotional labour strategies

Existing studies have examined the factors that influence employees' use of emotional labour

strategies (surface acting or deep acting) from two perspectives, individual factors and organizational contextual factors.

2.2.3.1 Individual factors

The influence of individual factors on emotional labour strategies: existing research shows that individual factors such as employees' personality traits and emotional resources have an important influence on their choice of emotional labour strategies.

Personality traits

Personality traits, as elements that reflect the personality characteristics and mental outlook of individuals, have a significant impact on the emotional labour strategies that individuals adopt in response to occupational demands. For this reason, many scholars have carried out studies on personality traits focusing on the need and willingness to regulate emotional expression (Diefendorff et al., 2005). Firstly, employees with individual personality traits differ in their regulation of emotional expression and therefore adopt different emotional labour strategies. People who are high in extraversion tend to feel the positive emotions that the organization requires them to display, so they tend to reveal their naturally-felt emotions without having to process or regulate their emotions. Therefore, they seldom use surface acting strategy at work. Conversely, individuals with high levels of neuroticism tend to feel a variety of negative emotions at work and therefore regulate their expression of emotions to reduce the expression of negative emotions and to express positive emotions that meet the needs of the organization, i.e., using surface acting strategy. Extraversion as a personality trait is negatively related to surface acting strategy (Austin et al., 2008; Diefendorff et al., 2005; Gosserand & Diefendorff, 2005; H. J. Kim, 2008), while there are divergent views on the relationship between the personality trait of extraversion and deep acting strategy as studies based on different samples showed inconsistent results. Some studies suggest a positive association between extraversion and deep acting (Austin et al., 2008; H. J. Kim, 2008), but there may also be a non-significant association (Diefendorff et al., 2005). In addition, the personality trait of neuroticism does not have a significant association with deep acting strategy (Austin et al., 2008; Gosserand & Diefendorff, 2005; H. J. Kim, 2008) but has a significant positive relationship with surface acting strategy (Austin et al., 2008; Gosserand & Diefendorff, 2005; H. J. Kim, 2008).

From another perspective, employees with different personality traits express their willingness to regulate their emotions differently, and in turn they will adopt different emotional labour strategies. Employees with a strong sense of responsibility are less likely to adopt surface

acting strategy as the sense of responsibility is negatively related to surface acting. Nevertheless, sense of responsibility is not significantly related to deep acting strategy. Convivial employees tend to prefer deep acting strategy and are less likely to adopt surface acting strategy (Diefendorff et al., 2005). Similarly, there are different views regarding the relationship between the personality trait of self-monitoring and emotional labour strategies. Several research reports on self-monitoring showed that self-monitoring is positively associated with surface acting strategy (Brotheridge & Lee, 2002; Diefendorff et al., 2005; Mahoney, 2012), but is not associated with deep acting strategy (Brotheridge & Lee, 2002). However, self-monitoring has been found to be positively related to deep acting strategy but not to surface acting strategy (Bono & Vey, 2007). M. S. Lee and Kim (2020) conducted an online questionnaire survey of service industry employees in the Korean retail finance industry and found that psychological resilience increased employees' deep acting through the dual mediation of person-job fit and job engagement, which fully mediated the relationship between psychological resilience and deep acting.

Emotional intelligence

The COR theory suggests that the higher an employee's emotional intelligence, the more emotional resources he/she has, the more he/she focuses on acquiring new resources, and the less he/she notices the loss of resources. Therefore, in the workplace, employees with high emotional intelligence often adopt the deep acting strategy to achieve positive interpersonal interactions and work outcomes (A. A. Grandey, 2003), which ultimately result in new individual emotional resources. In empirical studies, the relationship between emotional intelligence and emotional labour strategies remains highly variable. Some studies have found a certain negative relationship between the two (Austin et al., 2008; F. Y. L. Cheung & Tang, 2009) while emotional intelligence has a positive effect on deep acting (F. Y. L. Cheung & Tang, 2009; Y. M. Liu et al., 2008). Some studies have shown that emotional intelligence is not significantly related to either surface acting and deep acting (Austin et al., 2008; Y. M. Liu et al., 2008). The divergent results suggest that the relationship between emotional intelligence and emotional labour strategies is complex and that the relationship is likely to be influenced by factors such as organizational rules of emotional expression, self-identification and social relations.

Negative emotions

According to the COR theory (Hobfoll, 1989), employees who are in a negative mood at work have fewer sources of emotional resources. Therefore, in service work, they pay more attention to the loss of emotional resources and neglect the gain of emotional resources. As the

loss of emotional resources resulting from the surface acting strategy is small, whereas the deep acting strategy leads to a larger loss of emotional resources, employees tend to adopt surface acting instead of deep acting to reduce or avoid the loss of emotional resources. It has been shown that negative emotions have a positive effect on surface acting, while they do not have a significant effect on deep acting (Y. M. Liu et al., 2008).

In addition to personality traits, emotional intelligence and negative emotions, other individual factors also influence the choice of individual strategies. The study by Dahling and Perez (2010) indicated that age was strongly associated with individuals' choice of strategies, with older employees preferring deep acting to align with the organization's required emotional expression and engaging in surface acting less often to reduce emotional drain (Dahling & Perez, 2010). The study by A. A. Grandey (2003) showed that employees' job satisfaction had a negative effect on both surface acting and deep acting. Specifically, when employees experienced high levels of job satisfaction, they tended to show more positive personal emotions, and were more likely to feel positive emotions in the organization and therefore did not require emotional processing and acting (A. A. Grandey, 2003). A study conducted by Hwang and Park (2022) among full-time nurses in Korean general hospitals revealed that emotional display rules, self-efficacy, job autonomy and job stress were significantly associated with surface acting, explaining 20.5% of its variance; and self-efficacy, emotional intelligence, job autonomy and job stress were significantly related to deep acting, explaining 23.3% of its variance. Z. J. Li et al. (2021) selected 295 nurses who had been working in the intensive care unit (ICU) for more than six months in five Grade A tertiary hospitals as survey respondents. Their study results showed that only the differences in the emotional labour strategy scores of ICU nurses of different genders and with different length of service had statistical significance, while the differences in the emotional labour strategy scores of ICU nurses by age, education level, type of employment, monthly income, professional title, marital status, having children or not were not statistically significant. Mao et al. (2020) studied nurses from a Grade A tertiary hospital in Gansu Province, China and found that in terms of emotional labour strategies, deep acting scores were higher than surface acting scores. The factors that influenced surface acting included age, department, length of service, professional title and type of employment while the factors that influenced deep acting were age, marital status, department, length of service, professional title and type of employment. Z. J. Li et al. (2021) studied teachers in 50 public universities in Shandong Province and showed that teachers' perceived emotional work demands for university teaching were different from their reported emotional work demands for university teaching. A study of teachers from 50 public universities in Shandong Province

China revealed that college teachers' perceived need for emotional labour in teaching was positively related to their self-reported use of surface acting and deep acting, with teachers' perceived teaching support reduced their use of surface acting (J. Y. Han et al., 2021).

2.2.3.2 Organizational factors

The influence of organizational contextual factors on emotional labour strategies: existing literature shows that organizational contextual factors such as the organization's emotional display rules, job characteristics and organizational support have an important effect on employees' choice of emotional labour strategies. The organization's emotional display rules are the norms or standards for expressing emotions set by the organization in relation to a particular job or occupation. In a service-oriented job, employees are expected to demonstrate positive and enthusiastic emotions and attitudes in response to customer requests and service needs. Firstly, employees' emotional labour strategies will be influenced by the organization's emotion. This is particularly true in service-oriented organizations which have clear rules or requirements for employees' emotional expressions, and employees need to use emotional labour strategies to regulate their emotional expressions. In the process of emotional labour, employees must examine their own emotional state and always ensure that their emotional expression is consistent with the emotional requirements of the organization. If deviations are found between their own emotional expression and the organization's expected emotions, employees should use emotional management strategies to regulate their emotional expression to meet the organization's basic emotional requirements. Research has shown that the rule of expressing positive emotions has a significant positive effect on the implementation of both surface acting (Gosserand & Diefendorff, 2005) and deep acting (Diefendorff et al., 2005; H. J. Kim, 2008; Mahoney, 2012). Besides, the rule of inhibiting negative emotions has a significant positive relationship with employees' adoption of surface acting (H. J. Kim, 2008; Mahoney, 2012), but not with the adoption of deep acting.

Khan et al. (2021) conducted a survey among frontline employees in Pakistani banks and found that employees' perceptions of corporate social responsibility (CSR) did not have a significant direct effect on surface acting and deep acting, but that perceived external CSR positively contributed to perceived external reputation, thereby increasing employees' deep acting and reducing their surface acting. Ni and Li (2021) conducted a questionnaire survey among frontline service workers in ten banks in five Chinese cities, namely Beijing, Shanghai, Shenzhen, Changsha and Xi'an, with the aim of systematically exploring the relationship between inclusive leadership and frontline service workers' choice of emotional labour

strategies in a Chinese cultural context. Drawn on the social cognitive theory and the contingency theory of leadership, they chose perceptions of organizational politics to explain the mediating effect between the two and revealed the role of employee traditionalism in the relationship between inclusive leadership and choice of emotional labour strategies. The results showed that inclusive leadership stimulated deep acting and inhibited surface acting among frontline service workers. Perceptions of organizational politics fully mediated the relationship between inclusive leadership and surface acting and partially mediated the relationship between inclusive leadership and deep acting. Employee traditionalism mediated the relationship between inclusive leadership and emotional labour strategies; employee traditionalism could weaken both the negative effect of inclusive leadership on surface acting and the positive effect of inclusive leadership on deep acting (Ni & Li, 2021).

In addition, individuals' choice of emotional labour strategies will also be influenced by perceived organizational support. Perceived organizational support refers to employees' perceptions regarding the extent to which their employer "values their contributions and cares about their well-being" (Eisenberger et al., 1986, p. 501). When the organization focuses on rewarding contributions and improving employees' well-being, employees will work harder and thus increase their own efficiency and sense of responsibility. The more supportive the organization is, the more motivated employees are, and the more likely they are to adopt the emotional labour strategy of deep acting. Conversely, employees with low levels of perceived organizational support tend to adopt the emotional labour strategy of surface acting to cope with the emotional demands at work. Existing research findings suggest that perceived organizational support is significantly positively related to deep acting (Chou et al., 2012; D. C. Lee et al., 2012) and significantly negatively related to surface acting. In addition, D. C. Lee et al. (2012) found that perceived organizational support enhances job enjoyment and has an effect on both deep acting and surface acting strategies such that it increases the positive association between deep acting and job enjoyment as well as the negative association between surface acting and job enjoyment.

2.2.4 Outcomes of emotional labour

Early research has shown that emotional labour produces more psychological stress, which negatively influences employees' mental health. However, the impact of emotional labour is closely related to the emotional labour strategies used by employees as different emotional labour strategies used by employees can produce different outcomes, mainly in terms of

psychological state, behaviour and performance.

Deep acting modifies inner feelings to create sincere emotional expressions that benefit the individual, the organization and the recipients of the interaction. Surface acting only changes displayed emotions, while inconsistent feelings remain; when the monitoring of the inhibition of emotional expressions is absent, micro-expressions of true feelings may occur, and the recipients of interaction may recognise the faked expressions and form negative views. In this sense, surface acting often leads to negative consequences for individuals, organizations and the recipients of interaction (S. Kim & Wang, 2018; Peng et al., 2019; Sohn et al., 2018). Furthermore, the expression of genuine emotion does not involve conscious emotion regulation and has context-specific effects on job performance and health (English & John, 2013; Hülshager et al., 2015). The emotional labour strategy of surface acting can directly result in internal conflict and dissonance, tensions in interpersonal relationships and the loss of emotive function, which in turn negatively influence individuals' attitudes (e.g., burnout and job satisfaction) and behaviours (e.g., organizational citizenship behaviour, turnover and absenteeism), physical and mental health (e.g., depression, anxiety, sleep problems and substance abuse) and job performance.

The main outcomes of emotional labour strategies can be categorised into employee/individual, organizational and client outcomes. Clearly, emotional labour strategies are important for both individuals and organizations, and that the type of emotional labour strategies adopted by employees, the organization's emotional expression requirements they need to meet, and the demands and emotional states of clients can all lead to different outcomes.

2.2.4.1 Employee outcomes

In the early days, emotional labour was thought to be always negatively related to employees. However, subsequent research has shown that the relationship between emotional labour and employees' psychological well-being and that between emotional labour and employees' work attitudes are complex. The negative effects of emotional labour are often caused by surface acting, which can lead to a range of other work attitude and efficiency problems such as burnout and turnover in addition to psychological problems at work (A. A. Grandey, 2000). In contrast to surface acting, Brotheridge and Grandey (2002) found that deep acting could be used by employees to improve their sense of achievement and was positively related to individual-level outcome variables. The study by A. A. Grandey (2003) revealed that deep acting led to more interpersonal interactions, which resulted in emotional transference and better customer service. While many studies had evidenced the positive effects of deep acting, a subsequent study by

Bozionelos and Kiamou (2008) suggested that deep acting should not be overdone, as it can be emotionally draining and lead to emotional exhaustion, producing a negative impact on organizational commitment. In other words, more deep acting is not better.

Hong et al. (2022) conducted a study using a convenience sample of 411 preschool teachers in Guangdong Province, China based on a stress-strain-outcome model of burnout. The results revealed that preschool teachers used the emotional labour strategy of deep acting more and surface acting less at work. Besides, surface acting had a significant negative impact on psychological well-being, while deep acting had a significant positive impact on psychological well-being. Preschool teachers' psychological capital fully mediated the relationship between deep acting and psychological well-being (Hong et al., 2022). A two-year prospective study of all healthcare workers in a US facility providing long-term care services showed that new-onset depressive symptoms were higher among those engaged in moderate to high levels of surface acting compared with those engaged in a baseline level of surface acting. After adjusting for potential confounders, healthcare workers with moderate to high levels of surface acting were 1.8 and 1.9 times more likely to experience depressive symptoms than those with low levels of surface acting (Suh & Punnett, 2021). Surface acting was found to be negatively associated with work-related quality of life, while deep acting was found to be positively related to work-related quality of life (Z. J. Li et al., 2021). J. Y. Han et al. (2021) found that college teachers' surface acting hindered instructional effectiveness in teaching strategies and learning assessment, while deep acting increased instructional effectiveness in curriculum design, teaching strategies and learning assessment.

Emotional labour influences the psychological state of employees. Existing studies have analysed the effects of different emotional strategies on the state of employees mainly from the perspectives of burnout and job satisfaction. Emotional labour strategies have main effects on burnout. Firstly, the emotional labour strategies of surface acting and deep acting have different levels of effect on burnout. In general, employees who use surface acting will express emotions different from the organization's expected emotions, leading to emotional dissonance and burnout. When employees engage in deep acting, their emotional expressions are consistent with those required by the organization, which tends to reduce burnout. In addition, burnout also has different manifestations such as emotional exhaustion, depersonalisation and reduced personal accomplishment, and there are differences in the effects of emotional labour strategies on these different manifestations. Specifically, surface acting is positively associated with emotional exhaustion and depersonalisation (A. A. Grandey, 2003; Zammuner & Galli, 2005a), while its relationship with reduced personal accomplishment can be positive (Zammuner &

Galli, 2005a) or negative (Brotheridge & Grandey, 2002). Besides, deep acting is significantly negatively related to emotional exhaustion (Hur et al., 2013), significantly positively related to the sense of personal accomplishment (Brotheridge & Grandey, 2002; Brotheridge & Lee, 2002), and significantly negatively related to depersonalisation (Brotheridge & Lee, 2002).

Furthermore, the relationship between emotional labour strategies and emotional exhaustion is also influenced by factors such as employees' gender, personality traits and perceived organizational support, while function as moderators. Female employees who engage in surface acting are more likely to experience emotional exhaustion than their male counterparts (Johnson & Spector, 2007); introverts who engage in surface acting are more likely to experience emotional exhaustion than extroverts (Judge et al., 2009). In addition, perceived organizational support moderates the positive relationship between deep acting and emotional exhaustion as well as the negative relationship between surface acting and emotional exhaustion (Hur et al., 2013).

J. S. Kim (2020) carried out a cross-sectional study in Korea with nurses directly involved in patient care in hospitals with more than 300 beds as respondents. The results indicated that deep acting was negatively associated with burnout and that although surface acting was not directly related to burnout, it was indirectly associated with burnout through increased stress levels. Huppertz et al. (2020) recruited 150 participants engaged in jobs dealing with customers through an online research platform. Most of these participants were engaged in sales (29%), followed by IT (13%), and hospitality and related fields (10%). According to the results, surface acting was positively related to mental effort and negatively related to both perceived authenticity and rewarding interactions. Mental effort and perceived authenticity mediated the relationship between surface acting and emotional exhaustion, while rewarding interactions did not mediate the relationship between surface acting and emotional exhaustion. Deep acting was not significantly related to mental effort, perceived authenticity or rewarding interactions, and mental effort, perceived authenticity and rewarding interactions did not mediate the relationship between deep acting and emotional exhaustion (Huppertz et al., 2020). X. S. Zhu et al. (2021) examined how Confucian familism, emotional labour (surface acting, deep acting and expression of naturally felt emotions) and work-family conflict explain teachers' emotional exhaustion based on an online survey of 3,321 teachers (81.9% female) in Beijing. The results showed that surface acting mediated the relationship between familism and emotional exhaustion. Besides, familism positively predicted deep acting and emotional exhaustion, while it negatively predicted surface acting (X. S. Zhu et al., 2021).

Emotional labour is accompanied by a depletion of and change in emotional resources and

has a significant impact on job satisfaction. As employees who adopt surface acting strategy are more likely to experience burnout and feel more negative emotions, their job satisfaction is also reduced, while the opposite is true for employees who engage in deep acting. Research has shown a negative relationship between surface acting and job satisfaction (Z. G. Chen et al., 2012; Y. M. Liu et al., 2008; Psilopanagioti et al., 2012). Depression fully mediates the relationship between surface acting and job satisfaction (Y. M. Liu et al., 2008). Negative emotions partially mediate the relationship between surface acting and job satisfaction (Judge et al., 2009; Scott & Barnes, 2011). However, research on the relationship between deep acting and job satisfaction has produced inconsistent results, with some studies suggesting no association (Y. M. Liu et al., 2008) and others suggesting a positive relationship (Z. G. Chen et al., 2012).

The study by Hwang and Park (2022) identified a negative relationship between surface acting and job satisfaction while a positive association between deep acting and job satisfaction. Yeh et al. (2020) conducted a time-lagged survey of full-time healthcare professionals (doctors, nurses and full-time health professionals) who provided direct patient care and found surface acting to be negatively related to job satisfaction while deep acting positively related to job satisfaction. The mediation analysis revealed a partial mediating effect of sleep in the relationship between surface acting and job satisfaction (Yeh et al., 2020).

2.2.4.2 Organizational-level outcomes

To date, increasing studies have demonstrated that emotional labour has an impact on such aspects as organizational performance. The study by Hülshager and Schewe (2011) showed a negative relationship between surface acting and organizational performance. Specifically, surface acting depletes individuals' emotional resources and involves faking emotions, leading to reduced organizational performance. Another study indicated a positive relationship between deep acting and organizational performance (Kammeyer-Mueller et al., 2013). Ma et al. (2020) argued that emotional labour has a significant impact on role performance and that emotional intelligence moderates the relationship between emotional labour and job performance in public organizations but not in private organizations. A positive relationship between deep acting and job performance was observed in the study carried out by Hwang and Park (2022), while the study by Yeh et al. (2020) suggested no statistically significant correlation between surface/deep acting and job performance.

Emotional labour also has a significant impact on employees' work behaviour and performance (Goodwin et al., 2011; Nguyen et al., 2016). One study examined the impact of

emotional labour strategies on employees' work withdrawal behaviours. The results revealed that different emotional labour strategies lead to different levels of work withdrawal behaviours (X. T. Li & Peng, 2018; Scott & Barnes, 2011). According to research on emotion theories and counterproductive work behaviour, surface acting tends to bring about negative emotions in employees, leading to work withdrawal behaviours; on the contrary, deep acting is more likely to bring about positive emotions in employees with fewer employees exhibiting work withdrawal behaviours. The empirical study conducted by Scott and Barnes (2011) showed that surface acting had a significant positive effect on work withdrawal, but the negative effect of deep acting on work withdrawal was not significant; negative emotions partially mediated the positive relationship between surface acting and work withdrawal as well as the negative relationship between deep acting and work withdrawal.

Emotional labour strategies affect customers' perceptions of the authenticity of employees' emotional expressions, which further affects customers' evaluations of the services provided by employees. In deep acting, there is less difference between an employee's emotional expressions and those required by the organization, so customers enjoy better service and a higher level of satisfaction with the employee's service. In contrast, in surface acting, the employee only regulates his/her displayed emotions and ignores his/her inner states, which can lead to a poor experience for the customer (Hochschild, 1983), resulting in lower satisfaction with the employee's service. The empirical study by A. A. Grandey (2003) revealed that deep acting had a significant positive effect on service evaluations and that surface acting had a significant negative effect on service evaluations. Groth et al. (2009) found that deep acting was positively related to customers' perceived service quality.

Using a convenience sampling method, J. Song et al. (2021) recruited 1,054 nurses from six tertiary hospitals in Shaanxi Province, China to examine the relationships between emotional labour, burnout and presenteeism as well as the mediating role of burnout based on the JD-R model and emotional labour theory. The results showed that surface acting, emotional expression needs, emotional exhaustion, depersonalisation and low personal fulfilment were all significantly positively associated with presenteeism, and deep acting was significantly negatively associated with presenteeism. Besides, burnout partially mediated the relationship between emotional expression needs, deep acting and presenteeism, while burnout fully mediated the association between surface acting and presenteeism (J. Song et al., 2021).

2.2.4.3 Employee outcomes

Research has shown that deep acting has a positive effect on clients. Based on data collected

from respondents in different industries, Groth et al. (2009) found that deep acting positively influenced overall customer evaluation and subsequently positively influenced customers' loyalty intentions. The study by Hennig-Thurau et al. (2006) showed that deep acting not only influenced employees' emotional states, but also had an effect on customers' emotional states, which further influenced customer-employee rapport and customer satisfaction. Besides, such relationships were fully mediated by customer satisfaction, which further influenced customers' future loyalty intentions (Hennig-Thurau et al., 2006); unlike deep acting, surface acting is much more complex. Groth et al. (2009) argued that if a service worker adopts surface acting, even if his/her displayed emotions meet the customer's expectation, the customer will have a negative opinion if the service worker's emotions are detected to be fake.

2.2.5 Emotional labour among doctors

Research findings suggest that emotional labour has a predictive effect on emotional exhaustion among doctors. In terms of the effect of deep acting on emotional exhaustion, Brotheridge and Grandey (2002) argued that the use of deep acting has a negative predictive effect on emotional exhaustion. In other words, deep acting can be used to reduce emotional exhaustion. Psilopanagioti et al. (2012) reported a negative relationship between surface acting and job satisfaction while no significant relationship between deep acting and job satisfaction. Chinese studies uncovered positive associations between emotional exhaustion, total scores of emotional labour, surface acting and deep acting, a positive relationship between cynicism and deep acting, as well as negative relationships between sense of accomplishment and total scores of emotional labour and deep acting (L. Liu, Q. Ma, et al., 2018). The emotional labour strategy of deep acting can positively predict DPR, with emotional labour of healthcare workers playing a partially mediating role in this process (Qian et al., 2019).

Tan et al. (2016) found that DPR is not only influenced by the emotional labour of healthcare workers but is also directly related to healthcare workers' burnout, where sense of personal accomplishment indirectly influences DPR through the mediating role of the emotional labour strategy of deep acting; both the patient's own behaviour and the doctor's individual experience are influenced by emotional exhaustion (Tan et al., 2016). It has been demonstrated that emotional labour can lead to workplace violence, which in turn affects DPR, and that workplace violence is a significant predictor of surface acting. Therefore, as the number of violent incidents experienced by healthcare workers increases, healthcare workers are more inclined to use surface acting (X. Q. Yang, 2017). This is consistent with the empirical findings

by Brotheridge and Lee (2003) that negative emotions are significantly positively related to surface acting and that individuals tend to adopt the emotional labour strategy of surface acting when faced with negative situations (Brotheridge & Lee, 2003). A. Grandey et al. (2012) argued that negative events in workplace on the one hand cause healthcare workers to learn to regulate their emotions and on the other hand aggravate their emotional exhaustion. These factors together contribute to deteriorating DPRs (A. Grandey et al., 2012).

The concept of emotional labour was primarily studied in nursing field, and a “nursing framework” of emotional labour was gradually developed. In comparison, the emotional labour among doctors had long been neglected (Riley & Weiss, 2016). This was related to the initial gender bias towards emotional labour. Doctors were given more masculine roles and were expected to maintain emotional stability during the delivery of care, whereas nurses, who were predominantly female, played an important role in communicating with and emotionally caring for patients. Clearly, this gender bias has long been out of place. Doctors must be emotionally engaged in increasing interactions and adjust their emotional expression strategies in a timely manner (Kerasidou & Horn, 2016).

2.2.6 Measurement of emotional labour

Based on an understanding of the concept and dimensions of emotional labour, researchers have proposed different ways of measuring emotional labour.

(1) Unidimensional measures

In studies conducted prior to the 1990s, researchers mostly used unidimensional measures that viewed emotional labour as a holistic concept. Specifically, all items were developed to measure the levels of emotional labour. Unidimensional measures quantify the job characteristics of emotional labour to obtain measurement results, such as the frequency and number of employee interactions with customers, reflecting the overall emotional labour from a workload perspective (Kruml & Geddes, 2000).

(2) Two-dimensional measures

Two-dimensional measures focus on ways or strategies of measuring emotional labour, such as surface acting and deep acting. The available measures include those developed by A. A. Grandey (2003) and Chu and Murrmann (2006). In 2003, A. A. Grandey (2003) developed a two-dimensional measure of emotional labour. The scale has been used extensively in research on emotional labour. The scale consists of two sub-scales: surface acting scale and deep acting scale, measured by eight items scored on a five-point Likert scale. The scale has a Cronbach's

α of 0.75, indicating good internal consistency. Chu and Murrmann (2006) developed another two-dimensional measure of emotional labour known as Hospitality Emotional Labour Scale (HELs). HELs is also composed of two subscales: the emotional dissonance scale and the emotional effort scale. The 14-item emotional dissonance scale measures the emotional labour strategies of surface acting and expression of genuine emotion and has Cronbach's α of 0.80, indicating very good internal consistency; the five-item emotional effort scale measures the emotional labour strategy of deep acting and has a Cronbach's α of 0.69.

(3) Multidimensional measures

In 2003, Brotheridge and Lee (2003) first developed a multidimensional measure of emotional labour consisting of 15 items scored on a five-point Likert scale. The 15 items measure six broad categories of emotional labour, including frequency, intensity, duration of interaction, the variety of emotional display, surface acting and deep acting. The Cronbach's α values for the subscales range from 0.71 to 0.91, indicating acceptable-to-high levels of internal consistency.

Another multidimensional scale is the Discrete Emotions Emotional Labour Scale (DEELS) developed by Glomb and Tews (2004), who argued that human emotions are complex and of a wide variety. They developed the DEELS consisting of 14 distinct emotions under the six representative emotion families: love, joy, anger, sadness, fear, and hate. The DEELS consists of three subscales: Genuine Acting, Faked Expression and Suppression. The items of each subscale were designed for respondents to rate the frequency of each of the 14 emotions they expressed in workplace settings, and response choices ranged from (1) "I never genuinely express this" to (5) "I genuinely express this many times a day" (Glomb & Tews, 2004, p. 7). Glomb and Tews (2004) measured each emotional labour strategy by situation, with each one measured in two situations: positive emotional displays and negative emotional displays, forming a six-dimensional scale: genuine positive, genuine negative, faked positive, faked negative, suppressed positive and suppressed negative emotional displays.

A third multidimensional measure of emotional labour is the Emotional Labour Scale proposed by Diefendorff et al. (2005). This scale consists of three subscales and 14 items. The surface acting scale consists of seven items with a Cronbach's α of 0.91; the deep acting scale is composed of four items with a Cronbach's α of 0.82; and the expression of naturally felt emotions scale consists of three items with a Cronbach's α of 0.75. To date, there have been several emotional labour measurement scales, but there is no single unified measure of emotional labour. Researchers have mostly developed emotional labour measurement scales based on their own research perspectives and certain theories. Future research needs to develop

more universal or population-specific scales based on further clarification of the concept and dimensions of emotional labour.

2.3 Burnout

Burnout refers to a series of psychological and physiological syndromes caused by prolonged stress responses to interpersonal and work stressors. It is mainly manifested as a state of physical and mental fatigue and exhaustion. Influenced by different pathways of thinking, researchers have not arrived at a unified definition of burnout. But most people agree with the definition proposed by Maslach and Jackson (1981, p. 99): “Burnout is a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do ‘people-work’ of some kind.” On this basis, they put forward for the first time a three-dimensional model of burnout, providing insight into the essential components of burnout and theoretical support for the development, application and validation of burnout measures (Maslach & Jackson, 1981).

Burnout can have a detrimental effect on the physical and mental health of health workers, patients and hospitals. It can lead to loss of enthusiasm and reduced satisfaction among healthcare workers (Sansoni et al., 2016; Vijendren et al., 2015). Healthcare workers with high levels of burnout treat patients indifferently and have difficulty putting themselves in patients’ shoes, which may reduce patient adherence and lead to deterioration of patients’ conditions (M. J. Lu et al., 2014). Healthcare workers experiencing high levels of burnout find it difficult to manage relationships with colleagues and supervisors, leading to deteriorating interpersonal relationships (K. Y. Chen et al., 2013). Burnout is also detrimental to the physical and psychological health of healthcare workers (K. S. Deng et al., 2013; Su et al., 2014). It has also been shown that burnout can lead to turnover intention among healthcare workers, which is detrimental to the healthcare sector as a whole.

A questionnaire survey-based study of 1,376 physicians from 305 tertiary and 349 secondary hospitals in China revealed that physicians with moderate to high levels of emotional exhaustion and cynicism were more likely to show presenteeism (Pei et al., 2020). A meta-analysis of 13 studies that included associations between burnout and its subscales and physicians’ self-reported medical errors showed that among 20,643 physicians and resident doctors, burnout was associated with a significantly increased risk of self-reported errors; emotional exhaustion, depersonalisation and personal achievement were all independent predictors of self-reported errors (Owoc et al., 2022). Another meta-analysis of 47 studies

involving 42,473 physicians revealed that burnout is significantly associated with odds of unsafe care, unprofessional behaviour and low patient satisfaction; and the depersonalisation dimension of burnout is most strongly associated with these outcomes (Panagioti et al., 2018).

According to a survey-based study of U.S. physicians, as many as one-third of participants reported unprofessional behaviours in the past year in relation to patient services, such as documenting in medical records what they did not do; 4.9% of the physicians reported other dishonest behaviours (e.g., claiming to have earned continuing medical education credit they had not); and most physicians had positive cost-conscious attitudes, with over 75% agreeing that doctors are responsible for controlling healthcare costs and 62.9% agreeing that social costs are important in their medical decisions to use interventions. In a multivariate analysis adjusting for personal and professional characteristics, burnout was independently associated with reporting one or more unprofessional behaviours and poor cost-conscious attitudes (Dyrbye et al., 2020). A questionnaire survey of 2,617 Chinese physicians revealed that physician burnout had a significant negative effect on psychological attachment and career calling and that psychological attachment mediated the relationship between burnout and career calling (S. E. Zhang et al., 2020).

2.3.1 Dimensions of burnout

Burnout can be conceptualised in three dimensions or one dimension. Maslach and Jackson (1981) proposed a three-dimensional model of burnout consisting of emotional exhaustion, depersonalization and reduced personal accomplishment. Specifically, emotional exhaustion refers to a lack of enthusiasm for one's work and a feeling of mental exhaustion; depersonalization is an attitude of indifference towards people; and reduced personal accomplishment is a negative evaluation of oneself and a lack of experience of work accomplishment (Maslach & Jackson, 1981). This theoretical model is mainly used to describe the burnout of workers in the service industry. On this basis, Maslach et al. (1996) developed a three-dimensional model of burnout suitable for each industry. The three dimensions are emotional exhaustion, cynicism and lack of personal accomplishment (Maslach et al., 1996). It can be seen that, unlike the model proposed by Maslach and Jackson (1981), the model proposed by Maslach et al. (1996) replaced the second dimension of depersonalisation with cynicism. In fact, depersonalization and cynicism are two different concepts. Depersonalisation is mostly used in research in the field of clinical psychology and refers to a cognitive disorder due to an abstract and unrealistic feeling about oneself and one's surroundings. This runs

counter to the concept of burnout, as burnout is no longer restricted to pathological clinical manifestations, but is more universal. A typical feature of the burnout theory is the single focus on exhaustion. The burnout theory put forward by Malakh-Pines et al. (1981) is a single-factor theory as it identifies three types of burnout: physical exhaustion, emotional exhaustion and mental exhaustion. It is applicable to a wide range of professions. Malakh-Pines et al. (1981) did not apply it to workplaces. Instead, they applied it to marital relationships and the aftermath of political conflicts (Malakh-Pines et al., 1981). Furthermore, unlike the unidimensional theory of burnout proposed by Malakh-Pines et al. (1981), the unidimensional theory of burnout proposed by Shirom (1989) suggests that burnout exists only at the level of emotional exhaustion, that cynicism is a stressor of emotional exhaustion, and that lack of personal accomplishment is a product of stress (Shirom, 1989).

To explore the factors influencing burnout, scholars have attempted to study burnout from various perspectives, including its causes, development and components, and have applied various theoretical models to explain burnout.

Job Demands-Resources (JD-R) Model: The central assumption of the JD-R model is that job strain develops irrespective of the industry (Demerouti et al., 2001). The JD-R model puts working conditions into two categories, namely job demands and job resources, and assumes that burnout is caused by an imbalance between job demands and job resources. Job demands are the tasks that individuals are expected to perform at work, including workload, emotional demands, and role stress; while job resources refer to the resources that individuals and organizations need, including social support, performance feedback and coping strategies.

Conservation of Resources (COR) Theory: The COR theory is the basis of the theory of the factors influencing burnout. It examines the causes of burnout in terms of the loss and gain of resources. Resources include a range of resources that are important to individuals, such as status, time and money. Hobfoll (1989) identified 74 resources that are effective in a Western cultural context. When there is a change in demands, a loss of resources or an imbalance between the rewards and inputs of resources, individuals feel that resources are lost or threatened, leading to resource loss spirals and ultimately to burnout.

The Effort-Reward Imbalance (ERI) Model: The ERI model, proposed by Siegrist (1996), focuses on a person-specific component and situational components, highlighting the importance of human-organizational interaction and the stress that arises when employees are not rewarded for their efforts (Siegrist, 1996).

The person-job fit model: Maslach et al. (1996) proposed the person-job fit model from the perspective of fit between individuals and work environment. The model considers six aspects

of workplace: control, community, reward, fairness, workload and values and argues that the lower the level of person-job fit in these areas, the more likely burnout will occur.

In addition, Maslach and Goldberg (1998) applied behavioural decision-making to explain burnout, which focuses more on how individuals perceive and make decisions in response to factors that can cause them to experience burnout, and the suboptimal options actually increase the likelihood of burnout. This new method emphasises more the interaction between individuals and job characteristics.

2.3.2 Factors influencing burnout

Based on a review of the existing literature, the factors influencing burnout can be broadly classified into three major categories: individual factors, work characteristics factors and organizational factors.

2.3.2.1 Individual factors

A large body of research has shown that individual factors are related to burnout to varying degrees, and individual factors can be classified into demographic factors and personality traits.

Demographic factors

The degree of burnout is related to the basic demographic factors of employees such as age, gender, education and marital status. In terms of gender, Y. M. Wei et al. (2019) conducted a questionnaire survey among physicians in Grade A tertiary hospitals and concluded that female physicians were more likely to experience burnout than male physicians. The level of burnout is also related to the age of the employee. A study uncovered a negative relationship between age and burnout, with older doctors experiencing lower levels of burnout compared to younger doctors (Bazmi et al., 2019), which may be related to the accumulation of experience and increased ability to cope effectively with various types of job stress. Abarghouei et al. (2016) found that burnout levels were also influenced by marital status, with married people having significantly higher levels of burnout than their unmarried counterparts.

A questionnaire study of Hungarian general practitioners and resident doctors found that male doctors had significantly higher levels of depersonalisation compared to female doctors. There were no significant gender differences in levels of emotional exhaustion and personal fulfilment. Age was negatively associated with respondents' emotional exhaustion and depersonalisation; the number of children was positively associated with emotional exhaustion and depersonalisation; personal achievement was significantly higher among general practitioners than among residents; and workload was significantly positively associated with

depersonalisation. The study did not find significant correlations between burnout and some other sociodemographic and work-related variables such as marital status, professional focus, and weekend or night shift duty (Adam et al., 2018). Using a random sampling method, L. Huang et al. (2020) surveyed 318 residents in three general hospitals and one specialist hospital for women and children in Shanghai and found that night shift experience, high occupational stress and low empathy were significant predictors of emotional exhaustion; male, older, night shift experience, high occupational stress and low empathy were significant predictors of depersonalisation; older, higher income, low occupational stress and high empathy were significant predictors of reduced personal achievement (L. Huang et al., 2020).

Personality traits

In research on the relationship between locus of control and burnout, researchers have concluded that employees with an external locus of control are more likely to feel helpless and more likely to experience burnout than individuals with an internal locus of control. Huberman (1999) found that locus of control was significantly related to all three dimensions of burnout. Schmitz et al. (2000) analysed the relationship between locus of control and burnout among nurses and validated that individuals with an external locus of control were less able to control what was going on around them and reported higher levels of burnout. Y. X. Li et al. (2007) observed a significant positive relationship between the emotional exhaustion dimension of burnout and the level of external locus of control among nurses. The higher the level of external locus of control, the higher the level of emotional exhaustion (Y. X. Li et al., 2007). The results of a survey conducted by S. Chen et al. (2014) among teachers in higher education institutions showed a significant relationship between the opportunity factor and burnout among the three dimensions of burnout. Type A personality is associated with such characteristics as operating at a fast pace, demonstrating higher levels of impatience, being more competitive in nature, tending to get upset easily, and linking self-worth with achievement. People with Type A personality are at high risk for neurological and cardiovascular diseases, and researchers have mostly concluded that Type A personality is often associated with higher levels of burnout (Huberman, 1999). In a study of Chinese police officers, Jiang et al. (2005) noticed that people with a Type A personality were more likely to experience burnout.

The relationship between another important personality factor, self-esteem, and burnout also attracted the attention of early scholars. In a study of teachers, M. B. Anderson and Iwanicki (1984) found that self-esteem was negatively related to the emotional exhaustion and depersonalisation dimensions of burnout. Mazur and Lynch (1989) came to a similar conclusion that self-esteem is significantly negatively related to burnout. However, in a study of nurses, Y.

X. Li et al. (2007) identified a positive relationship between self-esteem and burnout in that individuals with high self-esteem are more prone to greater job stress due to their high requirements for themselves, and thus more prone to burnout (Y. X. Li et al., 2007). From October 2018 to April 2019, Somville et al. (2022) distributed self-report questionnaires via social media to doctors in emergency departments, intensive care units and surgery departments in Belgian hospitals. Of the 436 respondents consisting of 212 emergency physicians, 162 intensive care unit and surgery physicians and 62 residents, emergency physicians with Type D personality were at 7.82 times more risk for burnout than physicians with non-Type D personalities (Somville et al., 2022). X. Y. Zhao et al. (2021) conducted a questionnaire survey of 1,248 rural physicians who had worked in rural clinics for at least one year and found that the male gender, poor health status, low income and poor DPR were significantly associated with burnout. The results of a multicentre cross-sectional study conducted by Yao et al. (2021) in five hospitals in Sabah (Malaysia) between March and April 2019 showed that factors associated with individual burnout included marital status, length of service being less than five years and position. Married people had lower levels of burnout; doctors with more than five years of service were less likely to experience burnout; gender was not a significant factor affecting burnout; and position had a more complex effect on burnout (Yao et al., 2021).

2.3.2.2 Work characteristics factors

First, overload can lead to burnout, with particularly pronounced consequences for emotional exhaustion. Among physicians in different departments, emergency medicine physicians are more likely to experience burnout (Boutou et al., 2019). Compared to administrators and non-technical staff, healthcare workers have the highest levels of emotional exhaustion, depersonalisation and reduced personal accomplishment (Ogungbamila, 2013). The shift system is associated with depersonalisation; night work, poor working conditions and inadequate supplies may all contribute to burnout. Amofo et al. (2015) demonstrated the negative relationship between burnout and job satisfaction. The level of job title is also related to burnout, with one study showing higher levels of burnout among healthcare workers with higher titles (C. Y. Xu et al., 2019). Work stress is a concept in organizational behaviour and management that focuses on the interaction between individuals and their environment. When studying work stress, researchers are most concerned with workload, which has a significant effect on burnout. A survey among teachers by Gold and Roth (2013) showed that workload was a significant factor influencing burnout. Similarly, emotional exhaustion is positively related to workload among nurses (Coffey, 1999; Coffey & Coleman, 2001). In addition, there

is a significant relationship between workload and emotional exhaustion among IT practitioners (Moore, 2000).

A study of a sample of all residents who attended the 2019 training at the National Academy of Medical Sciences in Nepal found significant differences in burnout scores across four dimensions: gender, marital status, years of residence and specialty. Multivariate analysis showed that specialty (general surgery, obstetrics and gynaecology and anaesthesiology) and weekly working hours were significantly associated with increased risk of burnout (Shahi et al., 2022). A Japanese study of 4,306 residents from 416 hospitals found that longer working hours were associated with higher scores of emotional exhaustion and depersonalisation, but no such association was identified for personal achievement (Ishikawa, 2022). In a questionnaire survey of junior doctors attending postgraduate training in the Northwest of England, 326 valid questionnaires were collected and analysed. The results indicated that most stressors were positively associated with emotional exhaustion and depersonalisation; “training interrupted by the COVID-19 pandemic” was negatively associated with emotional exhaustion; except for the stressor of “the transmission of the COVID-19 pandemic”, most stressors were negatively related to personal achievement; “fatigue” was positively related to emotional exhaustion and depersonalisation; “pandemic-related workload increase” was positively associated with emotional exhaustion while negatively related to personal achievement (A. Y. Zhou et al., 2022). Another study based on a questionnaire survey of 22,213 doctors from 144 tertiary public hospitals in 31 provinces in China revealed that factors significantly associated with burnout included: lower age, divorce or widowhood, lower educational background, working in internal medicine department, longer working hours per day, working in a general hospital, being in Eastern China, and experiencing disputes, disruptions, and physical and verbal violence (Y. N. Wu et al., 2021).

2.3.2.3 Organizational factors

In addition to the characteristics of work itself, organizational factors can also have an impact on burnout. Organizational factors include organizational structure, organizational climate, organizational justice, organizational commitment, organizational expectations, organizational culture, and type of organization. Brown et al. (2019) demonstrated that burnout is negatively related to organizational commitment and that creating a healthy and supportive work environment that recognizes employees’ contributions at work can help reduce burnout among employees (Brown et al., 2019). Using hierarchical multiple regression analysis, Sui and Jia (2018) demonstrated that perceived organizational support had an effect on emotional

exhaustion and depersonalization dimensions and was negatively related to burnout, which were consistent with the findings by Z. W. Wu et al. (2019). A study among doctors in six hospitals in the Kaunas region of Lithuania identified lack of supervisor, job demands, high job control, lack of colleague support, and job insecurity to be significantly related to all three sub-dimensions of burnout. The probability of all three dimensions of burnout was increased by high job demands; the probability of work-related burnout was reduced by high job control; and the probability of client-related burnout was increased by high job insecurity increased (Žutautienė et al., 2020).

2.3.3 Measurement of burnout

Based on a three-dimensional model of burnout, Maslach and Jackson (1981) developed the first burnout scale known as Maslach Burnout Inventory-Human Services Survey, abbreviated as MBI-HSS, to assess the level of burnout among workers in the service industry. The MBI-HSS consists of three subscales corresponding to the three dimensions of burnout, namely emotional exhaustion, depersonalisation and lack of personal accomplishment (Maslach & Jackson, 1981). The MBI-HSS has a total of 22 items, nine of which measure emotional exhaustion, five of which measure depersonalisation, and eight of which measure lack of personal accomplishment. The scores on each dimension are used to represent the level of emotional exhaustion, depersonalisation and lack of personal accomplishment. As one of the most representative and recognised measures of burnout, the MBI-HSS is regarded as the “gold standard” for measuring burnout and is widely used in most studies on burnout.

Based on an revision of the MBI-HSS, Maslach et al. (1996) introduced the Maslach Burnout Inventory-General Survey (MBI-GS) scale, which is applicable to almost all occupations. As one of the key groups in the study of burnout, healthcare workers had always attracted a lot of research attention. Therefore, a Maslach Burnout Inventory-Human Services Survey for Medical Personnel (MBI-MP) was developed specifically for healthcare workers. While maintaining the three-dimensional structure, the term “patient” was used instead of “service recipient” to make the scale more specific to medical personnel.

Since the introduction of the MBI-GS, on the one hand, Maslach et al. (1996) continued to refine and improve the scale and introduced a series of MBI scales; on the other hand, new burnout scales have also been proposed to address limitations in the scope of application, dimensions and items of the MBI scales. For example, Malakh-Pines et al. (1981) compiled a unidimensional “Burnout Measure” (BM), which consists of 21 items scored on a seven-point

Likert scale to measure the extent of physical, emotional and mental fatigue. Through simplifying the “BM, Malach-Pines (2005) developed the Burnout Measure Short Version (BMS). The BMS was streamlined from the initial 21 items to ten items and has good reliability and validity. In addition, in 1998, Demerouti and Nachreiner (1998) developed a burnout scale known as the Oldenburg Burnout Inventory (OLBI). This scale was structured in such a way that only two dimensions, exhaustion and disengagement, were kept and the dimension of reduced personal accomplishment was removed.

2.4 Empathy

2.4.1 Empathy and its importance in healthcare service delivery

Empathy is the ability to perceive the inner state of being of others and to put oneself into others’ shoes. In the process of communication, both parties perceive and sense each other’s emotions through body language, such as gestures and expressions, to elicit emotional resonance and make the right response (An, 2008). Empathy can be seen from four perspectives: firstly, empathy is a dynamic and ever-changing psychological process; secondly, empathy is seen as a positive and active response to individuals; thirdly, empathy is an emotional response formed through a comprehensive perception and awareness of another person’s emotions and current or upcoming emotional state; fourth, in general, empathic responses can trigger corresponding behavioural responses (J. Chen et al., 2007). Currently, mainstream research considers empathy a multifaceted construct encompassing cognitive processes, affective responses and behavioural responses.

Doctor empathy, as its name suggests, is the ability of a doctor to feel the patient’s needs and pain and to understand what the patient is going through from the patient’s perspective (Hojat et al., 2010). “Empathy” is the best bridge for a positive interaction and effective communication between doctors and patients, and it is also an important manifestation for a doctor’s spirit. “Empathy” is an important concept of service that doctors follow when dealing with DPRs (Q. Xu et al., 2011). Empathy requires doctors to pay attention to the patient, understand the patient’s feelings, think from the patient’s perspective (H. H. Li et al., 2013), and communicate effectively with the patient to express their understanding of the patient (Kerasidou & Horn, 2016). “Empathy” is a process of interacting with the patient’s feelings, and emotional resonance with the patient allows the doctor to gain the patient’s trust and encourages the patient to communicate his/her thoughts with the doctor. This self-expression

can help improve the patient's immune system and achieve better treatment outcomes, thus facilitating the patient's recovery. Applying empathy in clinical settings cannot only stabilise patients' emotions and benefit their recovery but also improve physical & mental health and job satisfaction. Having good empathy allows doctors to gain more respect and recognition for their work from patients, thus increasing their job satisfaction. Besides, numerous studies have shown that "empathy" is conducive to reducing burnout, emotional exhaustion and work stress among doctors.

Several scholars have specifically explored the concept of physician empathy. Hojat, Gonnella, Nasca, et al. (2002) define physician empathy as a cognitive attribute that involves understanding a patient's internal experiences and perceptions and conveying that understanding. Mercer and Reynolds (2002) argue that physician empathy is a complex multidimensional concept consisting of moral, cognitive, emotive and behavioural components. Empathy in clinical settings involves an ability to: 1) understand what the patient is going through, thinking and feeling; 2) to express that understanding and check its accuracy; and 3) to adopt a treatment approach that is beneficial to the patient based on that understanding (Mercer & Reynolds, 2002).

Physician empathy, from the patient's perspective, is "his/her feelings of being understood and accepted by the physician" (S. S. Kim et al., 2004, p. 239), and this understanding and acceptance consists of both cognitive and emotional dimensions. The cognitive dimension of physician empathy refers to the physician's ability to understand his/her patients' mental state in an accurate manner (the ability to take another person's perspective) and to effectively communicate this point of view to his/her patients. The affective dimension of physician empathy refers as the physician's ability to respond to and improve the emotional state of his or her patients. Yao et al. (2012) argue that clinical empathy refers to the ability of healthcare workers to recognise a patient's emotional state and respond to it in a timely and appropriate manner, thereby improving clinical outcomes. In addition, some scholars argue that pain empathy is a mental ability to "understand another person's pain", and it involves perceiving, experiencing and giving affective responses to another person's pain (Danziger et al., 2006; J. Meng et al., 2012).

2.4.2 Dimensions of empathy

Based on an analysis of the meaning of the dimensions of "empathy", the components of empathy are mainly identified from three perspectives.

The first is a unidimensional interpretation of the meaning of “empathy”; Mehrabian and Epstein (1972) argued that empathy is a psychological concept that focuses on arousal and engagement in the affective dimension and developed a scale to measure emotional empathy in adults in general. Hogan (1969) considered “empathy” a cognitive orientation of individuals to recognise and understand the emotions of others, based on which he formed a “cognitive empathy” scale.

The second is an interpretation of the complex holistic structure of empathy. Following a unidimensional analysis of the components of empathy, Gladstein (1983) proposed that “human empathy” is generated by the interaction between “awareness” and “emotion”, i.e., the binary component theory of empathy, according to which an individual recognises and understands another person’s emotion through cognitive empathy and then processes his/her emotions through the affective empathy. The binary component theory of empathy was further refined in the study conducted by Davis (1983), who included the whole process of empathy in the meaning of the concept and treated empathy as a whole. Specifically, empathy is a series of structures related to an individual’s reaction to the experiences of others. This multi-dimensional construct is composed of “perspective taking”, “empathic concern”, “fantasy” and “personal depression”. It has two prerequisites: the individual subject and the objective situation. Davis (1983) summarised the origin, development, affective and non-affective outcomes of “empathy” and developed the Interpersonal Reactivity Index (IRI), which has become the most widely used multidimensional empathy scale in the world.

The third is a dynamic and process-oriented interpretation of “empathy”. The study by Håkansson and Montgomery (2003) identified empathy to be a multi-stage psychological experience consisting of affective responses, cognitive understanding and helping behaviour. The definition of empathy put forward by C. H. Liu et al. (2009) completes the concept. They consider “emotion sharing” and “cognitive appraisal” to be emotional responses, and the empathizer directs this emotion and behaviour towards the target in a dynamic top-down and bottom-up process.

2.4.3 Antecedents and consequences of empathy

Research on factors influencing empathy: Piumatti et al. (2019) found that external motivational factors (such as future earning potential and prestige), internal motivational factors (such as caring for patients and saving lives), and deep approach to learning are positively related to empathy. In a study on the empathy of oncology surgeons, Hou et al. (2017) found that factors

affecting their empathy included and were not limited to title, education, gender and form of employment. A study on the effect of neurologists' empathy on patients' depression revealed that neurologists with high levels of empathy had a greater positive impact on the depression of hospitalized stroke patients, while neurologists with lower levels of empathy had a smaller positive impact on the depression of hospitalized stroke patients (L. S. Pan et al., 2017). Shaheen et al. (2020). Shaheen et al. (2020) explored the levels of empathy of undergraduate medical students of different genders and school ages based on a survey among 260 undergraduate medical students in Pakistan. Data were collected using the Jefferson Scale of Empathy- Student version (JSE-S). The results showed that females scored higher than males, with the highest levels of empathy in the freshmen and the lowest in the juniors. The overall level of empathy among medical students was severely low, suggesting the need for curriculum reform (Shaheen et al., 2020).

In a study of 262 physicians and surgeons in Rawalpindi, Rashid et al. (2021) explored physician empathy and its relationship with fatigue levels. The results showed that physicians had lower levels of empathy, that physicians had higher levels of empathy than surgeons, and that empathy was significantly negatively associated with fatigue. Furthermore, in terms of gender, male internists had higher levels of empathy than females, while male surgeons had lower levels of empathy than females (Rashid et al., 2021). Pavlova et al. (2021) systematically reviewed 152 studies on empathy among internists and found that the predictors associated with physician empathy were gender, experience, values, emotions, coping strategies, quality of life and burnout; environmental predictors included organizational structure, resources, culture, clinical environment and process; while patient-related predictors included ease of communication and physicians' perceptions of patient motivation; physicians were less empathetic towards patients with low socioeconomic status and minority patients (Pavlova et al., 2021).

Waddimba et al. (2021) explored the structural relationships between such variables as occupational well-being, psychological empowerment, work meaningfulness and resilience with cognitive and affective empathy among private practice physicians and advanced practice providers in Texas. The results indicated that resilience was positively related to cognitive and affective empathy and that work meaningfulness and well-being were positively related to affective empathy but not to cognitive empathy (Waddimba et al., 2021). Hamidia et al. (2020) examined whether psychological well-being, individual dispositions and spiritual well-being predicted medical students' empathic views of the DPR. The results showed that medical students scored high on perceptions of clinical empathy, but the scores decreased with

increasing years of education. Besides, female students scored higher on empathy than male students. Students' views on clinical empathy were significantly positively related to spiritual well-being, psychological well-being and cognitive empathy. Spiritual well-being and cognitive empathy positively predicted students' perceptions of clinical empathy in the DPR (Hamidia et al., 2020). W. J. Huang et al. (2020) included 112 general practitioners (GPs) from Luohu District, Shenzhen, China in a study to measure GPs' empathy and to explore its relationships with gender, age and personality types. The results showed that men scored higher than women on empathy dimension and lower than women on the sympathy dimension. The three personality traits of GPs were mainly conscientiousness, agreeableness and emotional stability; the trait of "openness" was positively related to "empathetic concern" and "emotion" (W. J. Huang et al., 2020). In a study of 180 residents in a Grade A tertiary hospital in Zhengzhou City, Henan Province, China, L. X. Zhang et al. (2020) identified gender, ownership of a medical license, education background, training time, and type of household registration to be the main factors influencing residents' empathy levels; emotional care was significantly negatively associated with loss of control and neuroticism, and positively associated with extraversion; empathy was significantly negatively related to tension, loss of control and neuroticism, and positively associated with the personality trait of agreeableness (Zhang et al., 2020).

The impact of physician empathy and its importance have been extensively studied by scholars worldwide, and the following three main types of outcomes have been identified.

(1) Empathy is conducive to improving DPRs, patient satisfaction and doctor-patient trust.

S. S. Kim et al. (2004) conducted a study among 550 Korean patients, and the results showed that patient empathy towards physicians, especially interaction with physicians, could be improved through the exchange of information, perception of physician expertise, interpersonal trust and cooperation with physicians, thus improving patient satisfaction and compliance (S. S. Kim et al., 2004). Weng et al. (2011) conducted a survey among 50 physicians and 549 outpatients on physicians' emotional intelligence, empathy, relationship with the physician, feelings about oneself, and satisfaction with the physician before and after surgery. The results indicated that pre-operative relationship with the physician had a positive effect on patient satisfaction before surgery and that physician empathy influenced patient satisfaction after surgery (Weng et al., 2011). In a study on oncology treatment, Lelorain et al. (2012) found that physician empathy for the patient helped increase patient satisfaction with the physician and reduce patients' negative emotions, thus helping patients discuss treatment options and choose the most appropriate treatment. Blanco Canseco et al. (2020) uncovered a significant relationship between physician empathy and patient empathy. Specifically, physician empathy

varies depending on the patient's condition.

Y. J. Wang et al. (2022) used structural equation modelling to examine the effect of physician empathy on DPR and the mediating role of physician communication in the relationship between physician empathy and DPR using 2,665 physicians and 2,983 patients in China as sample. The results showed that physician communication not only effectively predicted DPR, but also mediated the relationship between physician empathy and DPR; a further analysis of the underlying mechanisms influencing DPR revealed that physician communication mediated the relationship between perspective taking and DPR as well as the relationship between empathy and DPR (Y. G. Wang et al., 2012). The study by Kirby et al. (2021) revealed a strong association between patient perception of attending physicians' empathy and patient satisfaction. Patient perception of attending physicians' empathy decreased when working with senior residents compared to working alone or with junior residents. However, changes in patient perception of attending physicians' empathy did not significantly affect patient satisfaction with the attending physician (Kirby et al., 2021). Q. Wu et al. (2022) explored the relationships between DPR, physician empathy and patient trust based on a survey among 3,289 patients in 103 hospitals in East, Central and West China. The results showed that physician empathy, overall patient trust and patient trust in physician benevolence and competence had moderate to high levels of association with DPR; mediation analyses indicated significant indirect effects of physician empathy on DPR through overall patient trust, and significant mediating effect of patient trust on physician benevolent behaviour (Q. Wu et al., 2022).

Byrd et al. (2021) included 28 emergency physicians and 423 patients in their study to explore the relationships between empathy, burnout and patient satisfaction and to further analyse the interactions among these factors. The results showed that patient-assessed physician empathy was strongly positively correlated with patient satisfaction. No strong pairwise correlations were identified between patient-assessed physician empathy, physician self-assessed burnout and physician self-assessed empathy. However, physicians with high levels of patient-assessed empathy, low levels of burnout and high levels of self-assessed empathy achieved higher levels of patient satisfaction, suggesting a synergistic effect between empathy and burnout. These findings suggest that different interventions may be appropriate for emergency physicians with different health characteristics to maximise patient satisfaction (Byrd et al., 2021). Too et al. (2021) completed an online questionnaire with a sample of 259 community adults with chronic pain to analyse the relationships among patient-perceived physician empathy, treatment satisfaction, depression and anxiety symptoms and their potential

mechanisms. The results revealed a positive association between perceived empathy and treatment satisfaction and a significant negative relationship between perceived empathy and depressive symptoms, but no significant negative association between perceived empathy and anxiety symptoms; treatment satisfaction played a significant mediating role in the relationship between perceived empathy and patients' depressive and anxious symptoms (Too et al., 2021). Y. J. Yang et al. (2021) conducted a questionnaire survey of 800 physicians in four Grade A tertiary hospitals in Harbin, Heilongjiang Province, China, to explore the mediating role of physician empathy in the relationship between stress and DPR. The results showed that male physicians' empathy partially mediated the relationship between stress and DPR, with a mediating effect of 13.1% of the total effect, while female physicians' empathy fully mediated the relationship between stress and DPR. These findings suggest that the mediating role of empathy in the relationship between stress and DPR was different among doctors of different genders (Y. J. Yang et al., 2021).

(2) Empathy is beneficial to enhancing patient treatment and prognosis, improving patients' health behaviours and saving healthcare resources.

Janssen et al. (2008) concluded that the psychosocial care provided by physicians, especially the patient's trust in the physician, has a significant impact on patient outcomes. When physicians ignore patients, patients will become less dependent on physicians, and the treatment will become less effective. As a result, patients will be dissatisfied with the treatment outcomes (Neumann et al., 2011). Rakel et al. (2011) noticed that flu patients' perception of empathy from their doctors significantly reduced the severity and duration of symptoms. Flickinger et al. (2016) found that the empathy of healthcare workers to be associated with drug self-efficacy in HIV patients. Acquati et al. (2019) classified osteopathic trainees into high and low empathy groups and administered pain management to 39 patients suffering from chronic musculoskeletal pain. The results showed significant improvement in pain in the high empathy group. Doctors with high levels of empathy had a significant impact on patient adherence, self-efficacy, and subjective and objective outcomes. Similar studies have revealed identical findings among trauma, hypertension, diabetes, chronic pain and cancer patients.

In a study of 209 adult patients, Martikainen et al. (2022) investigated whether patients' ratings of physician empathy were associated with their perceptions of health following an online clinic meeting and whether the empathic experience could be enhanced by adding an automated past medical history questionnaire completed prior to the visit. Results showed that patients' perceptions of physician empathy in chat-based encounters were associated with less concern about their symptoms, perceptions that their symptoms were less severe, as well as a

higher likelihood of patient-assessed symptom relief, suggesting that patients' perceptions of physician empathy could support their self-perceived health status following online encounters. Patients' experiences of physician empathy were important not only in face-to-face encounters, but also in text-based interactions that supported patients' perceptions of health (Martikainen et al., 2022). Simões et al. (2021) explored patients' perceived levels of physician empathy and empowerment following consultations with their family physicians and tested whether physician empathy was associated with patient empowerment. After adjusting for sociodemographic variables, empathy turned out positively related to patient empowerment. In a study of 178 patients with Crohn's disease, X. L. Xu et al. (2020) examined the relationship between patients' perceptions of physician empathy and anxiety, self-efficacy, sleep quality and markers of inflammation. The results suggested that patients' perceptions of physician empathy were negatively associated with anxiety and interleukin-6 and positively associated with self-efficacy and sleep quality. Patient anxiety, self-efficacy and sleep quality mediated the association between empathy and interleukin-6 (X. L. Xu et al., 2020).

(3) Empathy can help improve career satisfaction and reduce burnout among healthcare workers.

Healthcare workers' empathy benefits both patients' treatment and patients' work as well as physical and psychological well-being. A study by Hojat, Gonnella, Mangione, et al. (2002) showed that medical students with higher levels of empathy scored higher on medical tests and performed better on professional skills. A study of nurses by H. H. Zhang et al. (2013) suggested that burnout could be reduced by increasing nurses' empathy. T. Wang et al. (2015) also identified nurses' level of empathy to be an important factor in reducing the negative impact of burnout on subjective well-being in China. G. Y. Liu et al. (2018) found that the level of empathy of medical students could promote their emotional resilience. Yuguero et al. (2017) argued in favour of a significant negative association between physician burnout and empathy levels. The study by Schwan (2018) revealed that the clinical settings physicians are in and their understanding of and emotional resonance with patients significantly impact their empathy. Delgado Bolton et al. (2022) examined empathy and lifelong learning as potential predictors of occupational well-being and symptoms related to work stress in a study of 40 physicians and 40 nurses in Paraguay. Empathy and lifelong learning played an important role in the prevention of work stress among doctors and nurses.

2.4.4 Measurement of empathy

Currently, there are four measures of empathy: self-report, visitor-report, observer-rated and physiological measurement. Eisenberg and Miller (1987) measured empathy by observing changes in another person's psychological and physiological pain. Hogan (1969) developed the Hogan Empathy Scale (HES) to measure empathy in the perspective taking dimension. Davis (1983) developed the IRI. Among the numerous measures of empathy, the best known is the Jefferson Scale of Empathy (JSE) developed by Hojat et al. (2001) at Jefferson Medical College. The JSE analyses the definition, components and measurement of empathy for healthcare practitioners, including doctors, medical students and nurses. Professor Hojat pointed out that physician empathy is composed of three dimensions: perspective taking, compassionate care and standing in the patient's shoes (Hojat, Gonnella, Nasca, et al., 2002). The scale is available in 17 translations, including German and Japanese versions, and is widely used around the world. Besides, it has been empirically tested to have good reliability and validity.

2.5 The JD-R model and the COR theory

2.5.1 The JD-R model

In a broad sense, job characteristics are certain job-related factors and attributes. The results of various studies suggest that employees' occupational psychology, work behaviour and performance are heavily influenced by job characteristics. The deepening of research on burnout provided a basis for the development of the JD-R model. Regarding the interrelationship between different job characteristics and burnout, Demerouti et al. (2001) concluded that job demands and job resources are the characteristics that influence burnout, and that these two aspects correspond to the "health impairment process" and the "motivational process", respectively, constituting the basic framework of the model (Demerouti et al., 2001). Based on the work by Demerouti et al. (2001), Schaufeli and Bakker (2004) extended and improved the model by adding engagement in the model and integrating the burnout and engagement models.

The initial JD-R model proposed by Demerouti et al. (2001) and the extended model proposed by Schaufeli and Bakker (2004) were both based on the core assumption that job characteristics consist of two aspects: job demands and job resources. Besides, both models assumed that job demands and job resources directly influence employees' work attitudes and behaviours. The first assumption of the JD-R model is that the job characteristics of each

occupation can be classified into two main categories. Job demands, as the first category, refer to job characteristics that require employees to make long-term effort or afford cost physically and mentally. Job resources, as the second category, refer to job characteristics that provide physical and mental support or assistance to employees and that facilitate their progress.

The second assumption of the JD-R model is that employees' "health impairment process" and "motivational process" are stimulated by job demands and job resources. The "fatigue process" refers to the high physical and energy consumption of employees under high job demands. If employees are not supported by job resources, a series of negative outcomes such as burnout will follow. The "motivational process" refers to the internal and external motivational function of job resources, which can significantly increase employee engagement and improve performance. Besides, the two processes would interact with each other when job demands and job resources exercise their functions respectively. The "fatigue process" is significantly moderated by the job resources, while as work intensity increases, the "motivational process" becomes more pronounced.

Based on the framework of the model, scholars have supplemented and refined the model by incorporating findings of a large number of empirical studies. Among them, Xanthopoulou et al. (2007) argued that the model did not provide a comprehensive and detailed understanding of resources as it ignored the role and influence of employees' own personal resources in the workplace, and that the explanatory power and comprehensiveness of the model could be improved by incorporating personal resources. The concept of personal resources was first introduced by Hobfoll (1989) in the COR theory which will be elaborated next. The resources available to individuals on four levels - psychological, social, cognitive and physical - are all personal resources in a broad sense. In this study, empathy is introduced and considered as a personal resource for doctors to deal with the job demands.

2.5.2 The COR theory

The COR theory states that individuals are always inclined to seek and possess resources and feel significant psychological stress and tension when they perceive that resources are being lost or have been lost, and that desired resources are not available. The process by which resources interact between the individual and the social environment is referred to as the COR theory. Resources are defined as "objects, personal characteristics, conditions, or energies that valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (Hobfoll, 1989, p. 516). Examples include:

participation in decision-making, social support, job development opportunities, resilience, optimism, autonomy and self-efficacy (De Cuyper et al., 2012; Hagger, 2015; Van Woerkom et al., 2016; W. L. Wu & Lee, 2020).

The main idea of the model is that resources can be classified into four types: material resources such as means of transport and housing belong to the first type (Hobfoll, 1989). Such resources satisfy survival needs. The second type of resources is condition resources, such as family, friends and power, which are often used to obtain other key resources and are a rewarding condition. Personal resources, such as self-efficacy and self-esteem, belong to the third type of resources, which serve to resist and defend the individual against stress. The fourth type of resources is energy resources, such as time, skills, money and knowledge, through which individuals are able to access a variety of other resources. To achieve certain goals, people tend to prefer to acquire more resources than they already have. In the workplace, individuals are prone to work attitude problems such as burnout and low satisfaction when they are faced with situations such as loss of job resources, the risk of losing job resources, a mismatch between job demands and the available resources, or the impossibility of getting the expected return on the resources invested (De Cuyper et al., 2012; Hagger, 2015; Prapanjaroensin et al., 2017; Van Woerkom et al., 2016; W. L. Wu & Lee, 2020).

The COR theory suggests that job demands and job resources can predict different dimensions of burnout. Burnout is most likely to be caused by job demands, as the loss of job resources is due to the need to deplete employees' resources to meet job demands. The role of personal resources in predicting burnout is fully highlighted in the COR theory.

2.6 Research hypotheses

At present, the level of doctor-patient trust in China is low, and the safety of healthcare workers is always under serious threat, leading to increased psychological stress among healthcare workers. To understand the process by which doctor-patient mistrust plays its role, it is important to consider emotional coping strategies (such as deep acting and surface acting) in response to doctor-patient mistrust. As a psychological stressor, doctor-patient mistrust inevitably elicits an emotional response, which triggers an emotion regulation process where the individual adopts different emotional labour strategies to meet the organization's emotional display demands. According to the theory of emotion regulation by Gross (1998) and A. A. Grandey (2000) and the definition of emotional labour, a workplace environment characterised by doctor-patient mistrust and doctors' perception of doctor-patient mistrust will trigger

emotional reactions in doctors, causing them to perform their work through emotional labour (surface acting and or deep acting) while interacting with patients (Ma et al., 2021). It has been mentioned that with the frequent occurrence of medical disputes, hospitals choose to sacrifice the interests of doctors for fear of losing their reputation, which greatly undermines the legitimate rights of healthcare workers (L. L. Pan & Liu, 2011). This has forced doctors to perform more emotional labour to “please” patients or to maintain a more positive workplace atmosphere to increase patient cooperation and compliance. Based on this, this thesis proposes the following hypotheses:

H1.1: Doctor-patient mistrust is positively related to surface acting.

H1.2: Doctor-patient mistrust is positively related to deep acting.

As a key factor in the DPR, the impact of patients’ trust in doctors on patient outcomes has been widely studied. In contrast, few studies have examined the impact of patient trust in doctors on doctors’ psychological well-being. The study of resident doctors in Taiwan, China conducted by E. C. H. Huang et al. (2019) showed that reduced patient trust was significantly associated with higher levels of burnout among resident doctors. Low trust from patients is the main type of high work-related emotional load. Thus, low patient trust in doctors may contribute to burnout among doctors. Furthermore, research has shown that reductions in cognitive social capital, of which trust is a key component, affect common psychiatric disorders. Therefore, it is safe to assume that lower trust from patients may be associated with doctor burnout. Low trust from patients may cause doctors to feel insecure and inferior, which can lead to chronic stress and consequently burnout.

Based on the existing studies, this thesis puts forward the following hypothesis:

H2: Doctor-patient mistrust is positively related to burnout.

Emotion regulation is the mechanism underlying the relationship between doctor-patient mistrust and emotional exhaustion. When faced with doctor-patient mistrust, individuals are expected to regulate their emotions, which may lead to emotional exhaustion. Indeed, research has shown that emotional labour strategies are an important factor influencing burnout. Firstly, the emotional labour strategies of surface acting and deep acting can have different direct effects on burnout. When performing surface acting, employees’ inner feelings often do not align with the organization’s expected emotional displays, thus leading to burnout and emotional disorder. In contrast, when performing deep acting, employees’ inner feelings are in alignment with the emotional displays required by the organization, thus reducing burnout. A literature review confirmed a significant association between burnout and emotional labour strategies, with most findings indicating a consistent positive relationship between surface acting strategy and

burnout. However, research on the association between deep acting strategy and burnout pointed to divergent results (Kariou et al., 2021). Brotheridge and Lee (2002) argue that deep acting can negatively predict emotional exhaustion. Specifically, the use of deep acting significantly reduces emotional exhaustion.

Research results show that emotional labour has different effects on all three aspects of burnout, namely emotional exhaustion, depersonalisation and reduced personal accomplishment. On the one hand, the impact of surface acting on depersonalisation and emotional exhaustion is pronounced (A. A. Grandey, 2003; Zammuner & Galli, 2005b), while its impact on reduced personal accomplishment differs significantly among different samples. Some studies suggest a positive relationship between surface acting and reduced personal accomplishment (Zammuner & Galli, 2005b), while other studies suggest a negative relationship between the two (Brotheridge & Lee, 2002); on the other hand, deep acting has a significant negative impact on emotional exhaustion (Moon et al., 2013), a significant positive impact on reduced personal accomplishment (Brotheridge & Grandey, 2002; Brotheridge & Lee, 2002), and significant negative impact on depersonalisation (Brotheridge & Lee, 2002). Based on the above studies, this study proposes the following hypotheses:

H3.1: Surface acting is positively related to burnout.

H3.2: Deep acting is negatively related to burnout.

Considering the relationship between doctor-patient mistrust and emotional labour (surface acting and deep acting) in H1.1 and H1.2, and the above H3.1 and H3.2, thus the following hypotheses are proposed.

H4.1: Surface acting mediates the relationship between doctor-patient mistrust and burnout.

H4.2: Deep acting mediates the relationship between doctor-patient mistrust and burnout.

Doctor empathy is the ability of a doctor to understand the patient's experiences, needs and thoughts through active communication with the patient, thereby enhancing the accuracy of communication to provide better treatment. It is because of the unique nature of the work of healthcare workers who are faced with life, illness and death on a daily basis that empathy can have an impact on their work. Research has shown that, on the one hand, empathy can lead to improved DPRs, which contribute to increased job satisfaction and a greater sense of accomplishment, which can reduce work stress; on the other hand, prolonged empathy can also lead to personal distress, which can lead to empathy fatigue and, subsequently, burnout.

The role and significance of empathy have been extensively studied and discussed. The main findings suggest that empathy has a win-win effect for both patients' treatment outcomes

and healthcare workers' own work as well as physical and mental health. In a study of nurses, H. H. Zhang et al. (2013) found that improving nurses' empathy could reduce their burnout. Empathy was also found to have a positive effect on the emotional resilience of medical students (G. Y. Liu et al., 2018). The study carried out by Yuguero et al. (2017) suggested a negative relationship between physician burnout and empathy. Specifically, physicians with high levels of empathy experienced low levels of burnout. Schwan (2018) argued that physician empathy was influenced by patients' understanding and emotional resonance. Not only can empathy directly influence burnout (Wilkinson et al., 2017; Yuguero et al., 2017), but it also influences the relationship between other psychosocial factors and burnout in a much more attention-grabbing way - as a moderator (Khalaila, 2022; Koopman et al., 2021; Laverdière et al., 2019; M. X. Liu et al., 2021; Picard et al., 2016).

This study argues that empathy can be considered as an important personal resource. Integrating the JD-R model and the COR theory, doctor-patient mistrust will lead to emotional labour (surface acting and deep acting), which will deplete doctors' resources. Empathy, as a personal resource, can replenish the resources depleted by emotional labour and thus attenuate the relationship between doctor-patient mistrust and emotional labour/burnout. Based on the above discussion and assumptions, this thesis further proposes the following hypotheses:

H5.1: Empathy moderates the relationship between doctor-patient mistrust and surface acting, such that doctor-patient mistrust is less positively related to surface acting among doctors with high levels of empathy than those with lower levels of empathy.

H5.2: Empathy moderates the relationship between doctor-patient mistrust and deep acting, such that doctor-patient mistrust is less positively related to deep acting among doctors with high levels of empathy than those with lower levels of empathy.

H5.3: Empathy moderates the relationship between doctor-patient mistrust and burnout, such that doctor-patient mistrust is less positively related to burnout among doctors with high levels of empathy than those with lower levels of empathy.

In summary, this study endeavours to test whether empathy and emotional labour play a moderated mediating role in the relationship between doctor-patient mistrust and burnout.

Based on the above research hypotheses and with reference to the JD-R model and the COR theory, this thesis proposes a research model as shown in Figure 2.1. According to the model: doctor-patient mistrust, as a job demand that doctors have to cope with at work, contributes to the use of emotional labour strategy, which will deplete doctors' emotional resources. The conflict between doctors' inner feelings and their displayed expressions will inevitably lead to burnout, especially emotional exhaustion. Furthermore, when faced with doctor-patient

mistrust, doctors' empathy may act as a personal resource that moderates the relationship between doctor-patient mistrust and emotional labour as well as the relationship between doctor-patient mistrust and burnout.

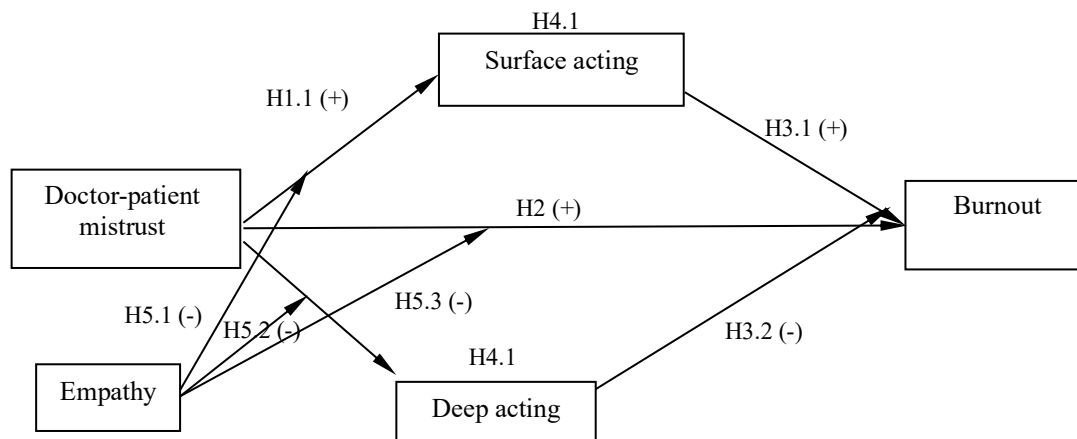


Figure 2.1 Research model

Chapter 3: Research Methods

This chapter introduces the sample, data collection methods, measures of the variables, quality control and statistical analysis methods for the data, and tests the internal consistency reliability and construct validity of the scales for subsequent data analysis.

3.1 Participants

The participants of this study were from the People's Hospital of Liaoning Province, which was alternatively known as Liaoning Cardiovascular Hospital or Liaoning Red Cross Hospital or People's Hospital of China Medical University. It is a large general Grade A tertiary hospital with 1,999 beds. In China, the level of a hospital is determined based on the evaluation of its qualifications, such as size, human resources, research capacity, technical strength and medical equipment. As per the Measures for the Administration of Hospitals (for Trial Implementation) (China's Ministry of Health, 1989), hospitals in China are classified into three levels: primary (less than 100 beds), secondary (100-500 beds), and tertiary (more than 500 beds). The three levels are further sub-categorised into three subsidiary grades, A, B, and C. In addition, one special level, 3AAA, is reserved for the most specialized Grade A tertiary hospitals. In summary, Chinese hospitals are classified into three levels and ten grades, and Grade A tertiary hospitals are almost the best hospitals only next to 3AAA hospitals. The hospital integrates medicine, education, research, prevention and emergency response, with a total floor area of 172,000 square meters.

By the time of this study, the hospital had been equipped with 58 clinical departments, 15 medical laboratories and 27 functional departments. It boasted eight provincial key specialties, namely cardiovascular medicine, neurology, general surgery, intensive care medicine, gastroenterology, anaesthesiology, ultrasound medicine and clinical nursing as well as 11 provincial key clinical specialty departments, namely Department of Respiratory Medicine, Department of Emergency Medicine, Department of Orthopaedics, Department of Nephrology, Department of Neurosurgery, Department of Oncology, Department of Obstetrics, Department of Radiology, Department of Psychology, The First Department of General Surgery and The Fifth Department of General Surgery. The hospital had 6,592 sets of equipment, with a total investment of over 600 million yuan. It employed a total of 2,134 employees, 482 of whom had

senior professional and technical titles. Overall, the People's Hospital of Liaoning Province was a highly representative hospital in terms of the number of hospital beds, departmental settings, equipment, staff size and service scope.

The inclusion criteria for the participants were:

- (1) clinicians of the People's Hospital of Liaoning Province;
- (2) those who had a practicing license and had been engaged in clinical work in the hospital for more than 12 months; and
- (3) those who were willing to cooperate in filling in the survey questionnaire of this study.

The exclusion criteria for the participants were:

- (1) those not engaged in frontline clinical work;
- (2) those who had come back to work after retirement; and
- (3) those with poor compliance and were unable to cooperate in completing the survey.

3.2 Data collection

A convenience sampling method was used with all doctors in the People's Hospital of Liaoning Province as the survey participants.

A cross-sectional self-reported survey was used to collect data from August 9 to 21, 2021. After obtaining informed consent from the respondents, the researcher sent the questionnaire link on Sojump, a popular online questionnaire, examinations and voting platform in China, requesting the respondents to complete the questionnaire on their PC and mobile terminals (such as mobile phones and tablets). The survey generally took five-to-ten minutes.

Before the questionnaire survey, the author contacted the managers of the case hospital to explain the purpose, significance, methods and contents of this survey. Then he carried out this survey with the consent and active cooperation of the respondents.

The survey process in this study was as follows: first, a department was used as the basic survey unit. The researcher explained the purpose, significance, methods and content of the survey to each department head in detail. After obtaining informed consent from each department head, the researcher sent them the questionnaire link on the Sojump survey platform. Then, the head of each department explained the survey to all the doctors in his/her respective department. After obtaining their consent and active cooperation, the head of each department sent them the Sojump questionnaire link for completion according to the requirements.

3.3 Measures

3.3.1 Demographic and work-related variables

Demographic variables mainly included: age (years old), gender (male, female), marital status (unmarried/other, married) and education level (bachelor's degree or below, master's degree or above).

Work-related variables mainly included: position (ward physician, director/team leader, of which a ward physician is the doctor in charge of patients' treatment plans and is usually served by an intern, a doctor on rotation, a trainee doctor or a resident doctor as well), responsibilities (full-time clinical work, part-time management, of which part-time management refers to engagement in both clinical work and administrative management work at the same time), professional and technical title (junior, intermediate, senior), department (internal medicine, surgery, other clinical departments, or auxiliary departments), average monthly income after tax ($\leq 3,000$ yuan, 3001-6,000 yuan, 6001-9,000 yuan, $>9,000$ yuan), weekly working hours (no more than 40 hours or more than 40 hours based on an eight-hour workday and a five-day work week).

3.3.2 Doctor-patient mistrust

The doctor-patient trust dimension of the DPR-C scale developed by W. L. Zeng et al. (2018) was adopted, consisting of four items scored on a six-point Likert scale, with scores of 1-6 points representing a range from 1 point ("strongly disagree") to six points ("strongly agree"). Because this study measured doctor-patient mistrust as opposed to doctor-patient trust, the scores were reversed. In this study, the mean score of the items represented the level of doctor-patient mistrust. The higher the score, the higher the level of doctor-patient mistrust.

The four items of doctor-patient trust dimension of DPR-C are as follows:

1. My patients trust me to put their needs first.
2. My patients trust the diagnosis and treatment plans I developed for them.
3. My patients are happy to follow the treatment plan I recommend.
4. My patients believe that the tests I request them to do are reasonable.

3.3.3 Emotional labour

The surface acting and deep acting strategies of emotional labour were measured using the Emotional Labour Scale (ELS) developed by A. A. Grandey (2003) based on the scale

developed by Brotheridge and Lee (2003). The ELS, which has been widely recognised by researchers and widely used in international research, boasts sound reliability and validity (Gou et al., 2021). The Surface Acting Sub-scale consists of five items, while the Deep Acting Sub-scale consists of three items. The eight items are scored on a six-point Likert scale, ranging from 1 “never” to 6 “always”. In this study, the mean score of all the items represented the emotional labour strategy preference. The higher the score, the higher the likelihood to perform surface acting or deep acting.

The ELS items are as follows:

Surface acting:

1. I put on an act in order to deal with patients in an appropriate way.
2. I fake a good mood.
3. I fake the emotions that I must show to patients.
4. I just pretend to have the emotions I need to display for my job.
5. I put on a “mask” in order to display the emotions I need for the job.

Deep acting:

6. I try to actually experience the emotions that I must show.
7. I make an effort to actually feel the emotions that I need to display toward patients.
8. I work hard to feel the emotions that I need to show to patients.

3.3.4 Burnout

As emotional exhaustion is the core dimension of burnout, this study only measured the levels of emotional exhaustion. The MBI-GS developed by Maslach et al. (1996) was used to measure the emotional exhaustion levels of doctors. The Chinese version of the MBI-GS was revised by C. P. Li et al. (2003), and the Emotional Exhaustion Subscale consists of five items scored on a seven-point Likert scale, ranging from 0 “never” to 6 “every day”. In this study, the mean score of all items represented the level of emotional exhaustion. The higher the score, the higher the level of emotional exhaustion, and vice versa.

The emotional exhaustion items of the MBI-GS are as follows:

1. I feel physically and emotionally drained from my work.
2. I feel used up at the end of the workday.
3. I feel fatigued when I get up in the morning and have to face another day on the job.
4. Working with people all day is really a strain for me.
5. I feel burned out from my work.

3.3.5 Empathy

The items used in this study to measure doctors' levels of empathy were from the Jefferson Scale of Empathy-Health Professionals (JSE-HP) developed by Hojat et al. (2001). In 2008, the Chinese version of the JSE-HP was revised by An et al. (2008) and has good reliability and validity. The Empathy Scale used in this study consists of 11 items selected from the JSE-HP, which were scored on a six-point Likert scale, ranging from 1 "strongly disagree" to 6 "strongly agree". In this study, the mean score of all items represented the level of empathy. The higher the score, the higher the level of empathy, and vice versa.

Items of the Empathy Scale are as follows:

1. My understanding of the emotional status of the patients and their families is an important component.
2. Empathy is an important therapeutic factor in medical treatment.
3. I can hardly become a successful healthcare worker if I lack empathy.
4. My understanding of my patients' feelings gives them a sense of validation that is therapeutic in its own right.
5. I consider understanding my patients' body language as important as verbal communication in physician-patient relationships.
6. I try to pay attention to my patients' emotions in condition observation and history taking.
7. I try to understand what is going on in my patients' minds by paying attention to their nonverbal cues and body language.
8. I believe that empathy is an important therapeutic factor in medical treatment.
9. I try to think like my patients in order to render better care.
10. My patients are more likely to believe in the treatment effect when I empathize with them.
11. I try to imagine myself in my patients' shoes when providing care to them.

3.4 Data analysis

During the statistical analysis of the collected data, the author ensured that the correct statistical analysis methods were used and interpreted the results correctly based on a combination of literature and advice from statistical experts.

SPSS for Windows 21.0 and AMOS 25.0 were applied for statistical analyses, and differences were considered statistically significant at $p < .05$.

Firstly, exploratory factor analysis (EFA) was conducted to examine the factor loadings of

the items of each scale, and confirmatory factor analysis (CFA) in structural equation modelling was conducted to test the construct validity of each scale (Schuhlen & Schürkmann, 2016). The internal consistency coefficient Cronbach's α was then used to evaluate the reliability of each scale (Cortina, 1993; Taber, 2018). It is generally accepted that when Cronbach's α is greater than 0.85, the results of the scale can be used to not only diagnose, discriminate and interpret phenomena but also represent group characteristics or levels; when Cronbach's α falls between 0.70 and 0.85, the results measured can only be used to make group comparisons.

To control for common method bias, Harman's one-way test was conducted (Harman, 1967), with the unrotated first factor explaining no more than 40% of the variance. In addition, for the five measures of doctor-patient mistrust, surface acting, deep acting, empathy and burnout, one-, two-, three-, four- and five-factor models were constructed using structural equation modelling to test for common method bias through a comparison of the goodness-of-fit indices of all the models.

Pearson correlation analysis was made to test the correlations between demographic and work-related characteristics, doctor-patient mistrust, surface acting, deep acting, empathy and burnout. The *t*-test and one-way analysis of variance (ANOVA) were used to compare the between-group differences in doctor-patient mistrust, surface acting, deep acting, empathy and burnout by demographic and work-related characteristics; when the ANOVA results were significant, post hoc tests were used to analyse the significance of between-group differences.

A hierarchical linear regression model was used to analyse the relationships between doctor-patient mistrust, emotional labour strategies, empathy and burnout (emotional exhaustion) among doctors. To test the relationships between doctor-patient mistrust, empathy and emotional labour strategies, demographic and work-related variables were entered in the hierarchical regression model in the first step, doctor-patient mistrust, empathy and the interaction term of empathy and doctor-patient mistrust were entered in the second step. To test the relationships between doctor-patient mistrust, surface acting, deep acting, empathy and burnout, demographic and work-related variables were entered in the hierarchical regression model in the first step, doctor-patient mistrust in the second step, emotional labour strategies in the third step, and empathy and the interaction term of doctor-patient mistrust and empathy in the fourth step. If the relationship between doctor-patient mistrust and burnout disappeared or weakened after emotional labour strategies were entered, then emotional labour strategies might have played a mediating role. Then asymptotic and resampling strategies were used to test the mediating role of emotional labour strategies in the relationship between doctor-patient mistrust and burnout, with parameter estimation based on a Bootstrapping sample size of 5,000. A 95%

confidence interval (CI) of $a \times b$ not containing 0 was considered statistically significant (Hayes & Rockwood, 2017; Igartua & Hayes, 2021). a referred to the degree of association between the independent variable and the mediator, and b referred to the degree of association between the mediator and the dependent variable. In the hierarchical linear regression analysis, if the interaction term of doctor-patient mistrust and empathy had a statistically significant effect on surface acting, deep acting or burnout, it would suggest that empathy moderated the relationships between doctor-patient mistrust and surface/deep acting or burnout (Fang et al., 2015).

A structural equation model was constructed to test the moderated mediating role in the relationships between doctor-patient mistrust, emotional labour strategies, empathy and burnout, with a Bootstrapping sample size of 5,000 (Marsh et al., 2004; Wen et al., 2010). Model fitting, estimation and revision: After the model was constructed, the maximum likelihood method was used for parameter estimation. The estimation of the structural equation model mainly included checking whether the solution of the model was appropriate and the consistency of the parameters with the predefined model relationship, and then checking the fit indices, including absolute fit indices such as degree of freedom for chi square test (χ^2/df , judgment criterion < 3), root mean square error of approximation (RMSEA, judgment criterion < 0.08), standardized residual root mean square (SRMR, judgment criterion < 0.05); incremental fit indices, including adjusted goodness-of-fit index (AGFI, judgment criterion > 0.9), Tucker-Lewis index (TLI) and comparative fit index (CFI, judgment criterion > 0.9), to measure the goodness-of-fit of the model (G. W. Cheung & Rensvold, 2002; C. Y. Wang et al., 2010). If the goodness-of-fit of the model was poor, the standard errors, standardised residuals, modification indices (MI) and expected parameter change (EPC) in the model should be checked, and the model revised accordingly.

Finally, a simple slope analysis of the moderating effect of empathy was conducted (Fang et al., 2015). Doctor-patient mistrust and empathy were centralised, and empathy was grouped according to [mean $\pm$ 1 standard deviation (SD)] to explore the relationships among the research variables in different empathy groups.

3.5 Reliability and validity of scales

To ensure the reliability and accuracy of the findings, the study first examined the reliability and validity of the measures.

3.5.1 Exploratory factor analysis

Exploratory factor analysis (EFA) was used to review the factor loadings for each scale item as shown in Table 3.1 below. The factor loadings for the items of the Doctor-Patient Mistrust Scale ranged from 0.758 to 0.914; those for the items of the Surface Acting Scale ranged from 0.808 to 0.925; those for the items of the Deep Acting Scale ranged from 0.928 to 0.925; those for the items of the Empathy Scale ranged from 0.511 to 0.887; and those for the items of the Emotional Exhaustion Scale ranged from 0.836 to 0.913.

Table 3.1 The factor loadings of the items of each scale

Item	Doctor-patient mistrust	Surface acting	Deep acting	Empathy	Emotional exhaustion
Doctor-patient mistrust					
Item 1	0.758				
Item 2	0.914				
Item 3	0.910				
Item 4	0.898				
Surface acting					
Item 1		0.808			
Item 2		0.830			
Item 3		0.888			
Item 4		0.925			
Item 5		0.893			
Deep acting					
Item 1			0.928		
Item 2			0.925		
Empathy					
Item 1				0.718	
Item 2				0.800	
Item 3				0.511	
Item 4				0.783	
Item 5				0.876	
Item 6				0.887	
Item 7				0.859	
Item 8				0.804	
Item 9				0.820	
Item 10				0.678	
Item 11				0.816	
Emotional exhaustion					
Item 1					0.913
Item 2					0.898
Item 3					0.904
Item 4					0.913
Item 5					0.836

Item 3 of the Empathy Scale had a factor loading of only 0.511 and was therefore removed from the subsequent data analysis. The factor loadings for the remaining items of the Empathy Scale after the removal of Item 3 ranged from 0.681 to 0.888 as shown in Table 3.2 below.

Table 3.2 The factor loadings of the items of the Empathy Scale after removal of Item 3

Item	Factor loading
Item 1	0.721
Item 2	0.801
Item 4	0.781
Item 5	0.877
Item 6	0.888
Item 7	0.860
Item 8	0.805
Item 9	0.826
Item 10	0.681
Item 11	0.820

3.5.2 Reliability of scales

Reliability refers to the consistency of a measure. In this study, the reliability of the scales was measured through internal consistency. Internal consistency is reflected by Cronbach's α . It is generally accepted that when Cronbach's α is greater than 0.85, the results measured by the scale can not only diagnose, identify and interpret individuals, but also represent group characteristics or levels; when Cronbach's α falls between 0.70 and 0.85, the results measured can only be used for group comparison; when Cronbach's α is smaller than 0.70, the reliability of the results measured by the scale is considered poor and unreliable (Cortina, 1993; Taber, 2018). As shown in Table 4.3, the Cronbach's α values of the scales used in this study ranged from 0.841 to 0.936, indicating good internal consistency reliability.

Table 3.3 The internal consistency reliability of each scale

Scale	Cronbach's α
Doctor-patient mistrust	0.880
Surface acting	0.920
Deep acting	0.841
Empathy	0.936
Emotional exhaustion	0.936

3.5.3 Validity of scales

This study tested the construct validity of the scales using confirmatory factor analysis (CFA). Validity is the degree to which the results obtained by a measure are close to the true situation. CFA can be seen as a measurement model of a structural equation model and is essentially an evaluation of the measurement model of a structural equation model with the same parameter estimation methods and fitting ideas as the structural model.

(1) Doctor-patient mistrust

A single-factor measurement model of doctor-patient mistrust was constructed, with factor loadings ranging from 0.64 to 0.90.

(2) Emotional labour

A first-order two-factor measurement model of emotional labour was constructed, with factor loadings ranging from 0.73 to 0.94.

(3) Empathy

A single-factor measurement model of empathy was constructed, with factor loadings ranging from 0.59 to 0.91.

(4) Emotional exhaustion

A single-factor measurement model of emotional exhaustion was constructed. After modification according to the modification indices, the factor loadings ranged from 0.79 to 0.90.

The goodness-of-fit of the measurement models for each scale is presented in Table 3.4. The goodness-of-fit indices met the criteria, indicating that the models had high goodness-of-fit and that the scales had good construct validity.

Table 3.4 Goodness-of-fit indices of the measurement model of each scale

Model	χ^2/df	<i>P</i>	AGFI	RMSEA	SRMR	TLI	CFI
Criterion	<3	>0.05	>0.9	<0.08	<0.05	>0.9	>0.9
Doctor-patient mistrust	1.936	0.248	0.980	0.034	0.010	0.997	0.999
Emotional labour	1.389	0.149	0.968	0.051	0.026	0.995	0.996
Empathy	2.970	<0.001	0.902	0.076	0.027	0.967	0.980
Emotional exhaustion	2.811	0.024	0.953	0.073	0.012	0.988	0.995

Note: AGFI: adjusted goodness of fit index; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual; TLI: Tucker-Lewis index; CFI: comparative fit index.

3.5.4 common method bias test

To control common method bias, this study used Harman's single-factor test for common method bias (Harman, 1967). EFA was conducted on the scores of all scale items to examine the results of unrotated factor structure. The presence of common method bias was judged if only one common factor was extracted or if the first common factor had a large variance contribution (more than 40%). The analysis results showed that EFA extracted five common factors with a total variance explained of 73.91%. The eigenvalue of the unrotated first common factor was 8.39, explaining 32.26% of variance, which did not account for 40% of the total variance explained. See Table 3.5 below for details.

Table 3.5 Harman's single factor test

Factor	Initial eigenvalues	% of variance	Cumulative %
1	8.39	32.26	32.26
2	4.72	18.15	50.41
3	2.64	10.14	60.54
4	2.09	8.03	68.58
5	1.39	5.33	73.91
6	0.91	3.52	77.42
7	0.61	2.36	79.78
8	0.53	2.04	81.82
9	0.51	1.95	83.77
10	0.47	1.82	85.59
11	0.42	1.62	87.21
12	0.38	1.47	88.68
13	0.34	1.30	89.98
14	0.31	1.18	91.15
15	0.29	1.13	92.29
16	0.25	0.96	93.24
17	0.23	0.88	94.13
18	0.22	0.86	94.98
19	0.22	0.84	95.82
20	0.19	0.73	96.56
21	0.17	0.66	97.22
22	0.16	0.63	97.84
23	0.15	0.58	98.43
24	0.15	0.56	98.99
25	0.14	0.54	99.53
26	0.12	0.47	100.00

For the five measures of doctor-patient mistrust, surface acting, deep acting, empathy and burnout, one-, two-, three-, four- and five-factor models were constructed using SEM to test for common method bias through a comparison of the goodness of fit of all the models.

The two-factor models included Two-factor Model 1: doctor-patient mistrust, surface acting + deep acting + empathy + burnout; Two-factor Model 2: surface acting, doctor-patient mistrust + deep acting + empathy + burnout; Two-factor Model 3: deep acting, doctor-patient mistrust + surface acting + empathy + burnout; Two-factor Model 4: empathy, doctor-patient mistrust + surface acting + deep acting + burnout; and Two-factor Model 5: burnout, doctor-patient mistrust + surface acting + deep acting + empathy.

The three-factor models included Three-factor Model 1: doctor-patient mistrust + surface acting, deep acting + empathy, and burnout; Three-factor Model 2: doctor-patient mistrust + deep acting, surface acting + empathy, and burnout; Three-factor Model 3: doctor-patient mistrust + empathy, surface acting + deep acting, and burnout; Three-factor Model 4: doctor-patient mistrust, surface acting + deep acting, and empathy + burnout; Three-factor Model 5: doctor-patient mistrust, surface acting + empathy, and deep acting + burnout; Three-factor Model 6: doctor-patient mistrust, surface acting + burnout, and deep acting + empathy.

The four-factor models included Four-factor Model 1: doctor-patient mistrust + surface acting, deep acting, empathy, and burnout; Four-factor Model 2: doctor-patient mistrust + deep acting, surface acting, empathy, and burnout; Four-factor Model 3: doctor-patient mistrust + empathy, surface acting, deep acting, and burnout; Four-factor Model 4: doctor-patient mistrust, surface acting + deep acting, empathy, and burnout; Four-factor Model 5: doctor-patient mistrust, surface acting + empathy, deep acting, and burnout; and Four-factor Model 6: doctor-patient mistrust, surface acting, deep acting + empathy, and burnout.

The model fit indices of each model are presented in Table 3.6. The goodness-of-fit of the single-factor model was significantly worse compared to the two-factor, three-factor, four-factor and five-factor models. Besides, as the number of factors in the model increased, the goodness of fit of the model gradually improved, with the five-factor model having the best goodness of fit ($\chi^2/\text{df} = 2.514$, AGFI = 0.828, RMSEA = 0.067, SRMR = 0.045, TLI = 0.928, CFI = 0.936). This result indicated that there was no significant common method bias in the collected data for this study.

Table 3.6 A comparison of the fit indices between the single-factor model and the multi-factor models

Model	χ^2/df	<i>P</i>	AGFI	RMSEA	SRMR	TLI	CFI
Criterion	<3	>0.05	>0.9	<0.08	<0.05	>0.9	>0.9
Single-factor	14.626	< 0.001	0.315	0.201	0.200	0.354	0.406
Two-factor 1	12.377	< 0.001	0.367	0.183	0.192	0.461	0.505
Two-factor 2	10.515	< 0.001	0.440	0.168	0.167	0.549	0.586
Two-factor 3	13.871	< 0.001	0.322	0.195	0.196	0.390	0.441
Two-factor 4	10.180	< 0.001	0.453	0.165	0.173	0.565	0.601
Two-factor 5	10.057	< 0.001	0.453	0.164	0.163	0.571	0.606
Three-factor 1	6.479	< 0.001	0.617	0.127	0.150	0.740	0.763
Three-factor 2	7.702	< 0.001	0.535	0.141	0.149	0.682	0.711
Three-factor 3	5.874	< 0.001	0.648	0.120	0.111	0.769	0.790
Three-factor 4	8.256	< 0.001	0.532	0.147	0.160	0.656	0.687
Three-factor 5	7.808	< 0.001	0.537	0.142	0.155	0.677	0.706
Three-factor 6	7.219	< 0.001	0.562	0.136	0.119	0.705	0.731
Four-factor 1	5.690	< 0.001	0.641	0.118	0.144	0.778	0.800
Four-factor 2	3.382	< 0.001	0.789	0.084	0.068	0.887	0.898
Four-factor 3	5.012	< 0.001	0.674	0.109	0.092	0.810	0.829
Four-factor 4	3.448	< 0.001	0.785	0.085	0.079	0.844	0.895
Four-factor 5	6.930	< 0.001	0.557	0.132	0.143	0.719	0.747
Four-factor 6	0.391	< 0.001	0.789	0.084	0.065	0.887	0.898
Five-factor	2.514	< 0.001	0.828	0.067	0.045	0.928	0.936

Note: AGFI: adjusted goodness of fit index; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual; TLI: Tucker-Lewis index; CFI: comparative fit index.

Chapter 4: Results

This chapter reports the results obtained from the analyses methods mentioned in Chapter 3, including descriptive statistics, correlation analysis and variance analysis, and presents hypotheses testing results.

4.1 Descriptive statistics of the sample

A total of 358 online self-reported questionnaires were recovered. According to the quality control criteria for completion time (those completed in less than two minutes or with more than 30 minutes were regarded as invalid questionnaires), nine questionnaires completed with more than 30 minutes were eliminated; ten questionnaires with key demographic and work-related information missing were also eliminated. Therefore, 339 valid questionnaires were recovered, representing a valid recovery rate of 94.7%.

The demographic and work-related information of the respondents is shown in Table 4.1. In terms of demographic characteristics: the mean age was 37.91 years old ($SD = 10.25$); 128 respondents (37.8%) were in the 31-40 years old age group; 163 (48.1%) were male; 241 respondents (71.7%) were married; and 232 respondents (68.4%) had a master's degree or above. In terms of general work status: 255 respondents (75.2%) were ward physicians, and 288 (85.0%) full-time clinicians; 127 (37.5%) respondents had a senior professional or technical title; 201 (59.3%) respondents were from an internal medicine or surgical or clinical department; 150 (44.2%) respondents earned an average monthly income after tax of 3,001-6,000 yuan; and 211 respondents (62.2%) worked more than 40 hours per week.

Results of the analysis of the demographic and work-related variables of the respondents showed that the sample was reflective of the actual situation in the case hospital and was a good representation of the actual situation in local Grade A tertiary hospitals. Of all the respondents, 58.9% earned an average monthly income after tax of less than RMB 6,000, and 62.2% worked more than 40 hours per week. These two typical aspects of poor working conditions would have an impact on doctor-patient mistrust, surface acting, deep acting, empathy and burnout.

Table 4.1 Demographic characteristics and general work status of the respondents

Variable	<i>n</i>	%
Age (years old)		
≤30	96	28.3
31-40	128	37.8
41-50	65	19.2
>50	50	14.7
Gender		
Male	163	48.1
Female	176	51.9
Marital status		
Unmarried or other	98	28.9
Married	241	71.1
Education level		
Bachelor's degree or below	107	31.6
Master's degree or above	232	68.4
Position		
Ward physician	255	75.2
Director/team leader	84	24.8
Responsibility		
Full-time clinical work	288	85.0
Part-time management	51	15.0
Professional or technical title		
Junior title	110	32.4
Intermediate title	102	30.1
Senior title	127	37.5
Department		
Internal Medicine Department	100	29.5
Surgery Department	101	29.8
Other clinical departments	95	28.0
Auxiliary departments	43	12.7
Average monthly income (yuan)		
≤3000	50	14.7
3001-6000	150	44.2
6001-9000	108	31.9
>9000	31	9.1
Weekly working hours (hours)		
≤40	128	37.8
>40	211	62.2

4.2 Correlations

SPSS for Windows 21.0 was used to conduct Pearson correlation analysis to test the relationships between the variables. The results are presented in Table 4.2 below.

Table 4.2 Correlations between variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	1													
2. Gender	-.026	1												
3. Marital status	.530**	.051	1											
4. Education level	-.264**	-.006	-.013	1										
5. Position	.554**	-.241**	.351**	-.051	1									
6. Responsibilities	.277**	-.140**	.177**	.002	.523**	1								
7. Professional and technical title	.819**	-.027	.592**	-.043	.571**	.301**	1							
8. Department	-.081	.064	-.068	-.097	-.068	-.067	-.133*	1						
9. Average monthly income after tax	.370**	-.178**	.307**	-.054	.409**	.186**	.458**	-.020	1					
10. Weekly working hours	-.150**	-.208**	-.017	.182**	-.010	.040	-.079	-.144**	-.013	1				
11. Doctor-patient mistrust	.050	-.012	-.023	.068	.013	-.059	.051	-.080	.032	.024	1			
12. Surface acting	-.175**	-.166**	-.193**	.074	.020	.019	-.131*	-.015	.050	.131*	.243**	1		
13. Deep acting	-.137*	-.006	-.078	-.092	-.010	.008	-.107*	.135*	.008	.098	-.212**	.130*	1	
14. Empathy	-.059	-.087	-.027	.107*	-.021	.001	-.006	.028	-.025	.216**	-.443**	-.133*	.251**	1
15. Burnout	.082	-.011	.086	-.091	.121*	.078	.131*	.076	.080	.009	.291**	.330**	.063	-.188**

Note: * $p < .05$; ** $p < .01$

As seen in Table 4.2, age of the respondents was negatively related to both surface acting ($r = -0.175, p < .01$) and deep acting ($r = -0.137, p < .05$), while it did not have statistically significant relationships with doctor-patient mistrust, empathy and burnout. Gender was only significantly negatively associated with surface acting ($r = -0.166, p < .01$), while it did not have statistically significant relationships with doctor-patient mistrust, deep acting, empathy and burnout. Marital status was only significantly negatively related to surface acting ($r = -0.193, p < .01$), while it did not have statistically significant relationships with doctor-patient mistrust, deep acting, empathy and burnout. Education level was only significantly positively associated with empathy ($r = 0.107, p < .05$), while having no statistically significant relationships with doctor-patient mistrust, surface acting, deep acting and burnout. Doctor's position was only significantly positively related to burnout ($r = 0.121, p < .05$), while having no statistically significant relationships with doctor-patient mistrust, surface acting, deep acting and empathy.

No statistically significant relationships were found between physicians' responsibilities and doctor-patient mistrust, surface acting, deep acting, empathy and burnout. Professional and technical title was found to be negatively related to both surface acting ($r = -0.131, p < .05$) and deep acting ($r = -0.107, p < .05$), significantly positively related to burnout ($r = 0.131, p < .05$), and not statistically significantly related to doctor-patient mistrust or empathy. Doctors' department was positively associated with deep acting ($r = 0.135, p < .05$), while it did not have statistically significant relationships with doctor-patient mistrust, surface acting empathy and burnout. No statistically significant relationships were observed between average monthly income after tax and doctor-patient mistrust, surface acting, deep acting, empathy and burnout. Weekly working hours were positively related to surface acting ($r = 0.131, p < .05$) and empathy ($r = 0.216, p < .01$), while no statistically significant relationships were identified between doctor-patient mistrust, surface acting and burnout.

Doctor-patient mistrust was positively related to surface acting ($r = .243, p < .01$) and burnout ($r = .291, p < .01$), while it was negatively related to deep acting ($r = -.212, p < .01$) and empathy ($r = -.443, p < .01$). Surface acting was negatively associated with empathy ($r = -.133, p < 0.05$) and positively associated with burnout ($r = .330, p < .01$). Deep acting was positively related to empathy ($r = .251, p < .01$), whereas its relationship with burnout was not statistically significant. Empathy was negatively related to burnout ($r = -.188, p < .01$).

4.3 Variance Analysis

4.3.1 Between-group differences in doctor-patient mistrust

The mean score of doctor-patient mistrust of the sample was 1.97 points, and $SD = 0.73$. SPSS for Windows 21.0 was used to conduct *t*-test and one-way ANOVA to compare the differences in variables between groups. Specifically, *t*-tests were used to compare differences in the variables by gender, marital status, education level, position, responsibility and weekly working hours; ANOVA was used to compare differences in the variables by age, professional and technical title, department and average monthly income.

As shown in Table 4.3, among the demographic and work-related variables, statistically significant differences were only observed in the level of doctor-patient mistrust among doctors of different age groups ($F = 2.835, p = .038$). The Post-Hoc tests of ANOVA showed that doctors in the 41-50 years old age group experienced a higher level of doctor-patient mistrust (2.20 ± 0.71) than doctors in all other age groups ($p < .05$).

Table 4.3 Between-group differences in doctor-patient mistrust

Variable	Mean	S. D.	<i>F/t</i>	<i>P</i>
Age (years old)			2.835	.038
≤30	1.96	0.86		
31-40	1.88	0.67		
41-50	2.20	0.71		
>50	1.94	0.53		
Gender			0.217	.828
Male	1.98	0.74		
Female	1.97	0.72		
Marital status			0.357	.722
Unmarried or other	2.00	0.92		
Married	1.96	0.63		
Education level			1.244	.214
Bachelor's degree or below	1.90	0.62		
Master's degree or above	2.01	0.77		
Position			0.273	.785
Ward physician	1.97	0.76		
Director/team leader	1.99	0.61		
Responsibility			1.083	.280
Full-time clinical work	1.99	0.75		
Part-time management	1.87	0.59		
Professional or technical title			0.445	.641
Junior title	1.93	0.83		
Intermediate title	1.96	0.75		
Senior title	2.02	0.61		
Department			0.845	.470
Internal Medicine Department	2.03	0.64		
Surgery Department	2.02	0.81		
Other clinical departments	1.90	0.68		

Auxiliary departments	1.89	0.83		
Average monthly income (yuan)			1.144	.331
≤3000	2.03	0.93		
3001-6000	1.90	0.67		
6001-9000	2.06	0.73		
>9000	1.98	0.59		
Weekly working hours (hours)			1.224	.222
≤40	1.91	0.74		
>40	2.01	0.72		

Note: * $p < .05$; ** $p < .01$

4.3.2 Between-group differences in emotional labour

The mean score of surface acting strategy of the sample was 2.93 points, and $SD = 1.32$. As shown in Tables 4.4 and 4.5, among the demographic variables, age ($F = 4.544, p = .004$), gender ($t = 3.098, p = .002$) and marital status ($t = 3.608, p < .001$) had statistically significant effects on the level of surface acting among doctors. The Post-Hoc tests of ANOVA showed that the doctors aged no more than 30 years old engaged in higher levels of surface acting (3.27 ± 1.29) than doctors in all other age groups ($p < .05$). The t-tests showed that male doctors engaged in higher levels of surface acting (3.16 ± 1.36) than female doctors ($2.72 \pm 1.26, p = .002$); married people performed lower levels of surface acting (2.77 ± 1.30) than those who were unmarried or with other types of marital status ($3.33 \pm 1.29, p < .001$).

Among the work-related variables, statistically significant differences were observed on the level of surface acting among the doctors with different professional and technical titles ($F = 3.343, p = .036$), average monthly income ($F = 4.931, p = .002$) and weekly working hours ($t = 3.118, p = .002$). In contrast, there were no statistically significant between-group differences in deep acting by both demographic and work-related variables.

The Post-Hoc tests of ANOVA showed that the level of surface acting was higher among doctors with junior titles (3.10 ± 1.34) than among those with senior titles ($2.69 \pm 1.30, p < 0.05$); and higher among those earning no more than 3,000 yuan per month (3.28 ± 1.24) than among those earning 3,001-6,000 yuan per month ($2.64 \pm 1.31, p < 0.05$). Results of t-tests showed that doctors working more than 40 hours per week engaged in higher levels of surface acting (3.10 ± 1.30) than those working no more than 40 hours per week ($2.65 \pm 1.33, p = .002$).

Table 4.4 Between-group differences in surface acting

Variable	Mean	S. D.	<i>F/t</i>	<i>P</i>
Age (years old)			4.544	.004
≤30	3.27	1.29		
31-40	2.85	1.27		
41-50	2.96	1.30		
>50	2.45	1.40		
Gender			3.098	.002
Male	3.16	1.36		
Female	2.72	1.26		
Marital status			3.608	<.001
Unmarried or other	3.33	1.29		
Married	2.77	1.30		
Education level			1.363	.174
Bachelor's degree or below	2.79	1.42		
Master's degree or above	3.00	1.27		
Position			0.361	0.719
Ward physician	2.92	1.29		
Director/team leader	2.98	1.42		
Responsibility			0.358	.721
Full-time clinical work	2.92	1.33		
Part-time management	2.99	1.32		
Professional or technical title			3.343	.036
Junior title	3.10	1.34		
Intermediate title	3.04	1.30		
Senior title	2.69	1.30		
Department			2.496	.060
Internal Medicine Department	2.88	1.19		
Surgery Department	3.16	1.32		
Other clinical departments	2.67	1.42		
Auxiliary departments	3.08	1.34		
Average monthly income (yuan)			4.931	.002
≤3000	3.28	1.24		
3001-6000	2.64	1.31		
6001-9000	3.09	1.31		
>9000	3.25	1.33		
Weekly working hours (hours)			3.118	.002
≤40	2.65	1.33		
>40	3.10	1.30		

Note: * $p < .05$; ** $p < .01$

Table 4.5 Between-group differences in deep acting

Variable	Mean	S. D.	<i>F/t</i>	<i>P</i>
Age (years old)			2.171	.091
≤30	4.34	1.06		
31-40	4.07	1.25		
41-50	3.98	1.03		
>50	3.87	1.46		
Gender			0.106	.916
Male	4.11	1.18		
Female	4.10	1.22		
Marital status			1.437	.152
Unmarried or other	4.25	1.23		
Married	4.04	1.19		
Education level			1.703	.089
Bachelor's degree or below	4.27	1.25		
Master's degree or above	4.03	1.17		
Position			0.175	.861
Ward physician	4.11	1.23		
Director/team leader	4.08	1.10		
Responsibility			0.156	.876
Full-time clinical work	4.10	1.23		
Part-time management	4.13	1.03		
Professional or technical title			1.980	.140
Junior title	4.28	1.22		
Intermediate title	4.08	1.20		
Senior title	3.97	1.18		
Department			2.135	.096
Internal Medicine Department	3.88	1.22		
Surgery Department	4.10	1.24		
Other clinical departments	4.23	1.19		
Auxiliary departments	4.35	1.00		
Average monthly income (yuan)			0.065	.978
≤3000	4.04	1.35		
3001-6000	4.12	1.22		
6001-9000	4.11	1.12		
>9000	4.08	1.16		
Weekly working hours (hours)			1.749	.082
≤40	3.95	1.36		
>40	4.20	1.09		

Note: * $p < .05$; ** $p < .01$

4.3.3 Between-group differences in empathy

The mean score of empathy of the sample was 5.17 points, and $SD = 0.70$. As shown in Table 4.6, among the demographic and work-related variables, position ($t = 2.233$, $p = .026$) and professional and technical title ($F = 3.299$, $p = .041$) had statistically significant effects on the level of empathy among the doctors. Results of t-tests showed that directors/team leaders (5.31 ± 0.58) had higher levels of empathy than ward physicians (5.12 ± 0.73 , $p = .026$). The Post-Hoc tests of ANOVA showed that doctors with a junior title (3.10 ± 1.34) had higher levels of

empathy than those with a senior title (2.69 ± 1.30 , $p < .05$).

Table 4.6 Between-group differences in empathy

Variable	Mean	S. D.	<i>F/t</i>	<i>P</i>
Age (years old)			1.368	.253
≤ 30	5.07	0.78		
31-40	5.19	0.70		
41-50	5.16	0.66		
> 50	5.30	0.53		
Gender			0.209	.835
Male	5.18	0.68		
Female	5.16	0.71		
Marital status			1.596	.112
Unmarried or other	5.07	0.76		
Married	5.21	0.67		
Education level			1.671	.096
Bachelor's degree or below	5.26	0.66		
Master's degree or above	5.13	0.71		
Position			2.233	.026
Ward physician	5.12	0.73		
Director/team leader	5.31	0.58		
Responsibility			1.428	.154
Full-time clinical work	5.15	0.70		
Part-time management	5.30	0.64		
Professional or technical title			3.229	.041
Junior title	5.07	0.74		
Intermediate title	5.12	0.78		
Senior title	5.29	0.56		
Department			1.058	.367
Internal Medicine Department	5.08	0.68		
Surgery Department	5.22	0.66		
Other clinical departments	5.17	0.77		
Auxiliary departments	5.27	0.64		
Average monthly income (yuan)			2.161	.092
≤ 3000	4.96	0.82		
3001-6000	5.23	0.70		
6001-9000	5.15	0.65		
> 9000	5.28	0.55		
Weekly working hours (hours)			0.613	.540
≤ 40	5.20	0.70		
> 40	5.15	0.70		

Note: * $p < .05$; ** $p < .01$

4.3.4 Between-group differences in burnout (emotional exhaustion)

The mean score of burnout (emotional exhaustion) of the sample was 2.19 points, and $SD = 1.13$. As shown in Table 4.7, among the demographic characteristics, age ($F = 2.781$, $p = .041$) and education level ($t = 1.980$, $p = .048$) had statistically significant effects on the level of emotional exhaustion among the doctors. Among the work-related variables, only weekly working hours ($t = 4.319$, $p < .001$) had a statistically significant effect on the level of emotional

exhaustion among doctors.

Results of the Post-Hoc tests of ANOVA showed that doctors aged more than 50 years old experienced higher levels of emotional exhaustion (1.78 ± 0.89) than doctors in other age groups ($p < .05$). The t-test results showed that doctors with a bachelor's degree or below (2.01 ± 1.28) experienced lower levels of emotional exhaustion than those with a master's degree or above (2.27 ± 1.05 , $p = .048$); doctors who worked over 40 hours per week (2.38 ± 1.21) experienced higher levels of emotional exhaustion than those who worked no more than 40 hours per week (1.88 ± 0.92 , $p < .001$).

Table 4.7 Between-group differences in emotional exhaustion

Variable	Mean	S. D.	<i>F/t</i>	<i>P</i>
Age (years old)			2.781	.041
≤ 30	2.23	1.29		
31-40	2.22	1.07		
41-50	2.37	1.12		
> 50	1.78	0.89		
Gender			1.607	.109
Male	2.29	1.15		
Female	2.09	1.12		
Marital status			0.455	.616
Unmarried or other	2.24	1.33		
Married	2.17	1.05		
Education level			1.980	.048
Bachelor's degree or below	2.01	1.28		
Master's degree or above	2.27	1.05		
Position			0.378	.706
Ward physician	2.20	1.15		
Director/team leader	2.15	1.08		
Responsibility			0.027	.978
Full-time clinical work	2.19	1.15		
Part-time management	2.19	1.05		
Professional or technical title			0.174	.841
Junior title	2.17	1.18		
Intermediate title	2.24	1.21		
Senior title	2.16	1.04		
Department			1.031	.379
Internal Medicine Department	2.09	0.89		
Surgery Department	2.32	1.19		
Other clinical departments	2.10	1.11		
Auxiliary departments	2.30	1.50		
Average monthly income (yuan)			1.442	.230
≤ 3000	2.46	1.35		
3001-6000	2.08	1.00		
6001-9000	2.18	1.06		
> 9000	2.28	1.53		
Weekly working hours (hours)			4.319	$< .001$
≤ 40	1.88	0.92		
> 40	2.38	1.21		

Note: * $p < .05$; ** $p < .01$

4.4 Hypotheses testing

4.4.1 Relationships between doctor-patient mistrust, empathy and surface acting

SPSS for Windows 21.0 was used to conduct hierarchical multiple regression. In the hierarchical multiple regression model, demographic and work-related variables were placed in the first step, and doctor-patient mistrust, empathy and the interaction term between the two were placed in the second step. Based on the one-way ANOVA results, age, gender, marital status, education level, professional and technical title, average monthly income and weekly working hours were included as covariates in the linear regression model for this study. As suggested in Table 4.8, in Model 1, the associations between the scores of gender ($\beta = -.123, p = .023$), marital status ($\beta = -.150, p = .023$) and weekly working hours ($\beta = .114, p = .038$) and the scores of surface acting strategy were all statistically significant, and Model 1 had an explanatory power of 9.7% for surface acting. In Model 2, the effects of gender ($\beta = -.126, p = .017$), marital status ($\beta = -.133, p = .039$) and doctor-patient mistrust ($\beta = .237, p < .001$) on the scores of surface acting were all statistically significant. Therefore, H1.1 “Doctor-patient mistrust is positively related to surface acting” was supported. However, empathy and the interaction term of doctor-patient mistrust and empathy had no statistically significant effect on the scores of surface acting. Therefore, H5.1 “Empathy moderates the relationship between doctor-patient mistrust and surface acting, such that doctor-patient mistrust is less positively related to surface acting among doctors with high levels of empathy than those with lower levels of empathy” was not supported. Model 2 had an explanatory power of 15.5 % for surface acting.

Table 4.8 Results of hierarchical regression analysis of the factors influencing surface acting

Variable	Model 1		Model 2	
	β	P	β	P
Step 1: demographic variables				
Age	-0.148	.139	-0.179	.068
Gender	-0.123	.023	-0.126	.017
Marital status	-0.150	.023	-0.133	.039
Education level	0.015	.799	-0.007	.909
Professional and technical title	0.029	.784	0.033	.745
Average monthly income	0.113	.062	0.105	.075
Weekly working hours	0.114	.038	0.096	.072
F	5.105**			
R^2	0.097			
Step 2:				
Doctor-patient mistrust			0.237	<.001
Empathy			-0.025	.673
Interaction term			0.048	.369
F			6.000**	
R^2			0.155	

ΔR^2	-	0.057**
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Note: Gender: female vs. male; marital status: married vs. unmarried or other; education level: master's degree or above vs. bachelor's degree or below; weekly working hours: more than 40 hours vs. no more than 40 hours. Interactive term: the product of doctor-patient mistrust and empathy.
 * $p < .05$; ** $p < .01$

4.4.2 Relationships between doctor-patient mistrust, empathy and deep acting

SPSS for Windows 21.0 was used to conduct hierarchical multiple regression. In the hierarchical multiple regression model, demographic and work-related variables were placed in the first level, and doctor-patient mistrust, empathy and the interaction term between the two were placed in the second level. As suggested in Table 4.9, in Model 1, the associations between the scores of age ($\beta = -.246, p = .017$), education level ($\beta = -.177, p = .003$), weekly working hours ($\beta = .117, p = .037$) and the scores of deep acting strategy were all statistically significant, and Model 1 had an explanatory power of 5.5% for deep acting. In Model 2, the scores of age ($\beta = -.204, p = .042$), education level ($\beta = -.146, p = .012$), weekly working hours ($\beta = .127, p = .021$), doctor-patient mistrust ($\beta = -.135, p = .024$) and empathy ($\beta = -.157, p = .009$) all had statistically significant influences on the scores of deep acting. Therefore, H1.2 “Doctor-patient mistrust is positively related to deep acting” was not supported. This study showed a negatively relationship between doctor-patient mistrust and deep acting. However, the interaction term of doctor-patient mistrust and empathy ($\beta = -.002, p = .973$) had no statistically significant influences on the scores of deep acting. Therefore, H5.2 “Empathy moderates the relationship between doctor-patient mistrust and deep acting, such that doctor-patient mistrust is less positively related to deep acting among doctors with high levels of empathy than those with lower levels of empathy” was not supported.

Table 4.9 Results of hierarchical regression analysis of the factors influencing deep acting

Variable	Model 1		Model 2	
	β	P	β	P
Step 1: demographic variables				
Age	-0.246	0.017	-0.204	0.042
Gender	0.018	0.747	0.021	0.700
Marital status	0.004	0.950	-0.011	0.862
Education level	-0.177	0.003	-0.146	0.012
Professional and technical title	0.061	0.566	0.024	0.815
Average monthly income	0.058	0.343	0.058	0.331
Weekly working hours	0.117	0.037	0.127	0.021
F	2.765**			
R^2	0.055			
Step 2:				
Doctor-patient mistrust			-0.135	0.024
Empathy			0.157	0.009

Interaction term	-0.002	0.973
<i>F</i>	4.271**	
<i>R</i> ²	0.115	
ΔR^2	-	0.060**

Note: Gender: female vs. male; marital status: married vs. unmarried or other; education level: master's degree or above vs. bachelor's degree or below; weekly working hours: more than 40 hours vs. no more than 40 hours. Interactive term: the product of doctor-patient mistrust and empathy.

* $p < .05$; ** $p < .01$

4.4.3 Relationships between doctor-patient mistrust, surface acting, deep acting, empathy and burnout

SPSS for Windows 21.0 was used to conduct hierarchical multiple regression. In the hierarchical multiple regression model, demographic and work-related variables were placed in the first level; doctor-patient mistrust was placed in the second level; emotional labour strategies were placed in the third level; and the interaction term of doctor-patient mistrust and empathy was placed in the fourth level. If the association between doctor-patient mistrust and burnout disappeared or diminished after adding emotional labour strategies, then emotional labour strategies might mediate the said relationship.

As shown in Table 4.10, in Model 1, only the association between weekly working hours ($\beta = .191, p = .001$) and burnout was statistically significant, and Model 1 had an explanatory power of 5.8% for burnout. In Model 2, the positive associations between weekly working hours ($\beta = .176, p = .001$), doctor-patient mistrust ($\beta = 0.280, p < .001$) and burnout were statistically significant, and Model 2 has an explanatory power of 13.5% for burnout. The introduction of doctor-patient mistrust increased the explanatory power of the model for burnout by 7.7%. Therefore, H2 “Doctor-patient mistrust is positively related to burnout” was supported. In Model 3, the association between weekly working hours ($\beta = .142, p = .007$) and burnout was statistically significant; the positive association between doctor-patient mistrust and burnout was still statistically significant ($\beta = .238, p < .001$) but showed a decrease in the numerical value; the positive association between surface acting and burnout was statistically significant ($\beta = .245, p < .001$), but there was no statistically significant association between deep acting and burnout ($\beta = .075, p = .153$); and Model 3 had an explanatory power of 19.6% for burnout. After the introduction of surface acting and deep acting, the regression model's explanatory power for burnout increased by 6.1%. Therefore, H3.1 “Surface acting is positively related to burnout” was supported, while H3.2 “Deep acting is negatively related to burnout.” was not supported.

Subsequently, H4.2 “Deep acting mediates the relationship between doctor-patient mistrust

and burnout” was also not supported. Finally, in Model 4, weekly working hours ($\beta = .123, p = .018$), Doctor-patient mistrust ($\beta = .238, p < .001$), surface acting ($\beta = .232, p < .001$), empathy ($\beta = -.112, p = .048$) and the interaction term of doctor-patient mistrust and empathy ($\beta = .186, p < .001$) all had statistically significant influences on burnout, while deep acting had no statistically significant influence on burnout level. Therefore, empathy positively moderated the relationship between doctor-patient mistrust and burnout, such that doctor-patient mistrust is more positively related to burnout among doctors with high levels of empathy than those with lower levels of empathy. Thus, H5.3 “Empathy moderates the relationship between doctor-patient mistrust and burnout, such that doctor-patient mistrust is less positively related to burnout among doctors with high levels of empathy than those with lower levels of empathy” was not supported. The strength of the association between doctor-patient mistrust and burnout was reduced after surface acting and deep acting were included in the model. These results suggested that surface acting might partially mediate the relationship between doctor-patient mistrust and burnout, while deep acting did not play a mediating role in the said relationship. Thus, H4.1 “Surface acting mediates the relationship between doctor-patient mistrust and burnout” needed to be further tested.

Table 4.10 Results of hierarchical regression analysis of the factors influencing burnout (emotional exhaustion)

Variable	Model 1		Model 2		Model 3		Model 4	
	β	<i>P</i>	β	<i>P</i>	β	<i>P</i>	β	<i>P</i>
Step 1: demographic variables								
Age	-.093	.364	-.124	.208	-0.064	0.503	-0.084	.376
Gender	-0.064	.245	-0.067	0.210	-0.037	0.470	-0.043	.394
Marital status	-0.003	.968	0.022	0.738	0.054	0.388	0.039	.526
Education level	0.042	.477	0.018	0.748	0.032	0.571	0.028	.608
Professional and technical title	0.101	.342	0.099	0.334	0.088	0.376	0.117	.230
Average monthly income	-0.052	.394	-0.057	0.331	-0.089	0.123	-0.103	.069
Weekly working hours	0.191	.001	0.176	0.001	0.142	0.007	0.123	.018
<i>F</i>	2.888**							
<i>R</i> ²	0.058							
Step 2:								
Doctor-patient mistrust			0.280	<0.001	0.238	<0.001	0.238	<.001
<i>F</i>			6.424**					
<i>R</i> ²			0.135					
ΔR^2			0.077**					
Step 3:								
Surface acting					0.245	<0.001	0.232	<.001
Deep acting					0.075	0.153	0.089	.089
Empathy							-0.112	.048
<i>F</i>					7.981**			
<i>R</i> ²					0.196			
ΔR^2					0.061**			
Step 4:								
Interaction term							0.186	<.001
<i>F</i>							8.220**	
<i>R</i> ²							0.232	
ΔR^2							0.037**	

Note: Gender: female vs. male; marital status: married vs. unmarried or other; education level: master's degree or above vs. bachelor's degree or below; weekly working hours: more than 40 hours vs. no more than 40 hours. Interactive term: the product of doctor-patient mistrust and empathy.

p* < .05; *p* < .01

4.4.4 The mediating role of surface acting

Based on the hierarchical multiple regression results, asymptotic and resampling strategies were used to test the mediating role of surface acting in the relationship between doctor-patient mistrust and burnout, with parameter estimation based on a Bootstrapping sample size of 5,000. The results are presented in Table 4.11. A 95% confidence interval (CI) of the mediating role $a \times b$ not containing 0 was considered statistically significant, indicating that the mediating role was statistically significant (Hayes & Rockwood, 2017; Igartua & Hayes, 2021). a referred to the degree of association between the independent variable and the mediator, and b referred to the degree of association between the mediator and the dependent variable. The effects of age, gender, marital status, education level, professional and technical title, average monthly income and weekly working hours were controlled for in the analysis.

Table 4.11 The mediating role of surface acting in the relationship between doctor-patient mistrust and burnout

Mediator	c	a	b	c'	$a \times b$ (95% CI)
Surface acting	.280**	.236**	.257**	.220**	.061 (0.025, 0.107)

Note: c referred to the total effect of the independent variable on the dependent variable; a referred to the strength of association between the independent variable and the mediator; b represented the strength of association between the mediator and the dependent variable; c' represented the direct effect of the independent variable on the dependent variable.

* $p < .05$; ** $p < .01$

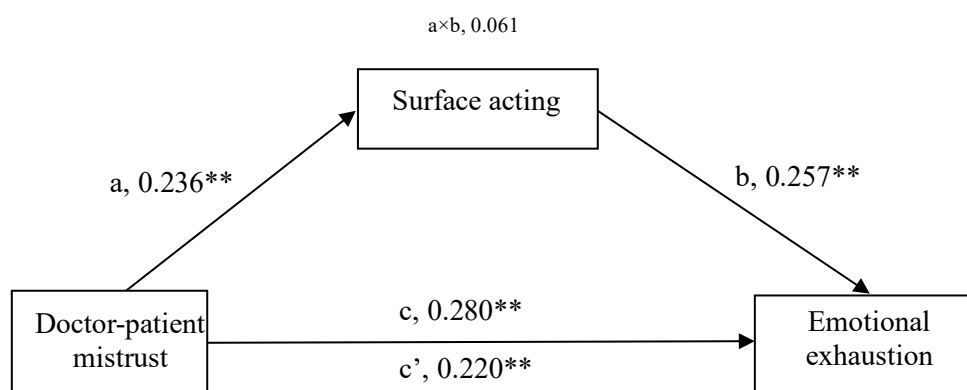


Figure 4.1 The mediating role of surface acting in the relationship between doctor-patient mistrust and burnout

Note: c referred to the total effect of the independent variable on the dependent variable; a referred to the strength of association between the independent variable and the mediator; b represented the strength of association between the mediator and the dependent variable; c' represented the direct effect of the independent variable on the dependent variable.

* $p < .05$; ** $p < .01$

As shown in Table 4.11 and Figure 4.1, the total effect of doctor-patient mistrust on burnout was statistically significant ($c = 0.280, p < .001$). The inclusion of surface acting strategy in the model resulted in a statistically significant positive association between doctor-patient mistrust and surface acting ($a = 0.236, p < .001$) and a statistically significant positive association between surface acting and burnout ($b = 0.257, p < .001$). Therefore, the mediating effect of surface acting on the relationship between doctor-patient mistrust and burnout was 0.061 with a 95% CI of (0.025, 0.107) not containing 0, indicating statistical significance. The mediating effect of surface acting accounted for 21.8% of the total effect of doctor-patient mistrust on burnout. Thus, H4.1 “Surface acting mediates the relationship between doctor-patient mistrust and burnout” was supported.

4.5 Testing of the moderated mediation model

4.5.1 Models comparison

Based on the research hypotheses, four different moderated mediation structural equation models were constructed to represent the relationships between doctor-patient mistrust, surface acting, empathy and emotional exhaustion (Marsh et al., 2004; Wen et al., 2010), and the best model was identified by comparing the goodness-of-fit indices of the models.

Model 1: Partial mediating role of surface acting, the moderating role of empathy in the relationship between doctor-patient mistrust and burnout. In this model, the effects of doctor-patient mistrust ($\beta = .276, p < .01$), surface acting ($\beta = .259, p < .01$), and doctor-patient mistrust $\times$ empathy ($\beta = .250, p < .01$) on burnout levels were all statistically significant, and the positive association between doctor-patient mistrust and surface acting was statistically significant ($\beta = .256, p < .01$). However, the association between empathy and burnout was not statistically

significant ($p > .05$).

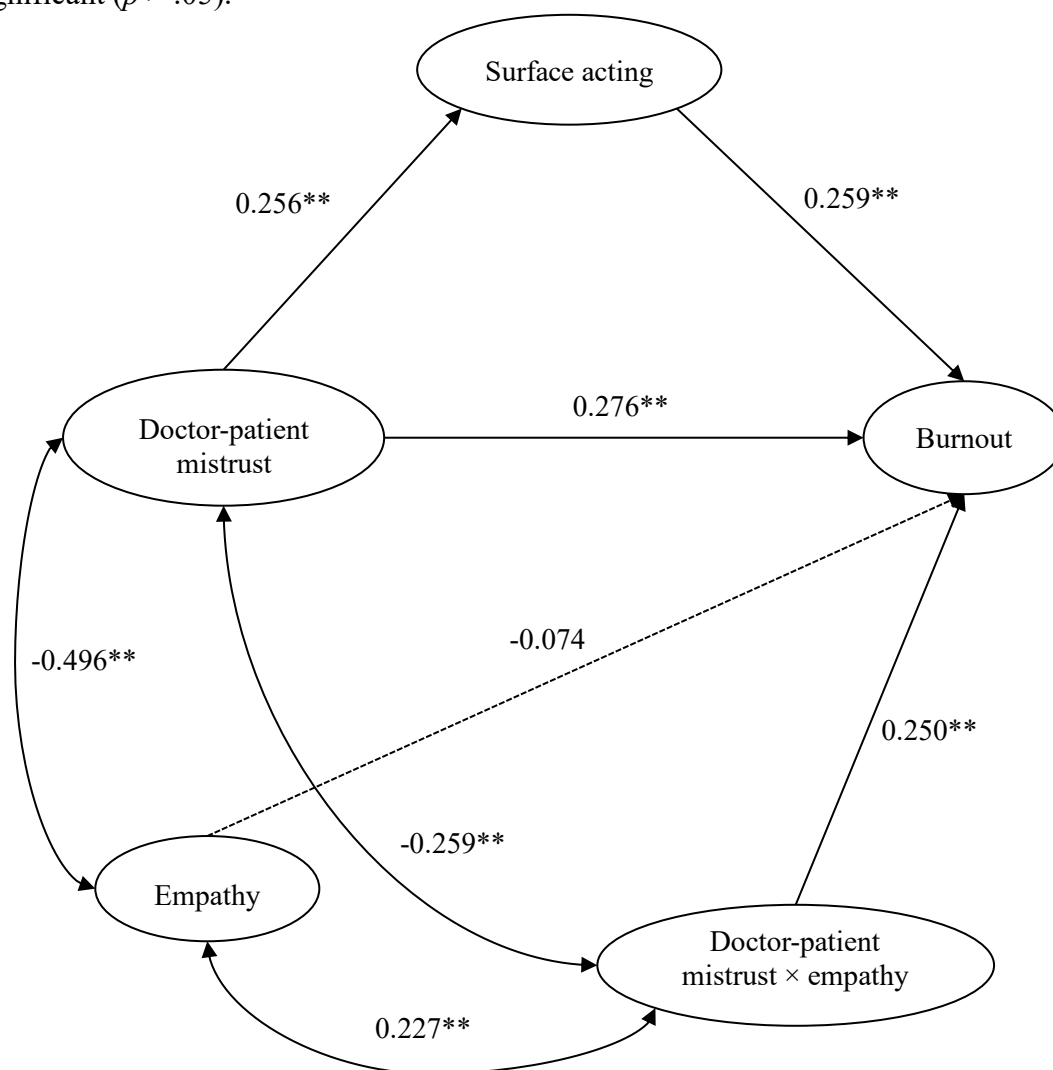


Figure 4.2 Moderated mediation model-1

Note: $p < .05$; $^{**}p < .01$

Model 2: The partial mediating role of surface acting, the moderating role of empathy in the relationship between doctor-patient mistrust, surface acting and doctor-patient mistrust, and burnout. In this model, the effects of doctor-patient mistrust ($\beta = .276, p < .01$), surface acting ($\beta = .256, p < .01$), and doctor-patient mistrust $\times$ empathy ($\beta = .248, p < .01$) on burnout levels were all statistically significant, and the positive association between doctor-patient mistrust and surface acting was statistically significant ($\beta = .281, p < .01$). However, both the association between empathy and surface acting and that between empathy and burnout were not statistically significant ($p > .05$), nor was the association between doctor-patient mistrust $\times$

empathy and surface acting ($p > .05$).

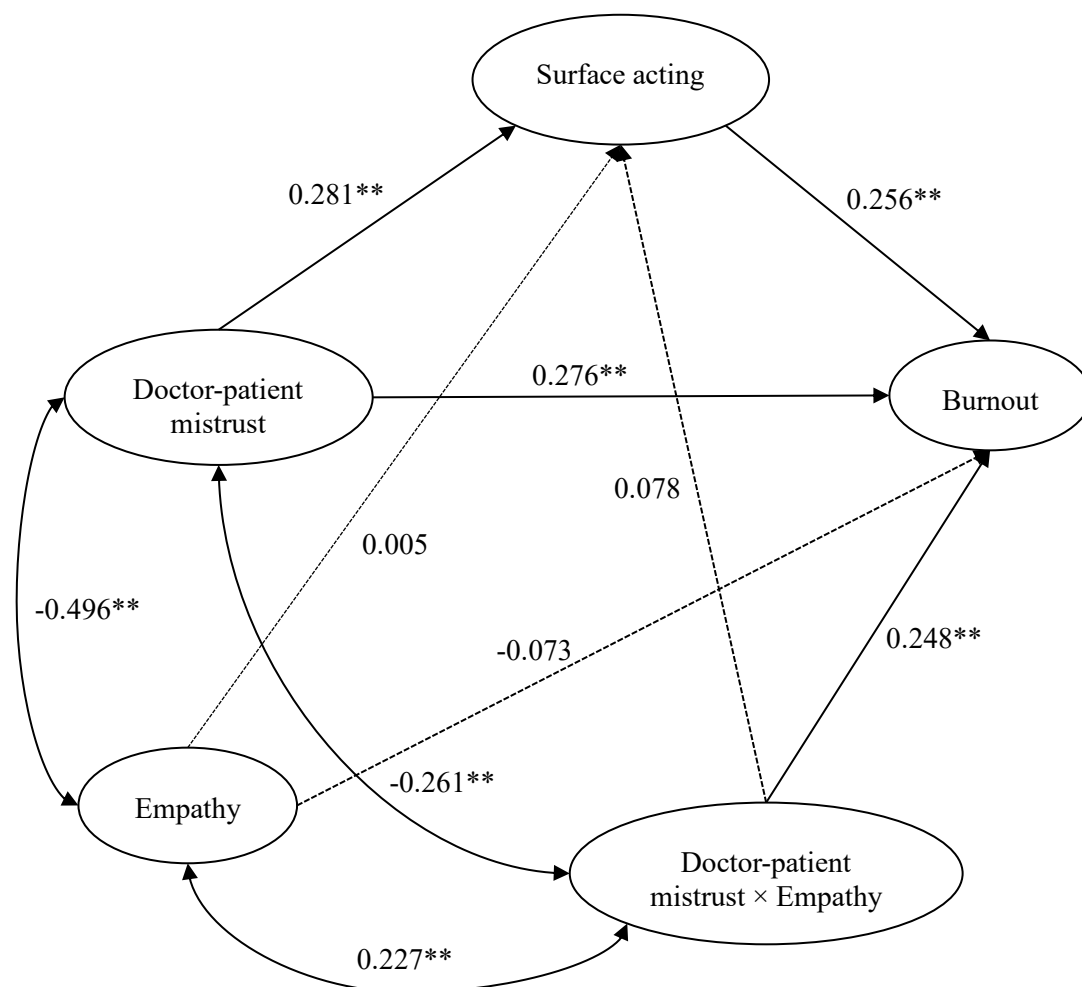


Figure 4.3 Moderated mediation model-2

Note: $p < .05$; $^{**}p < .01$

Model 3: The partial mediating role of surface acting, the moderating role of empathy in the relationship between doctor-patient mistrust and surface acting. In this model, the effects of doctor-patient mistrust ($\beta = .240$, $p < .01$) and surface acting ($\beta = .277$, $p < .01$) on burnout levels were statistically significant, and the positive association between doctor-patient mistrust and surface acting was statistically significant ($\beta = .281$, $p < .01$). However, the association between empathy and surface acting was not statistically significant ($p > .05$), nor was the

association between doctor-patient mistrust x empathy and surface acting ($p > .05$).

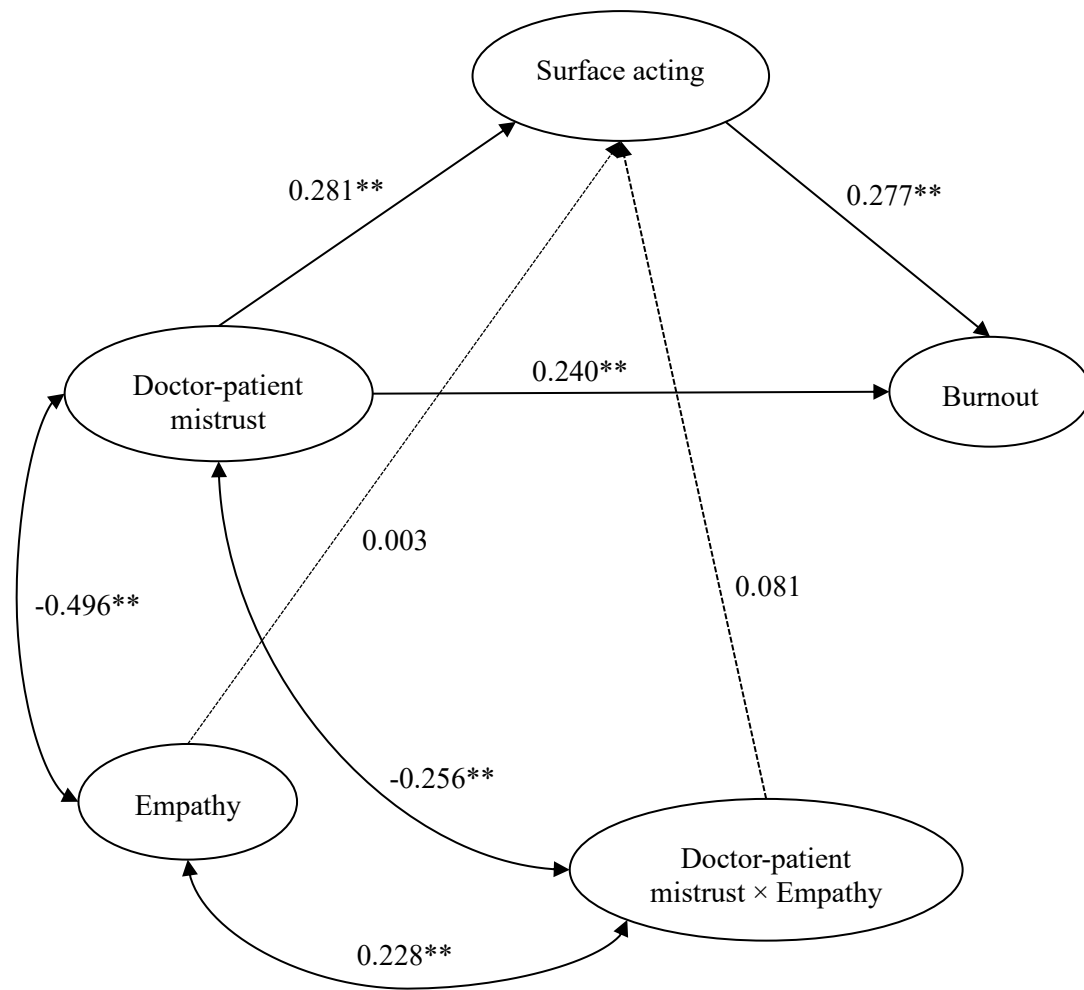


Figure 4.4 Moderated mediation model-3

Note: $p < .05$; $^{**}p < .01$

Model 4: The full mediating role of surface acting, the moderating role of empathy in the relationship between doctor-patient mistrust and emotional exhaustion. In this model, the effects of surface acting ($\beta = .318, p < .01$), empathy ($\beta = -.198, p < .01$) and doctor-patient mistrust $\times$ empathy ($\beta = .204, p < .01$) on burnout levels were all statistically significant, and the positive association between doctor-patient mistrust and surface acting was statistically

significant ($\beta = .260, p < .01$).

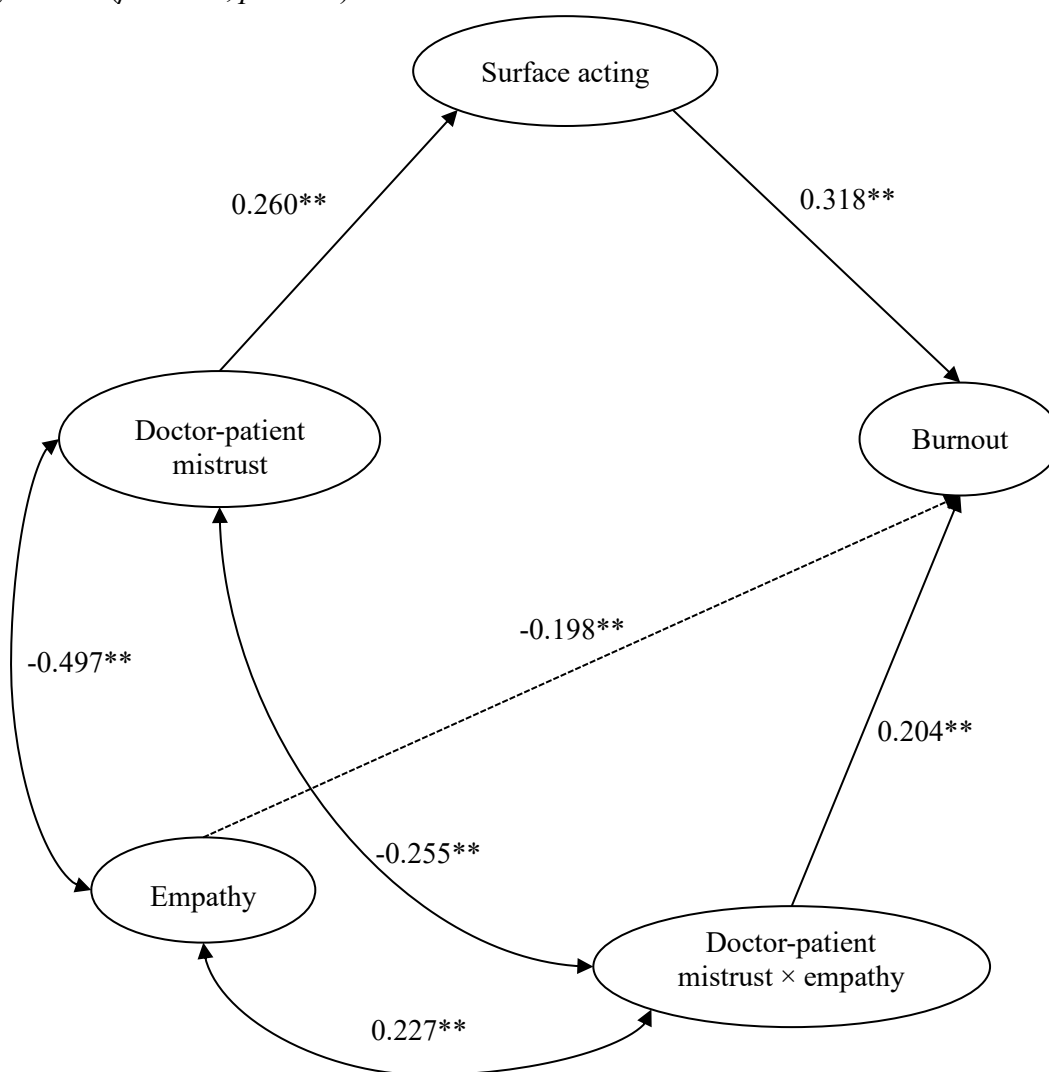


Figure 4.5 Moderated mediation model-4

Note: $p < .05$; $**p < .01$

The model fit results showed that all four models showed a good fit, and their goodness-of-fit indices were compared in Table 4.12. Model 2 was considered the most reasonable in this study based on theoretical derivation and research data. Model 2 validated the partial mediating role of surface acting in the relationship between doctor-patient mistrust and burnout as well as the moderating role of empathy in the relationship between doctor-patient mistrust and burnout. Thus, the moderated mediating roles of empathy and emotional labour in the relationship between doctor-patient mistrust and burnout was validated.

Table 4.12 A comparison of the goodness-of-fit among the moderated mediation models

Model	Goodness-of-fit indices					
	χ^2/df	AGFI	RMSEA	SRMR	TLI	CFI
1	2.567	0.817	0.068	0.048	0.926	0.933
2	2.578	0.816	0.068	0.047	0.925	0.933

3	2.625	0.813	0.069	0.058	0.923	0.931
4	2.615	0.814	0.069	0.057	0.924	0.931

Note: AGFI: adjusted goodness of fit index; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual; TLI: Tucker-Lewis index; CFI: comparative fit index.

4.5.2 The moderating role of empathy in the relationship between doctor-patient mistrust and burnout

Simple slope analysis was used to test the moderating role of empathy. As shown in Table 4.13 and Figure 4.6, the association between doctor-patient mistrust and burnout was stronger among doctors with high levels of empathy. In the groups with low, medium and high levels of empathy, the association between doctor-patient mistrust and burnout was $\beta = 0.075$ ($p = .243$), $\beta = .223$ ($p < .001$) and $\beta = .371$ ($p < .001$), respectively.

Table 4.13 The moderating role of empathy in the relationship between doctor-patient mistrust and burnout

Moderator	β	t	P	95% CI
Empathy				
Low (-1 SD)	0.075	1.169	.243	-0.051, 0.202
Medium (M)	0.223	3.909	<.001	0.111, 0.335
High (+1 SD)	0.371	4.910	<.001	0.222, 0.519

* $p < .05$; ** $p < .01$

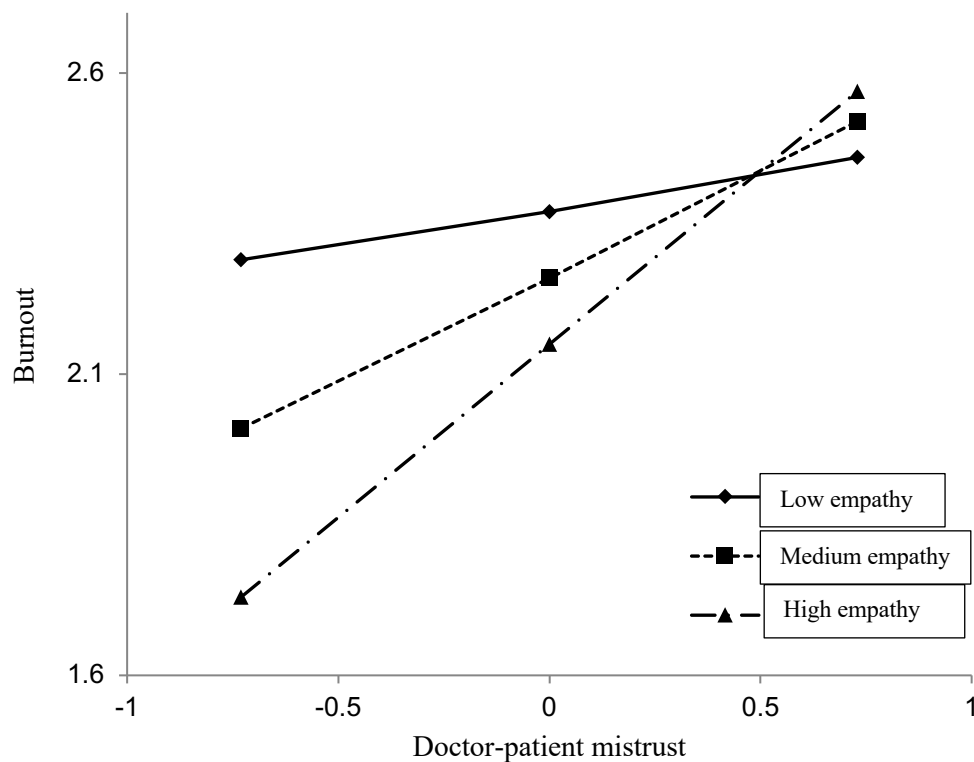


Figure 4.6 The mediating role of empathy in the relationship between doctor-patient mistrust and burnout

4.6 Summary of hypotheses testing results

Tables 4.14 presents the testing results of all the hypotheses put forward in this study. Specifically, the hypotheses that were supported included H1.1 "Doctor-patient mistrust is positively related to surface acting", H2 "Doctor-patient mistrust is positively related to burnout", H3.1 "Surface acting is positively related to burnout" and H4.1 "Surface acting mediates the relationship between doctor-patient mistrust and burnout". The remaining hypotheses were not supported. Nevertheless, this study revealed two important findings. Firstly, doctor-patient mistrust was negatively related to deep acting; secondly, empathy moderated the relationship between doctor-patient mistrust and burnout, such that doctor-patient mistrust is more positively related to burnout among doctors with high levels of empathy than those with lower levels of empathy.

Table 4.14 Hypotheses testing results

No.	Hypothesis	Testing result
H1.1	Doctor-patient mistrust is positively related to surface acting.	Supported
H1.2	Doctor-patient mistrust is positively related to deep acting.	Not supported
H2	Doctor-patient mistrust is positively related to burnout.	Supported
H3.1	Surface acting is positively related to burnout.	Supported
H3.2	Deep acting is negatively related to burnout.	Not supported
H4.1	Surface acting mediates the relationship between doctor-patient mistrust and burnout.	Supported
H4.2	Deep acting mediates the relationship between doctor-patient mistrust and burnout.	Not supported
H5.1	Empathy moderates the relationship between doctor-patient mistrust and surface acting, such that doctor-patient mistrust is less positively related to surface acting among doctors with high levels of empathy than those with lower levels of empathy.	Not supported
H5.2	Empathy moderates the relationship between doctor-patient mistrust and deep acting, such that doctor-patient mistrust is less positively related to deep acting among doctors with high levels of empathy than those with lower levels of empathy.	Not supported
H5.3	Empathy moderates the relationship between doctor-patient mistrust and burnout, such that doctor-patient mistrust is less positively related to burnout among doctors with high levels of empathy than those with lower levels of empathy.	Not supported

The tested research model is shown as Figure 4.7 below.

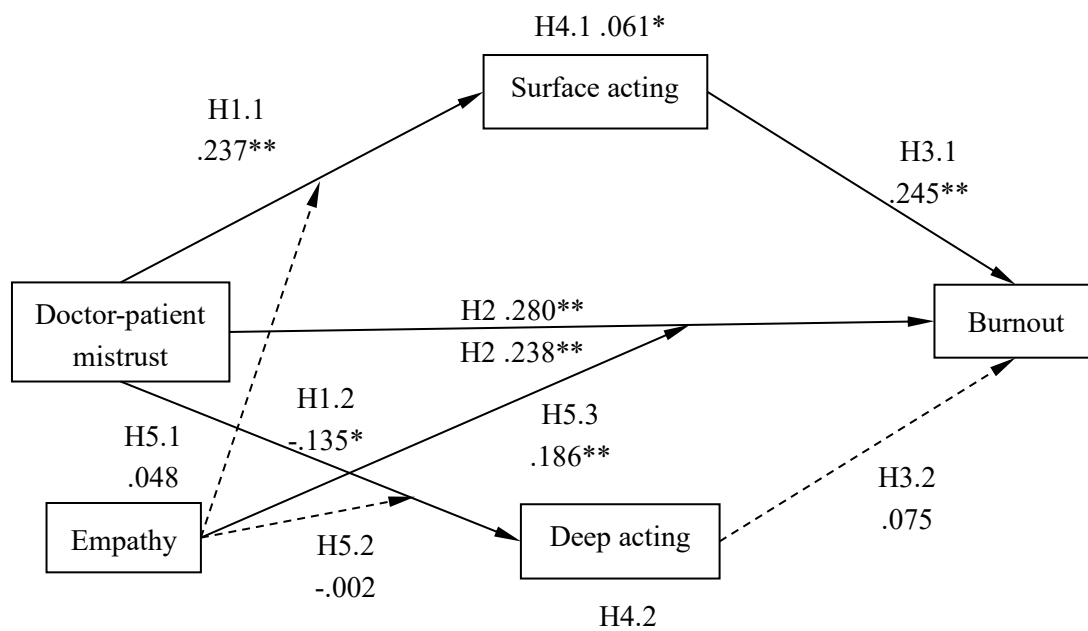


Figure 4.7 Testing results of the conceptual model

Chapter 5: Findings and Conclusions

This chapter presents the key findings of this study, compares them with the results of existing studies, and discusses possible reasons for the findings. Management insights are presented from the perspectives of various stakeholders, including policy makers/management authorities, hospitals and managers, doctors as well as patients and their families. Finally, conclusions are drawn, limitations pointed out, and suggestions for future research provided.

5.1 Findings

Based on the JD-R model and the COR theory, this study conducted a questionnaire survey among doctors in a Grade A tertiary hospital in Liaoning Province, China to analyse the roles of the two emotional labour strategies, namely surface acting and deep acting, and empathy in the relationship between doctor-patient mistrust and doctor burnout. The key findings are: Doctor-patient mistrust, as a work stressor or job demand that needs to be dealt with at work, significantly depletes doctors' emotional resources, contributing to the emotional labour strategy of surface acting, and the conflict between genuine feelings and displayed emotions inevitably lead to burnout (emotional exhaustion). Besides, doctor-patient mistrust is negatively related to deep acting, but deep acting is not related to burnout. Surface acting partially mediates the relationship between doctor-patient mistrust and burnout, whereas deep acting does not mediate the said relationship. In addition, doctors' empathy acts as a conditioning factor to moderate the relationship between doctor-patient mistrust and burnout. Specifically, doctor-patient mistrust is more positively related to burnout among doctors with high levels of empathy than those with low levels of empathy.

5.1.1 The status of doctor-patient mistrust, emotional labour, empathy and burnout

The case hospital of this study is The People's Hospital of Liaoning Province, alternatively known as Liaoning Cardiovascular Hospital, Liaoning Red Cross Hospital, and People's Hospital of China Medical University. It was a large Grade A tertiary hospital with the mission of "serving people's health wholeheartedly". The results of this study showed that the doctor-patient mistrust score for doctors was 1.97 ± 0.73 points, which was at a low level. This

indicated that the level of doctor-patient mistrust perceived by doctors was low. The doctor-patient mistrust mainly comes from the patient's perception of the examination, treatment and importance received from the doctor (W. L. Zeng et al., 2018). As the respondents of this study were from a Grade A tertiary public hospital, their professional competency, professional status and social reputation were at a relatively high level, and thus they were more likely to gain recognition and compliance from patients. Therefore, patients would trust their doctors' treatment plans and protocols.

The mean score of deep acting was higher than that of surface acting, indicating that doctors preferred to adopt the emotional labour strategy of deep acting to cope with emotional stress at work. Overall, the doctors in this study had a high level of empathy (5.17 ± 0.70 points), reflecting their ability to understand and respond appropriately to patients' emotions and feelings and to reduce their focus on themselves to increase their willingness to help and positive attitudes towards patients. In line with these results, the mean score of the doctors' burnout (emotional exhaustion) was 2.19 ± 1.13 points, which was also at a medium to low level. The level of doctors' burnout in this study was consistent with the findings of H. Wu et al. (2013), but lower than most studies of Chinese doctors (G. Y. Liu et al., 2018; Z. H. Wang et al., 2014; Ye et al., 2019). Levels of doctor-patient mistrust, emotional labour, empathy and burnout can be influenced by a variety of factors, including personal and general work characteristics, the contexts of different social periods and policies related to the health care system reform.

This study was conducted in the context of the normalised prevention and control of the COVID-19 pandemic when China adopted the "dynamic zero-case" policy for pandemic prevention and control. Specifically, any case detected shall be dealt with immediately to prevent the coronavirus from spreading locally or to other areas. It was required that each case detected shall be brought under control within a relatively short period of time. In this context, there may be some reduction in the workload of healthcare workers as a result of the sporadic and sudden outbreaks of the virus, which led to the adoption of strict prevention and control measures. In such cases, healthcare institutions might stop operation when necessary, leading to the increased complexity of patient visits and the reduced utilisation of outpatient and inpatient services. This context might have had some influence on the variables of this study, namely, doctor-patient mistrust, emotional labour strategies, empathy and burnout.

Approximately 60% of the respondents were young and middle-aged doctors aged between 31 and 50 years old. Clearly, they were the mainstay of clinical work and were often under a greater workload and prone to negative outcomes such as burnout. The percentages of male and

female in the sample were identical; over 70% of the respondents were married; and close to 70% of the respondents had a master's degree or above. These staffing characteristics were consistent with the general profile of tertiary public general hospitals. In addition, more than 75% of the respondents were ward physicians who were in charge of patient care and had direct contact and interaction with patients for longer periods of time, which often required them to perform more emotional labour. Only 15% of the respondents had part-time management responsibilities as they took on both clinical and managerial duties, which might act as a burden and produce a negative effect on them. The percentages of doctors with junior, intermediate and senior titles were more or less even, reflecting that the human resource development of the case hospital was reasonable. Approximately 60% of the respondents were from internal medicine or surgical departments, a proportion that was also in line with the general set-up of public general hospitals. Around 60% of the respondents had an average monthly income after tax of less than RMB 6,000. More than 60% of the respondents worked more than 40 hours per week. These two typical aspects of poor working conditions would have an impact on doctor-patient mistrust, surface acting, deep acting, empathy and burnout.

5.1.2 Findings of variance analysis

First, this study explored the effects of doctors' demographic and work-related variables on their levels of doctor-patient mistrust, emotional labour, empathy and burnout. Statistically significant differences in doctor-patient mistrust were only observed among the respondents of different age groups. The level of doctor-patient mistrust was relatively higher in the group of doctors aged 41-50 years old. This may be because the doctors in this age group were at the frontline of health care services and undertook important work tasks and a heavy workload. This negative occupational psychological environment increased their mistrust of patients (B. Guo et al., 2022). Besides, the self-defence mindset that gradually developed in the course of their work made them more susceptible to possible negative influences from patients (X. Y. Zhou et al., 2020).

Differences in doctors' surface acting levels were observed by demographic characteristics . Specifically, respondents who were no more than 30 years old, those who were male, and those who were single reported higher levels of surface acting. In terms of work-related variables, professional and technical title (junior title), statistically significant differences were reported in the level of surface acting among doctors with different average monthly income and weekly working hours (>40 hours). Right at the beginning when Hochschild (1983) put forward the

concept of emotional labour, she pointed out that age was one of the factors influencing emotional labour among employees. Older employees have more emotional memory, which makes it easier for them to achieve deeper emotional experiences and express emotions in a more “appropriate” manner. Therefore, they are more able to perform emotional labour than younger employees. This is also evidenced by the empirical study conducted by Kruml and Geddes (2000). In addition, Dahling and Perez (2010) found that the older an employee is, the more likely he/she is to use deep acting and automatic regulation strategies, and the less likely he/ she is to use surface acting. Gender differences have been identified in many studies on emotional labour. Wharton and Erickson (1993) argue that women perform more emotional labour than men, both at home and at work, and that women’s emotional management performance is better than that of men. The higher the technical title of a doctor, the more experienced he or she is at work. In general, doctors with more work experience also have more sophisticated emotional management skills and know how to handle interactions with patients and occasional unexpected events. In this study, none of the demographic and work-related variables had a significant effect on deep acting levels.

There were statistically significant differences in the empathy levels of doctors with different positions (director/team leader) and professional and technical titles (senior title). In a survey on the empathy of oncology surgeons, Hou et al. (2017) concluded that factors such as different titles and different forms of employment influenced the empathy of oncology surgeon. Higher positions and higher professional and technical titles are a concentrated reflection of doctors’ professional qualifications such as medical expertise and practice experience. Doctors with higher positions and higher professional and technical titles are better able to think from the patients’ perspectives, empathise with patients, and better identify and deal with their own and patients’ emotions.

Significant differences were observed in the levels of burnout by age (41-50 years old) and education level (master’ degree holders) among the selected demographic characteristics. Among work-related variables, statistically significant differences were observed were only revealed in the levels of burnout among doctors with different weekly working hours (>40 hours). The factors influencing burnout were also related to basic demographic variables such as age, gender, education level and marital status. In terms of gender, Y. M. Wei et al. (2019) conducted a questionnaire survey among doctors in tertiary hospitals and concluded that female doctors are more likely to suffer from burnout than male doctors. Age is also one of the important influencing factors of doctor burnout. Studies generally suggest a negative relationship between age and burnout, with older doctors experiencing lower levels of burnout

compared to younger doctors (Bazmi et al., 2019). Abarghouei et al. (2016) found that the level of burnout was higher among married people than unmarried people. Work stress is a concept in organizational behaviour and management that emphasises the individual's perception of his/her interaction with the situation. So, when studying work stress, the first variable that researchers focus on is work overload. Prolonged working hours, as one of the important indicators of work overload, have a significant effect on burnout. Gold and Roth (2013) identified work overload to be a significant predictor of the emotional exhaustion dimension of burnout. Similarly, this significant predictive effect is also present in the nursing profession (Coffey & Coleman, 2001).

5.1.3 The relationships between doctor-patient mistrust, empathy and emotional labour strategies

Results of the hierarchical regression analyses showed that after adjusting for age, gender, marital status, education level, professional and technical title, monthly income and weekly working hours, doctor-patient mistrust was positively related to surface acting, while empathy was not significantly related to surface acting. However, results of the hierarchical regression analyses showed that doctor-patient mistrust was negatively related to deep acting, while empathy was positively related to deep acting, and empathy did not moderate the relationship between doctor-patient mistrust and deep acting.

Doctor-patient mistrust may cause doctors to adopt the emotional labour strategy of surface acting, but reluctant to perform deep acting. Specifically, in healthcare settings, doctor-patient mistrust will lead to inconsistency between doctors' genuine feelings and emotional expressions, and this psychological conflict will also affect other attitudes, mentality and behaviours of doctors such as burnout, depression and anxiety and lead to such problems as job errors, absenteeism and turnover. Existing studies in China mostly explored the influences of emotional labour, emotional intelligence and work attitudes such as job satisfaction and burnout on DPR as the outcome variable and their influence mechanisms (Qian et al., 2019; Yuan et al., 2021) so as to explore the important factors for improving DPR from the perspective of doctors. However, doctor-patient mistrust is already prevalent in doctor-patient interaction and has produced a serious negative impact on the interests of both doctors and patients and the healthy development of healthcare undertakings. Therefore, this study set doctor-patient mistrust as an antecedent to explore its possible impact on doctors' emotional labour strategies. In doctors' actual professional settings, it is very difficult to adjust or improve many external factors such

as organizational arrangements, job demands and working conditions. Therefore, exploring the potential role of emotion regulation by tapping into doctors' internal coping resources has important theoretical and practical implications. Indeed, the finding of the negative association between doctor-patient mistrust and deep acting is alarming because it suggests that when doctors perceive mistrust from patients, they are less likely to perform deep acting, but more likely to engage in surface acting, which may further worsen the doctor-patient relationship and increase mistrust. In fact, the finding of a negative relationship between doctor-patient mistrust and deep acting is shocking because it suggests that when doctors perceive mistrust from patients, they are less likely to engage in deep acting and more likely to engage in surface acting, which may further worsen DPR and exacerbate doctor-patient mistrust.

Doctors' empathy facilitates their deep acting, while it does not have a significant effect on surface acting, which are understandable. As a professional interpersonal relationship, DPR is purposeful (serving patients) and time-bound (ending with the end of treatment). The degree of closeness and harmony between doctor and patient is relatively more influenced by the doctor's side. Empathy is undoubtedly conducive for the doctor to play a dominate role in DPR. In DPR, the doctor empathises with the patient by putting himself or herself in the patient's mental and emotional shoes while using his or her conversational skills to convey to the patient exactly what he or she feels about the patient's internal experience, so that the patient feels profoundly understood and moved, which facilitates the building of a relationship of mutual trust (Yao et al., 2012; S. H. Zeng & Shang, 2019). Engaging in prolonged and intense work under high job demands not only causes doctors to experience physical exhaustion, but also depletes their empathy. Prolonged and repeated perception of the patient's experience is bound to harm the doctor's inner feelings and willpower (Yin et al., 2016). In conclusion, the development of empathy is an essential part of the practice. In conclusion, the development of empathy is a socialisation process for doctors, and the priority given to developing an emotional connection with the patient is of great importance to their professional development. It can effectively meet the psychological needs of both the doctor and the patient, facilitate the unity of the doctor's feelings and expressions, reduce conflict between doctor and patient, and create a respectful and comfortable interpersonal environment in the workplace.

5.1.4 Relationships between doctor-patient mistrust, emotional labour, empathy and burnout

After adjusting for age, gender, marital status, education level, professional and technical title,

average monthly income and weekly working hours, doctor-patient mistrust, surface acting and burnout were positively related, while deep acting was not significantly related to burnout, and empathy was negatively related to burnout.

Although research on the relationship between doctor-patient mistrust and doctor burnout is limited (E. C. H. Huang et al., 2019), studies on the impact of tensions in DPR on work attitudes abound. When doctors are in a poor doctor-patient environment and feel that they cannot change the reality of the deteriorating DPR through their own efforts, their confidence will be severely undermined, and their sense of self-efficacy and work accomplishment will be reduced; when public opinions constantly attribute strained DPRs to hospitals and, causing healthcare workers to suffer a sense of loneliness and helplessness, the increasingly unfriendly general environment makes healthcare workers see no hope of improving the DPR; when laws and regulations constantly require healthcare workers to take responsibility for doctor-patient disputes, the policy orientation reduces healthcare workers' optimism in improving the DPR; the continuous stress stimulation brought to doctors by tensions in DPR undermines their resilience from problems and difficulties, resulting in burnout (Shao et al., 2019).

This study found that the two emotional labour strategies had different relationships with doctor burnout. Specifically, surface acting might be a cause of emotional exhaustion among doctors, while deep acting was not significantly related to emotional exhaustion. By faking emotions, doctors increase the discrepancy between their true emotions and their displayed emotions, which increases emotional loss (as resources), resulting in burnout, in accordance with COR theory. In this study, doctors' empathy was negatively related to burnout levels.

Due to the unique nature of the work of healthcare workers, who are exposed to life, death and illness on a daily basis, their level of empathy can have a huge impact on their work. Research has shown that physician empathy can improve job satisfaction, reduce work stress and emotional problems, and enhance professional fulfilment by correctly recognising and addressing the emotional needs required by both patients and doctors, satisfying the interests of both parties, and improving the DPR.

However, when doctors continue to empathise with patients for prolonged periods of time and in situations where positive coping resources are not replenished in a timely manner, empathy can trigger psychological distress and even lead to burnout (Y. Li et al., 2019). Healthcare workers' high attention to patients' emotions can lead to "empathy fatigue", which may occur when patients cannot be saved or spelled from harm, such as in the case of the loss of function, widowhood or a terminally ill elderly person. Empathy fatigue can cause healthcare workers to suffer guilt or pain, which may largely reduce their empathy in the future. Besides,

empathy-based guilt can lead to higher levels of empathy fatigue and burnout (Gleichgerrcht & Decety, 2014). According to Nielsen and Tulinus (2009), empathy fatigue refers to the “emotional exhaustion” of healthcare workers due to the frequent difficulties experienced by patients, which are related to the high level of attention and emotional listening required by patients. Healthcare workers may be overly concerned with patients’ feelings and therefore provide excessive empathic care, leading to their own symptoms of burnout, such as physical and mental fatigue and emotional exhaustion (Nielsen & Tulinus, 2009).

5.1.5 The mediating role of surface acting

In this study, surface acting partially mediated the relationship between doctor-patient mistrust and burnout, accounting for 21.8% of the total effect of doctor-patient mistrust on burnout, while deep acting did not have a mediating role in the said relationship. In response to doctor-patient mistrust, doctors will consume a lot of emotional resources and tend to adopt the emotional strategy of surface acting, and the conflict between inner feelings and emotional displays will inevitably lead to burnout. Besides, doctor-patient mistrust was negatively related to deep acting strategy, suggesting that doctors who perceived their patients’ mistrust of them were less likely to perform deep acting strategy. However, this study found no significant relationship between deep acting and burnout; therefore, deep acting did not mediate the relationship between doctor-patient mistrust and burnout.

Doctor-patient mistrust may cause doctors to adopt the emotional labour strategy of surface acting and perform deep acting strategy less frequently. Specifically, doctor-patient mistrust will lead to inconsistency in genuine feelings and emotional expressions during doctors’ consultations, and this psychological conflict will also affect doctors’ other psychological and behavioural problems, such as emotional problems like depression and anxiety and job attitude problems like burnout and satisfaction (De Cuyper et al., 2012; Prapanjaroensin et al., 2017). This study found that two emotional labour strategies were differently related to doctor burnout. Specifically, surface acting might be a cause of emotional exhaustion among doctors, while deep acting was not related to emotional exhaustion. Thus, surface acting partially mediated the relationship between doctor-patient mistrust and burnout. Doctors tend to adopt the emotional labour strategy of surface acting in response to doctor-patient mistrust, resulting in inconsistency between internal feelings and external emotional expressions, which further generates psychological conflict and leads to emotional exhaustion.

5.1.6 The moderating role of empathy

This study also evidenced the moderating role of empathy in the relationship between doctor-patient mistrust and burnout: doctor-patient mistrust was more positively related to burnout among doctors with high levels of empathy than those with low levels of empathy. Perceived patient mistrust increases the burnout of doctors when they put themselves in patients' shoes to experience their illness and illness-related distress and are highly empathetic to patients' psychological and emotional well-being. This finding is in line with the notion of "empathy fatigue" discussed above.

Empathy is seen as a double-edged sword whose dual role is differently related to burnout (Y. Meng & Yang, 2021; Russell & Brickell, 2015; Yu et al., 2016). Specifically, on the one hand, empathy promotes caring and compassion and increases healthcare workers' job satisfaction, thus preventing burnout; but on the other hand, it can also leave healthcare workers vulnerable and overly concerned about patients' feelings, thereby increasing their own negative emotions and leading to their burnout. Empathy can not only directly influence burnout (Wilkinson et al., 2017; Yuguero et al., 2017), but also moderate the relationships between other psychosocial factors and burnout (Khalaila, 2022; Koopman et al., 2021; Laverdière et al., 2019; M. X. Liu et al., 2021; Picard et al., 2016). The study by Khalaila (2022) showed that higher levels of empathy among older family caregivers were associated with higher levels of emotional exhaustion and depersonalisation; empathy moderated the relationship between caregiver burden and emotional exhaustion/depersonalisation (Khalaila, 2022). The findings by Laverdière et al. (2019) revealed various relationships between empathy and clinicians' quality of professional life and the moderating role of empathy in the impact of working conditions on quality of professional life. It is therefore necessary for healthcare workers to develop effective processes for assessing and regulating emotions when providing services to patients so that their empathy can prevent burnout. The main regulatory mechanism of empathy is dominated by the components of cognitive empathy, such as emotional understanding and emotion regulation, which are associated with perspective taking, self-regulation and executive attention. The components of cognitive empathy are important for expressing the psychological state of the self and others, which is necessary for doctors to make decisions in favour of patients. Empathy requires a degree of emotion regulation to manage and optimise the sense of distinction between self and others. The regulation of empathy by healthcare workers can help reduce personal distress, reduce symptoms of burnout such as emotional exhaustion, and provide appropriate treatment for patients. Moderate control of empathy inhibits the perception of pain and

unpleasant emotions in others, helps release cognitive resources to complete treatment, improves patient outcomes, and prevents symptoms of burnout such as empathy fatigue and emotional exhaustion (Khalaila, 2022; M. X. Liu et al., 2021; Picard et al., 2016). In addition, healthcare workers with higher levels of perspective taking skills experience higher levels of satisfaction upon successful treatment. Therefore, the challenge for healthcare workers is to devote emotional and cognitive resources to patients' pain experience in an appropriate and balanced manner, as too much or too little empathy can have a negative impact on their emotions and cognition, leading to burnout. In summary, the essence of doctor empathy is a process in which doctors resonate with their patients emotionally and then control and regulate their empathy. The degree to which doctors respond empathically leads to differences in the relationship between empathy and burnout.

In addition, after finding a partial mediating role of surface acting in the relationship between doctor-patient mistrust and burnout and a moderating role of empathy in the relationship between doctor-patient mistrust and burnout, this study constructed an integrated model to validate both the partial mediating role of surface acting and the moderating role of empathy, further reinforcing our findings. In explaining the relationship between doctor-patient mistrust and burnout, the partial mediating role of surface acting and the moderating role of empathy would have a reciprocal effect. However, empathy did not significantly moderate the effect of doctor-patient mistrust on surface acting, nor did it significantly moderate the relationship between surface acting and burnout. In other words, empathy did not moderate the partial mediating role of surface acting.

5.2 Managerial implications

Policy makers/management authorities, hospitals and managers, doctors as well as patients and their families are all stakeholders in addressing the negative effects of doctor-patient mistrust and reducing doctors' burnout. The general public and hospital managers should attach great importance to doctor-patient mistrust or the status of DPR, gain an in-depth understanding of doctors' emotional labour and burnout, and propose targeted countermeasures and a series of coping measures to manage DPRs and emotional labour. This will not only help doctors maintain their physical and mental health to cope with work challenges, but also help improve hospital services and enhance management, ultimately contributing to harmonious DPRs and doctors' physical and mental health.

5.2.1 Implications for policy makers/management authorities

This study reveals that doctor-patient mistrust has a significant effect on burnout among doctors and their implementation of emotional labour strategies. In response to doctor-patient mistrust, policy makers/management authorities should leverage on the top-level design of the health care system reform to improve the specific healthcare systems with reform; facilitate the supply-side reform of health care services and establish the health concept of giving equal importance to disease prevention and treatment; adhere to correct, scientific, objective and positive guidance of public opinion and prevent biased media reports from intensifying doctor-patient conflicts; increase protection of healthcare workers' legitimate rights and interests; strengthen the development of medical ethics and practices and strive to build harmonious DPRs; effectively include patient satisfaction a key indicator in the assessment of hospitals and doctors to enhance the credibility of services in the healthcare sector.

5.2.2 Implications for hospitals and managers

In response to doctor-patient mistrust, hospitals and managers should empower doctors, improve their work and interpersonal skills, and conduct education and training aimed at improving DPRs and strengthening doctor-patient trust. They should establish a doctor-patient communication and monitoring mechanism to ensure a two-way flow of information. Hospitals are advised to establish and improve a doctor-patient communication system to handle complaints from patients and their families in a timely manner, resolve doctor-patient disputes and doctor-patient conflicts, enhance patients' trust in hospitals and their understanding of doctors; and regularly collect opinions and suggestions from people from all walks of life on hospital services for timely improvement. The results of this study show that the level of doctor-patient mistrust is higher among doctors aged 41-50 years old. As the key members of frontline healthcare workers, doctors in this age group have a heavy workload, and many negative occupational psychological factors deepen their mistrust of patients. Hospitals and managers should focus on doctors in this age group, fully understand the problems they encounter in DPRs, and address them in a timely manner to improve doctor-patient trust.

In terms of emotional labour strategies, the results of this study suggest that doctors performing the emotional labour strategy of surface acting in doctor-patient interactions will experience burnout. Therefore, from the perspective of emotional labour strategies, hospitals and managers should create a safer work environment, guarantee the working conditions of healthcare workers, create a favourable atmosphere of healthcare services, increase respect for

doctors, provide regular training on emotional catharsis, encourage doctors to use deep acting strategy in their daily work, reduce the implementation of surface acting strategy, and improve doctors' ability to present their true selves, thereby reducing emotional exhaustion. In addition, doctors who are no more than 30 years old, those who are male and those who are single are more likely to use surface acting strategy. Hospitals and managers should focus on doctors with these characteristics and look for key factors to reduce their use of surface acting strategy. Among the work-related variables, junior title, average monthly income and weekly working hours influence doctors' implementation of surface acting strategy. Hospitals and managers should focus on the balanced relationship between doctors' work efforts and rewards, and develop reasonable promotion, reward and punishment systems to ensure that doctors can remain in a peaceful state of mind at work.

The results reveal that doctor empathy directly influences emotional labour strategies and burnout and moderates the relationship between doctor-patient mistrust and burnout. Therefore, hospitals and managers should first pay attention to the development of empathy among doctors: firstly, a comprehensive empathy cultivation system and assessment mechanism can be established to make the core concepts and application skills of empathy clear to doctors who receive training. Besides, attention should be paid to the education of different doctors on emotional management and the improvement of emotional guidance mechanisms. Doctors' inability to appropriately regulate their own negative emotions towards patients' illnesses will affect their expression of empathy towards patients. Hospitals should publicise and popularise the role of emotion management on medical behaviours in a variety of ways and offer regular training courses or practical seminars on emotion management theory for doctors; secondly, hardware facilities such as psychological consultation rooms and group activity rooms can be set up to provide strong support for channelling doctors' negative emotions. Thirdly, a sound system of psychological and emotional assessment for doctors should be established to detect their negative emotions in a timely manner. Patients' accumulated stresses due to health, finance, work and family may be triggered in the hospital environment, and the catharsis of these negative emotions mostly falls on doctors, which has a more serious impact on their emotions at work and professional enthusiasm. Therefore, hospitals should pay attention to the psychological well-being of doctors and regularly assess their psychological state and emotional changes while paying attention to the improvement of their medical expertise. This study also reveals that directors/team leaders and doctors with senior titles have higher levels of empathy. Therefore, hospitals and managers should give them more attention and help avoid empathy fatigue that may lead to adverse consequences.

5.2.3 Implications for doctors

In response to doctor-patient mistrust, doctors should actively participate in serving the public and patients, strive to improve the quality of healthcare services in their communication with patients, try to create a warm and safe environment, and provide attentive, patient, and high-quality services to win respect and recognition, and thus contribute to harmonious DPRs.

Regarding emotional labour strategies, doctors need to correctly understand and perceive their own strategies of emotional expression and actively regulate them. Surface acting can exacerbate doctors' burnout. Thus, correct measures should be taken to regulate emotions, such as confiding in others, psychological counselling and taking exercise. Besides, cognitive therapy and exercise therapy can be used to vent emotions. Doctors must firmly adhere to their professionalism and ideals, positively regulate their internal cognition, control their emotions, and reduce the occurrence of psychological problems. They should also change their internal emotional experience in a positive way, actively adjust their perception of emotional labour, reduce surface acting, and increase deep acting.

In terms of empathy, doctors should put themselves in patients' mental shoes to experience patients' pain and pain-related suffering, understand patients, empathise with patients' feelings and emotions, and form an emotional community with patients. Doctors need to focus on positioning and transferring their roles appropriately to communicate effectively with patients and improve their empathy.

Furthermore, doctors should actively engage in self-learning and training to improve their own emotional management skills and empathy in addition to actively participating in hospital education and training on enhancing emotional labour and empathy.

5.2.4 Implications for patients and their families

Patients and their families should show tolerance and understanding towards healthcare workers, understand that doctors are under a lot of pressure to deal with many patients every day, and communicate with them patiently and calmly. Patients and their families should also trust doctors and their treatment plans and follow medical advice, thus enhancing the doctor-patient trust perceived by doctors. In addition, patients and their families should, as far as possible, control their emotional expressions during consultations and reduce venting of emotions to doctors. Empathy during the consultation and treatment process is the empathy of both the doctor and the patient, not only from the doctor to the patient, but also from the patient to the doctor. Only by completing a two-way interactive empathy process can doctor-patient trust and

a harmonious DPR be achieved.

5.3 Conclusions

With a Grade A tertiary hospital in Liaoning Province, China as the study site, this study put forward research hypotheses based on the JD-R model and the COR theory, conducted a questionnaire survey among respondents, and made in-depth analyses of the roles of emotional labour and empathy in the relationship between doctor-patient mistrust and burnout. The following conclusions are drawn.

First, the level of doctor-patient mistrust perceived by doctors is low; compared to surface acting, doctors prefer to adopt the emotional labour strategy of deep acting to cope with emotional stress at work; doctors have a high level of empathy; and their burnout is at a moderate to low level.

Second, age has a significant effect on doctor-patient mistrust; age, gender, marital status, professional and technical title, average monthly income and weekly working hours all have a significant effect on doctors' adoption of surface acting strategy; demographic and work-related variables do not have a significant effect on the level of deep acting; Doctors with different positions as well as professional and technical titles differ significantly in the level of empathy; age, education level and weekly working hours all have a significant effect on the level of burnout among doctors.

Third, doctor-patient mistrust is positively related to surface acting and negatively related to deep acting; empathy is not significantly related to surface acting and is positively related to deep acting; empathy moderates neither the relationship between doctor-patient mistrust and surface acting nor the relationship between doctor-patient mistrust and deep acting. Doctor-patient mistrust may cause doctors to adopt the emotional labour strategy of surface acting and reduce engagement in deep acting. Specifically, doctor-patient mistrust will lead to inconsistency between doctors' genuine feelings and emotional expressions, resulting in emotional conflict.

Fourth, doctor-patient mistrust, surface acting and burnout are positively related to each other, while deep acting is not significantly related to burnout, and empathy is negatively related to burnout. Surface acting partially mediates the relationship between doctor-patient mistrust and burnout, while deep acting does not mediate the said relationship. To cope with doctor-patient mistrust, doctors will consume a lot of emotional resources and favour the emotional labour strategy of surface acting. The conflict between their inner feelings and emotional

expressions will inevitably lead to burnout.

Fifth, empathy moderates the relationship between doctor-patient mistrust and burnout, such that doctor-patient mistrust is more positively related to burnout among doctors with high levels of empathy than those with low levels of empathy. When doctors put themselves in patients' shoes during treatment, experience patients' illness and illness-related suffering, and reach a high level of psychological and emotional resonance with patients, their perceived mistrust from patients will increase their burnout.

5.4 Limitations

This study explored the roles of two emotional labour strategies, namely surface acting and deep acting, and empathy in the relationship between doctor-patient mistrust and doctor burnout taking a Grade A tertiary public hospital in Liaoning Province as the case. The findings have theoretical and practical implications. Nevertheless, this study also has its limitations that need to be overcome in future studies.

Firstly, this study only chose a Grade A tertiary public hospital in Liaoning Province as the case. The limited sampled geography may lead to biased findings and reduce the generalisability of the research conclusions.

Secondly, this study is a cross-sectional study based on a survey conducted in August 2021. Data were collected in a short period of time and only objectively reflected the relationships between doctor-patient mistrust, emotional labour, empathy and doctor burnout during this period. In most cases, it is difficult to determine the causal relationships among the variables. This is a very major limitation of cross-sectional studies.

Thirdly, this study was conducted in the context of the regular prevention and control of the COVID-19 pandemic. As a result of the sporadic and sudden outbreaks of the pandemic, the Chinese government adopted strict prevention and control measures. Hospitals saw a reduction in the utilisation of outpatient and inpatient services, and healthcare workers experienced a certain degree of reduced workload. This reality might have had some impact on doctor-patient mistrust, emotional labour strategies, empathy and burnout among doctors.

Finally, given the special circumstance of the COVID-19 pandemic prevention and control, convenience sampling was used, and the survey was conducted with electronic questionnaires sent to the designated departments. This has, to a large extent, resulted in a limited sample size.

5.5 Suggestions for future research

To overcome the above-mentioned limitations, future researchers may focus on the following aspects to enhance the completeness and maturity of research.

Larger samples from a wider range of geography could be chosen. For example, doctors from primary hospitals and specialist hospitals can be chosen as samples to facilitate further generalisation of the research findings.

In the future data collection phases, field research methods such as face-to-face survey can be used, with respondents being supervised throughout the process of questionnaire completion. This will ensure the authenticity and validity of the collected data; the centralised distribution and collection of questionnaires in a short period of time can be avoided to avoid the limitations of cross-sectional studies as far as possible. Follow-up surveys can be conducted to investigate the sample over a longer (one-to-two years) period of time. In-depth interviews with doctors, department heads and hospital managers can be conducted. A combination of qualitative research methods and quantitative questionnaires can be used to explain the interrelationships between variables in an integrated manner.

Finally, future research may further integrate and consider multiple variables and dimensions that can influence doctors' burnout. This can increase the explanatory power of the variables on burnout, make the research more holistic, and reflect greater theoretical significance and practical value.

Bibliography

- Abarghouei, M. R., Sorbi, M. H., Abarghouei, M., Bidaki, R., & Yazdanpoor, S. (2016). A study of job stress and burnout and related factors in the hospital personnel of Iran. *Electronic Physician*, 8(7), 2625.
- Acquati, A., Uberti, S., Aquino, A., Cerasetti, E., Castagna, C., Rovere-Querini, P., & Pisa, V. (2019). Do empathic osteopaths achieve better clinical results? An observational feasibility study. *International Journal of Osteopathic Medicine*, 32, 2-6.
- Adam, S., Mohos, A., Kalabay, L., & Torzsa, P. (2018). Potential correlates of burnout among general practitioners and residents in Hungary: The significant role of gender, age, dependant care and experience. *BMC Family Practice*, 19(1), 1-10.
- Ahmad, W., Ashraf, H., Talat, A., Khan, A. A., Baig, A. A., Zia, I., Sarfraz, Z., Sajid, H., Tahir, M., & Sadiq, U. (2018). Association of burnout with doctor-patient relationship and common stressors among postgraduate trainees and house officers in Lahore: A cross-sectional study. *PeerJ*, 6, e5519.
- Amofo, E., Hanbali, N., Patel, A., & Singh, P. (2015). What are the significant factors associated with burnout in doctors? *Occupational Medicine*, 65(2), 117-121.
- An, X. Q. (2008). 杰弗逊共情量表 (JSE-HP) 在护士中的应用 [Study on Chinese version of the Jefferson Scale of Empathy-Health Professionals (JES-HP) in nurses] [Master's thesis]. Shanxi Medical University.
- An, X. Q., Yang, H., Xu, J. P., Song, L. P., & Qiu, Y. F. (2008). 杰弗逊共情量表的编译及评价 [Compilation and evaluation of Jefferson empathy scale]. *Chinese Nursing Research*, (22), 2063-2064.
- Anderson, L. A., & Dedrick, R. F. (1990). Development of the Trust in Physician scale: A measure to assess interpersonal trust in patient-physician relationships. *Psychological Reports*, 67(3_suppl), 1091-1100.
- Anderson, M. B., & Iwanicki, E. F. (1984). Teacher motivation and its relationship to burnout. *Educational Administration Quarterly*, 20, 94-132.
- Ashforth, B. E., & Humphrey, R. H. (1993). Emotional labor in service roles: The influence of identity. *Academy of Management Review*, 18(1), 88-115.
- Austin, E. J., Dore, T. C. P., & O'Donovan, K. M. (2008). Associations of personality and emotional intelligence with display rule perceptions and emotional labour. *Personality and Individual Differences*, 44(3), 679-688.
- Barber, S. L., Borowitz, M., Bekedam, H., & Ma, J. (2014). The hospital of the future in China: China's reform of public hospitals and trends from industrialized countries. *Health Policy and Planning*, 29(3), 367-378.
- Bazmi, E., Alipour, A., Yasamy, M. T., Kheradmand, A., Salehpour, S., Khodakarim, S., & Soori, H. (2019). Job burnout and related factors among health sector employees. *Iranian Journal of Psychiatry*, 14(4), 309.
- Birkhäuser, J., Gaab, J., Kossowsky, J., Hasler, S., Krummenacher, P., Werner, C., & Gerger, H. (2017). Trust in the health care professional and health outcome: A meta-analysis. *PloS One*, 12(2), 1-13.
- Blanco Canseco, J. M., Valcárcel Sierra, C., Guerra Jiménez, M. D. C., Ortigosa Rodríguez, E., García López, F., Caballero Martínez, F., Cabello Ballesteros, L., & Monge Martín, D. (2020). Clinical empathy among family and community medicine residents and tutors. The

- view of physicians and patients. *Atención Primaria*, 52(3), 185-192.
- Bono, J. E., & Vey, M. A. (2007). Personality and emotional performance: Extraversion, neuroticism, and self-monitoring. *Journal of Occupational Health Psychology*, 12(2), 177.
- Boutou, A., Pitsiou, G., Sourla, E., & Kioumis, I. (2019). Burnout syndrome among emergency medicine physicians: An update on its prevalence and risk factors. *European Review for Medical and Pharmacological Sciences*, 23(20), 9058-9065.
- Bozionelos, N., & Kiamou, K. (2008). Emotion work in the Hellenic frontline services environment: How it relates to emotional exhaustion and work attitudes. *The International Journal of Human Resource Management*, 19(6), 1108-1130.
- Brotheridge, C. M., & Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of “people work”. *Journal of Vocational Behavior*, 60(1), 17-39.
- Brotheridge, C. M., & Lee, R. T. (2002). Testing a conservation of resources model of the dynamics of emotional labor. *Journal of Occupational Health Psychology*, 7(1), 57.
- Brotheridge, C. M., & Lee, R. T. (2003). Development and validation of the emotional labour scale. *Journal of Occupational and Organizational Psychology*, 76(3), 365-379.
- Brown, A. R., Walters, J. E., & Jones, A. E. (2019). Pathways to retention: Job satisfaction, burnout, & organizational commitment among social workers. *Journal of Evidence-Based Social Work*, 16(6), 577-594.
- Byrd, J., Knowles, H., Moore, S., Acker, V., Bell, S., Alanis, N., Zhou, Y., d'Etienne, J. P., Kline, J. A., & Wang, H. (2021). Synergistic effects of emergency physician empathy and burnout on patient satisfaction: A prospective observational study. *Emergency Medicine Journal*, 38(4), 290-296.
- Chai, M. Q., Tian, Q. Q., & Wang, X. J. (2020). 医患纠纷的网络报道-评论对受众对医信任倾向的影响与机制 [The impact and mechanism of online coverage-comment on doctor-patient dispute on audience's tendency to trust doctors]. *Journal of Psychological Science*, (06), 1411-1417.
- Chamsi-Pasha, H., & Albar, M. A. (2016). Doctor-patient relationship: Islamic perspective. *Saudi Medical Journal*, 37(2), 121.
- Chan, C. S. C. (2018). Mistrust of physicians in China: Society, institution, and interaction as root causes. *Developing World Bioethics*, 18(1), 16-25.
- Chen, J., Shi, Z. B., & Zhang, J. X. (2007). 共情概念的演变 [On evolvement of concept of empathy]. *Chinese Journal of Clinical Psychology*, (06), 664-667.
- Chen, J., Wang, X. H., Qian, Y., Xu, L. Z., Chen, W. H., Cheng, G. M., & Pan, W. W. (2021). 医患信任测评的研究进展、问题及本土化治理路径思考 [Research progress, problems and localization management approach of doctor-patient trust assessment]. *Chinese Hospital Management*, (01), 27-31.
- Chen, K. Y., Yang, C. M., Lien, C. H., Chiou, H. Y., Lin, M. R., Chang, H. R., & Chiu, W. T. (2013). Burnout, job satisfaction, and medical malpractice among physicians. *International Journal of Medical Sciences*, 10(11), 1471.
- Chen, S., Ma, J., & Zhu, J. F. (2014). 高职教师的职业倦怠与心理控制源、应对方式 [Relation of job burnout to locus of control and coping style in higher vocational college teachers]. *Chinese Mental Health Journal*, 28(04), 293-297.
- Chen, Y. L., Mu, Y. Q., Chen, L. M., & Li, S. Z. (2012). 综合医院医患关系影响因素的调查与研究 [Research and analysis of the influencing factors of the physician-patient relationships]. *Chongqing Medicine*, 41(3), 277-278.
- Chen, Z. G., Sun, H. W., Lam, W., Hu, Q., Huo, Y. Y., & Zhong, J. A. (2012). Chinese hotel employees in the smiling masks: Roles of job satisfaction, burnout, and supervisory support in relationships between emotional labor and performance. *The International Journal of Human Resource Management*, 23(4), 826-845.

- Cheung, F. Y. L., & Tang, C. S. K. (2009). The influence of emotional intelligence and affectivity on emotional labor strategies at work. *Journal of Individual Differences*, 30(2), 75-86.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9(2), 233-255.
- Chi, S. X., & Chen, C. (2018). 社会资本有利于城乡居民对医生的信任吗?——基于CGSS2012数据的实证研究 [Is social capital conducive to the trust of urban and rural residents in doctors?: An empirical study based on CGSS2012 data?]. *The Journal of Humanities*, (01), 112-121.
- Chi, W. Y., & Zhou, Z. F. (2018). 浙江省 20 所三级公立医院医生薪酬影响因素分析 [Analysis of factors influencing the salary of doctors in 20 tertiary public hospitals in Zhejiang Province]. *Chinese Journal of Hospital Administration*, 34(09), 762-764.
- China's National Development and Reform Commission. (2006). *Notice on printing and distributing the Opinions on Further Rectifying the Pricing of the Drug and Medical Services Market* ([2006] No. 912).
- China's National Health and Family Planning Commission, China's Ministry of Finance, China's State Commission Office of Public Sectors Reform, China's National Development and Reform Commission, China's Ministry of Human Resources and Social Security, China's State Administration of Traditional Chinese Medicine, & Health Care System Reform Office of China's State Council. (2017). *Notice on the comprehensive reform of public hospitals* ([2017] No. 22).
- Chou, H. Y., Hecker, R. O. B., & Martin, A. (2012). Predicting nurses' well-being from job demands and resources: A cross-sectional study of emotional labour. *Journal of Nursing Management*, 20(4), 502-511.
- Chu, H. L., & Murrmann, S. K. (2006). Development and validation of the hospitality emotional labor scale. *Tourism Management*, 27(6), 1181-1191.
- Coffey, M. (1999). Stress and burnout in forensic community mental health nurses: An investigation of its causes and effects. *Journal of Psychiatric and Mental Health Nursing*, 6(6), 433-443.
- Coffey, M., & Coleman, M. (2001). The relationship between support and stress in forensic community mental health nursing. *Journal of Advanced Nursing*, 34(3), 397-407.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied psychology*, 78(1), 98.
- Cui, Z. Q., & Yi, C. L. (2013). 护士人格特征与职业倦怠和离职倾向的关系 [The relationship between nurses' personality characteristics and burnout and turnover intention]. *Chinese Preventive Medicine*, 14(07), 546-547.
- Dahling, J. J., & Perez, L. A. (2010). Older worker, different actor? Linking age and emotional labor strategies. *Personality and Individual Differences*, 48(5), 574-578.
- Dai, H., Sun, X. L., Xia, Y. J., Zhang, D. X., & Liu, M. (2014). 患者对侵权责任法的认知及医患关系调查分析 [Patients' understanding of tort liability law and investigation and analysis of doctor-patient relationship]. *West China Medical Journal*, 29(09), 1765-1769.
- Danziger, N., Prkachin, K. M., & Willer, J. C. (2006). Is pain the price of empathy? The perception of others' pain in patients with congenital insensitivity to pain. *Brain*, 129(9), 2494-2507.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113.
- De Cuyper, N., Raeder, S., Van der Heijden, B. I. J. M., & Wittekind, A. (2012). The association between workers' employability and burnout in a reorganization context: Longitudinal evidence building upon the conservation of resources theory. *Journal of Occupational*

- Health Psychology*, 17(2), 162.
- De Waard, C. S., Poot, A. J., den Elzen, W. P. J., Wind, A. W., Caljouw, M. A. A., & Gussekloo, J. (2018). Perceived doctor-patient relationship and satisfaction with general practitioner care in older persons in residential homes. *Scandinavian Journal of Primary Health Care*, 36(2), 189-197.
- Delgado Bolton, R. C., San-Martín, M., & Vivanco, L. (2022). Role of empathy and lifelong learning abilities in physicians and nurses who work in direct contact with patients in adverse working conditions. *International Journal of Environmental Research and Public Health*, 19(5), 3012.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied psychology*, 86(3), 499.
- Demerouti, E., & Nachreiner, F. (1998). The specificity of burnout in human services: Fact or artifact. *Zeitschrift fur Arbeitswissenschaft*, 52(2), 82-89.
- Deng, K. S., Lin, W., Xie, X. Y., & Pan, S. Z. (2013). 南昌市三甲医院护士心理健康状况与职业倦怠水平调查 [Mental health status and job burnout of nurses in third-class a hospitals of Nanchang]. *China Journal of Health Psychology*, 21(07), 1027-1029.
- Deng, S. M., Yang, N. X., Li, S. Y., Wang, W., Yan, H., & Li, H. (2018). Doctors' job satisfaction and its relationships with doctor-patient relationship and work-family conflict in China: A structural equation modeling. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 55, 1-11.
- Diamond-Brown, L. (2016). The doctor-patient relationship as a toolkit for uncertain clinical decisions. *Social Science & Medicine*, 159, 108-115.
- Diefendorff, J. M., Croyle, M. H., & Gosserand, R. H. (2005). The dimensionality and antecedents of emotional labor strategies. *Journal of Vocational Behavior*, 66(2), 339-357.
- Dong, X. Q., Bergren, S., & Simon, M. A. (2017). Cross-sectional and longitudinal association between trust in physician and depressive symptoms among US community-dwelling Chinese older adults. *The Journals of Gerontology: Series A*, 72(suppl_1), S125-S130.
- Dyrbye, L. N., West, C. P., Hunderfund, A. L., Sinsky, C. A., Trockel, M., Tutty, M., Carlsare, L., Satele, D., & Shanafelt, T. (2020). Relationship between burnout, professional behaviors, and cost-conscious attitudes among US physicians. *Journal of General Internal Medicine*, 35(5), 1465-1476.
- Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin*, 101(1), 91.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied psychology*, 71(3), 500.
- English, T., & John, O. P. (2013). Understanding the social effects of emotion regulation: The mediating role of authenticity for individual differences in suppression. *Emotion*, 13(2), 314.
- Fan, X. W., & Wang, Y. (2018). 我国医疗服务供需矛盾及发展建议 [China's imbalance between supply of and demand for medical services and relevant suggestions]. *Macroeconomic Management*, (8), 40-46, 53.
- Fang, J., Liang, D. M., & Li, N. N. (2015). 基于多元回归的调节效应分析 [Moderation effect analyses based on multiple linear regression]. *Journal of Psychological Science*, (3), 715.
- Feng, S. S., & Liu, J. R. (2016). Study on causes and countermeasures of doctor-patient relationship based on contradiction theory. *Medicine & Philosophy (A)*, (03), 44-46.
- Flickinger, T. E., Saha, S., Roter, D., Korthuis, P. T., Sharp, V., Cohn, J., Eggly, S., Moore, R. D., & Beach, M. C. (2016). Clinician empathy is associated with differences in patient-clinician communication behaviors and higher medication self-efficacy in HIV care. *Patient Education and Counseling*, 99(2), 220-226.

- General Office of China's State Council. (2012). *Major arrangement on deepening health care system reform* ([2012] No. 20).
- General Office of China's State Council. (2015). *Guiding opinions on a comprehensive pilot reform in urban public hospitals* ([2015] No. 38).
- Gladstein, G. A. (1983). Understanding empathy: Integrating counseling, developmental, and social psychology perspectives. *Journal of Counseling Psychology*, 30(4), 467.
- Gleichgerricht, E., & Decety, J. (2014). The relationship between different facets of empathy, pain perception and compassion fatigue among physicians. *Frontiers in Behavioral Neuroscience*, 8, 243.
- Glomb, T. M., & Tews, M. J. (2004). Emotional labor: A conceptualization and scale development. *Journal of Vocational Behavior*, 64(1), 1-23.
- Gold, Y., & Roth, R. A. (2013). *Teachers managing stress & preventing burnout*. Routledge.
- Goodwin, R. E., Groth, M., & Frenkel, S. J. (2011). Relationships between emotional labor, job performance, and turnover. *Journal of Vocational Behavior*, 79(2), 538-548.
- Gosserand, R. H., & Diefendorff, J. M. (2005). Emotional display rules and emotional labor: The moderating role of commitment. *Journal of Applied psychology*, 90(6), 1256.
- Gou, L., Ma, S. Z., Wang, G. F., Wen, X. X., & Zhang, Y. X. (2021). Relationship between workplace ostracism and turnover intention among nurses: The sequential mediating effects of emotional labor and nurse-patient relationship. *Psychology, Health & Medicine*, 1-6.
- Grandey, A., Foo, S. C., Groth, M., & Goodwin, R. E. (2012). Free to be you and me: A climate of authenticity alleviates burnout from emotional labor. *Journal of Occupational Health Psychology*, 17(1), 1.
- Grandey, A. A. (2000). Emotional regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology*, 5(1), 95.
- Grandey, A. A. (2003). When "the show must go on": Surface acting and deep acting as determinants of emotional exhaustion and peer-rated service delivery. *Academy of Management Journal*, 46(1), 86-96.
- Grandey, A. A., & Melloy, R. C. (2017). The state of the heart: Emotional labor as emotion regulation reviewed and revised. *Journal of Occupational Health Psychology*, 22(3), 407.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271-299.
- Groth, M., Hennig-Thurau, T., & Walsh, G. (2009). Customer reactions to emotional labor: The roles of employee acting strategies and customer detection accuracy. *Academy of Management Journal*, 52(5), 958-974.
- Guo, B., Zhou, H. Y., Cao, N. W., Xu, X. R., Feng, X. Q., & Li, B. Z. (2022). 医生职业认同感与社会支持、医患关系及工作压力的关系分析 [Analysis on relationship between professional identity, social support, doctor-patient relationship and working stress among clinicians]. *Occupation and Health*, 38(02), 197-201.
- Guo, Y. P., Yang, C. J., & Xu, M. Z. (2015). 企业员工人格特质与工作倦怠的关系 [The relationship between personality and job burnout in white-collar employees]. *China Journal of Health Psychology*, 23(04), 567-570.
- Gupta, S., Brenner, A. T., Ratanawongsa, N., & Inadomi, J. M. (2014). Patient trust in physician influences colorectal cancer screening in low-income patients. *American Journal of Preventive Medicine*, 47(4), 417-423.
- Hagger, M. S. (2015). Conservation of resources theory and the 'strength' model of self-control: Conceptual overlap and commonalities. *Stress and Health*, 31(2), 89-94.
- Håkansson, J., & Montgomery, H. (2003). Empathy as an interpersonal phenomenon. *Journal of Social and Personal Relationships*, 20(3), 267-284.
- Hall, M. A., Camacho, F., Dugan, E., & Balkrishnan, R. (2002). Trust in the medical profession: Conceptual and measurement issues. *Health Services Research*, 37(5), 1419-1439.

- Hall, M. A., Dugan, E., Zheng, B. Y., & Mishra, A. K. (2001). Trust in physicians and medical institutions: What is it, can it be measured, and does it matter? *The Milbank Quarterly*, 79(4), 613-639.
- Hamidia, A., Amiri, P., Faramarzi, M., Yadollahpour, M. H., & Khafri, S. (2020). Predictors of physician's empathy: The role of spiritual well-being, dispositional perspectives, and psychological well-being. *Oman Medical Journal*, 35(3), e138.
- Han, G., Su, T., Liu, W., & Yuan, T. (2019). 三甲医院医务人员遭受工作场所暴力情况及评估 [Workplace violence against medical staff in tertiary grade A hospitals in Shanxi province: a cross-sectional analysis]. *Chinese Journal of Public Health*, (04), 459-464.
- Han, J. Y., Yin, H. B., Yang, X., & Wang, F. F. (2021). Does emotional labor matter for university teaching? Examining the antecedents and consequences of university teachers' emotional labor strategies. *Frontiers in Psychology*, 12, 1-10.
- Han, R., Wei, L., Li, J. P., Zhang, D., & Li, H. L. (2018). The mediating effects of job satisfaction on the association between doctor-patient relationship and OCB among physicians in China. *Iranian Journal of Public Health*, 47(5), 698.
- Harman, D. (1967). A single factor test of common method variance. *Journal of Psychology*, 35(1967), 359-378.
- Hayes, A. F., & Rockwood, N. J. (2017). Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy*, 98, 39-57.
- He, A. J. W., & Qian, J. W. (2016). Explaining medical disputes in Chinese public hospitals: The doctor-patient relationship and its implications for health policy reforms. *Health Economics, Policy and Law*, 11(4), 359-378.
- Hennig-Thurau, T., Groth, M., Paul, M., & Gremler, D. D. (2006). Are all smiles created equal? How emotional contagion and emotional labor affect service relationships. *Journal of Marketing*, 70(3), 58-73.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513.
- Hochschild, A. R. (1979). Emotion work, feeling rules, and social structure. *American Journal of Sociology*, 85(3), 551-575.
- Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. University of California Press.
- Hogan, R. (1969). Development of an empathy scale. *Consulting and Clinical Psychology*, 33, 307-316.
- Hojat, M., Gonnella, J. S., Mangione, S., Nasca, T. J., Veloski, J. J., Erdmann, J. B., Callahan, C. A., & Magee, M. (2002). Empathy in medical students as related to academic performance, clinical competence and gender. *Medical Education*, 36(6), 522-527.
- Hojat, M., Gonnella, J. S., Nasca, T. J., Mangione, S., Vergare, M., & Magee, M. (2002). Physician empathy: Definition, components, measurement, and relationship to gender and specialty. *American Journal of Psychiatry*, 159(9), 1563-1569.
- Hojat, M., Louis, D. Z., Maxwell, K., Markham, F., Wender, R., & Gonnella, J. S. (2010). Patient perceptions of physician empathy, satisfaction with physician, interpersonal trust, and compliance. *International Journal of Medical Education*, 1, 83.
- Hojat, M., Mangione, S., Nasca, T. J., Cohen, M. J. M., Gonnella, J. S., Erdmann, J. B., Veloski, J., & Magee, M. (2001). The Jefferson Scale of Physician Empathy: Development and preliminary psychometric data. *Educational and Psychological Measurement*, 61(2), 349-365.
- Hou, D. Z., Yan, D. G., & Yang, N. X. (2017). 肿瘤外科医生共情能力调查与启示 [Research on empathy ability among surgical oncology doctors and the enlightenment]. *Chinese Medical Ethics*, 30(04), 471-475.

- Hu, X. J., & Yang, L. (2016). 从一般人际信任到医患信任的理论辨析 [From general interpersonal trust to doctor-patient trust: A theoretical analysis]. *Chinese Mental Health Journal*, 30(9), 641-645.
- Hu, Y. H., & Zhang, Z. X. (2015). Patient education: A route to improved patient experience in Chinese hospitals? *Patient Education and Counseling*, 98(12), 1651-1652.
- Huang, E. C. H., Pu, C., Huang, N., & Chou, Y. J. (2019). Resident burnout in Taiwan Hospitals and its relation to physician felt trust from patients. *Journal of the Formosan Medical Association*, 118(10), 1438-1449.
- Huang, L., Caspari, J. H., Sun, X. T., Thai, J., Li, Y. X., Chen, F. Z., & Zhao, X. D. (2020). Risk and protective factors for burnout among physicians from standardized residency training programs in Shanghai: A cross-sectional study. *BMC Health Services Research*, 20(1), 1-12.
- Huang, W. J., Zheng, S. H., Liang, Y. C., & Qiu, S. J. (2020). 深圳市罗湖区全科医生同理心能力及相关因素分析研究 [Analysis of empathy ability and related factors of general practitioners in Shenzhen Luohu District]. *Chinese General Practice*, (S1), 18-20.
- Huberman, M. (1999). *Understanding and preventing teacher burnout: A sourcebook of international research and practice*. Cambridge University Press.
- Hülshager, U. R., Lang, J. W. B., Schewe, A. F., & Zijlstra, F. R. H. (2015). When regulating emotions at work pays off: A diary and an intervention study on emotion regulation and customer tips in service jobs. *Journal of Applied psychology*, 100(2), 263.
- Hülshager, U. R., & Schewe, A. F. (2011). On the costs and benefits of emotional labor: A meta-analysis of three decades of research. *Journal of Occupational Health Psychology*, 16(3), 361.
- Humphrey, R. H., Ashforth, B. E., & Diefendorff, J. M. (2015). The bright side of emotional labor. *Journal of Organizational Behavior*, 36(6), 749-769.
- Huppertz, A. V., Hülshager, U. R., De Calheiros Velozo, J., & Schreurs, B. H. (2020). Why do emotional labor strategies differentially predict exhaustion? Comparing psychological effort, authenticity, and relational mechanisms. *Journal of Occupational Health Psychology*, 25(3), 214.
- Hur, W. M., Moon, T. W., & Jun, J. K. (2013). The role of perceived organizational support on emotional labor in the airline industry. *International Journal of Contemporary Hospitality Management*, 25(1), 105-123.
- Hwa, M. A. C. (2012). Emotional labor and emotional exhaustion: Does co-worker support matter? *Journal of Management Research*, 12(3), 115.
- Hwang, W. J., & Park, E. H. (2022). Developing a structural equation model from Grandey's emotional regulation model to measure nurses' emotional labor, job satisfaction, and job performance. *Applied Nursing Research*, 64, 151557.
- Igartua, J. J., & Hayes, A. F. (2021). Mediation, moderation, and conditional process analysis: Concepts, computations, and some common confusions. *The Spanish Journal of Psychology*, 24, e49.
- Janssen, A. L., MacLeod, R. D., & Walker, S. T. (2008). Recognition, reflection, and role models: Critical elements in education about care in medicine. *Palliative & Supportive Care*, 6(4), 389-395.
- Jia, H., Yu, J., Xu, M., Guo, C., Li, M., & Lan, L. (2019). 综合医院医生群体抑郁/焦虑现状及其同医患关系紧张度的相关性分析 [Analysis of the current situation of depression/anxiety in the general hospital physician group and its relationship with the tension of the doctor-patient relationship]. *World Latest Medicine Information*, 19(27), 171-172.
- Jiang, J., Zhang, S. Y., Xu, Y., & Deng, Z. (2005). 警察工作倦怠与 A 型行为、压力源的关系

- 系 [The relationship between police burnout and Type A behavior and stressors]. *Chinese Mental Health Journal*, (03), 207.
- Jin, J. S., & Jiang, X. R. (1999). 浅谈市场经济体制下的医患关系 [On doctor-patient relationship under market economy system]. *China Journal of Modern Medicine*, (02), 3-5.
- Johnson, H. A. M., & Spector, P. E. (2007). Service with a smile: Do emotional intelligence, gender, and autonomy moderate the emotional labor process? *Journal of Occupational Health Psychology*, 12(4), 319.
- Judge, T. A., Woolf, E. F., & Hurst, C. (2009). Is emotional labor more difficult for some than for others? A multilevel, experience-sampling study. *Personnel Psychology*, 62(1), 57-88.
- Kammeyer-Mueller, J. D., Rubenstein, A. L., Long, D. M., Odio, M. A., Buckman, B. R., Zhang, Y. W., & Halvorsen-Ganepola, M. D. K. (2013). A meta-analytic structural model of dispositional affectivity and emotional labor. *Personnel Psychology*, 66(1), 47-90.
- Kariou, A., Koutsimani, P., Montgomery, A., & Lainidi, O. (2021). Emotional labor and burnout among teachers: A systematic review. *International Journal of Environmental Research and Public Health*, 18(23), 12760.
- Kerasidou, A., & Horn, R. (2016). Making space for empathy: Supporting doctors in the emotional labour of clinical care. *BMC Medical Ethics*, 17(1), 1-5.
- Khalaila, R. (2022). Does emotional empathy moderate the association between caregiver burden and burnout among Arab family caregivers of older relatives? *Health & Social Care in the Community*, 198-214.
- Khan, M. A. S., Du, J. G., Anwar, F., Shahzad, F., & Qalati, S. A. (2021). Corporate social responsibility and the reciprocity between employee perception, perceived external prestige, and employees' emotional labor. *Psychology Research and Behavior Management*, 14, 61.
- Kim, H. J. (2008). Hotel service providers' emotional labor: The antecedents and effects on burnout. *International Journal of Hospitality Management*, 27(2), 151-161.
- Kim, J. S. (2020). Emotional labor strategies, stress, and burnout among hospital nurses: A path analysis. *Journal of Nursing Scholarship*, 52(1), 105-112.
- Kim, S., & Wang, J. (2018). The role of job demands-resources (JDR) between service workers' emotional labor and burnout: New directions for labor policy at local government. *International Journal of Environmental Research and Public Health*, 15(12), 2894.
- Kim, S. S., Kaplowitz, S., & Johnston, M. V. (2004). The effects of physician empathy on patient satisfaction and compliance. *Evaluation & The Health Professions*, 27(3), 237-251.
- Kirby, R., Knowles, H. C., Patel, A., Alanis, N., Rice, C., d'Etienne, J. P., Schrader, C. D., Zenarosa, N. R., & Wang, H. (2021). The influence of patient perception of physician empathy on patient satisfaction among attending physicians working with residents in an emergent care setting. *Health Science Reports*, 4(3), e337.
- Koopman, J., Conway, J. M., Dimotakis, N., Tepper, B. J., Lee, Y. E., Rogelberg, S. G., & Lount Jr, R. B. (2021). Does CWB repair negative affective states, or generate them? Examining the moderating role of trait empathy. *Journal of Applied psychology*, 106(10), 1493.
- Kruml, S. M., & Geddes, D. (2000). Exploring the dimensions of emotional labor: The heart of Hochschild's work. *Management Communication Quarterly*, 14(1), 8-49.
- Kuai, Y. J. (2021). 消极情绪与情绪调节对医患信任的影响 [The influence of negative emotion and emotion regulation on doctor-patient trust]. *New Economy*, (04), 66-70.
- Laverdière, O., Ogrodniczuk, J. S., & Kealy, D. (2019). Clinicians' empathy and professional quality of life. *The Journal of Nervous and Mental Disease*, 207(2), 49-52.
- Lee, D. C., Hung, L. M., & Huang, S. C. (2012). Does job enjoyment and organizational support affect emotional labor? *İşletme Araştırmaları Dergisi*, 4(2), 5-29.
- Lee, M. S., & Kim, H. S. (2020). The effects of service employee resilience on emotional labor: Double-mediation of person-job fit and work engagement. *International Journal of*

- Environmental Research and Public Health*, 17(19), 7198.
- Lelorain, S., Brédart, A., Dolbeault, S., & Sultan, S. (2012). A systematic review of the associations between empathy measures and patient outcomes in cancer care. *Psycho-Oncology*, 21(12), 1255-1264.
- Li, C. P., Shi, K., Luo, Z. X., Li, L., & Yang, Y. (2003). 医护人员工作倦怠的调查 [Work-family conflict and job burnout of doctors and nurses]. *Chinese Mental Health Journal*, (12), 807-809.
- Li, D. L., & Lu, J. G. (2011). 从患者视角看预设性信任/不信任及其根源 [The pre-constructional trust & distrust and their origins from the perspective of patients' side]. *Chinese Medical Ethics*, 24(02), 201-203.
- Li, H. H., Ma, X. D., Sun, Y., & Wen, D. L. (2013). 临床医生同理心现状调查与影响因素分析 [A survey on the status quo and influencing factors of empathy among clinicians]. *Chinese Journal of Medical Education*, 33(06), 880-881.
- Li, M. Y., Chen, Y. W., Zhang, L., Xu, M. Y., Jia, H., Lou, J., Guo, C. C., Li, X. L., & Lan, L. (2019). 医生职业倦怠与医患关系认知的相关性研究 [Study on the correlation between doctor burnout and cognition of doctor-patient relationship]. *Medicine & Philosophy*, 40(11), 50-54.
- Li, W. J. (2018). 基于医患信任的医务人员工作投入路径研究 [Research on the job involvement path of medical staff based on trust between doctors and patients]. *Health Economics Research*, (07), 41-44.
- Li, X. T., & Peng, P. (2018). 真情还是假意? 情绪劳动策略对工作退缩行为的差异化影响 [True love or fake passion? The differential effects of emotional labor strategies on withdrawal behavior]. *Human Resources Development of China*, (06), 50-61.
- Li, Y. (2003). 工作倦怠及其测量 [Burnout and its measurement]. *Psychological Science*, (03), 556-557.
- Li, Y., Fu, Y., Zhang, M., & Liu, C. (2019). 医务人员共情疲劳与职业倦怠相关研究中英文文献计量学分析 [Chinese and English bibliometric analysis on empathy fatigue and job burnout among medical staffs]. *China Occupational Medicine*, 46(03), 371-375.
- Li, Y. X., Li, Y. M., & Shi, J. X. (2007). 护士工作倦怠与人格特征的相关研究 [Job burnout level and personality characteristics of nurses]. *Journal of Nursing Science*, (01), 3-5.
- Li, Z. (2019). 转型期中国医患信任问题研究 [Research on doctor-patient trust in China during the transformation period] [Doctoral dissertation]. Central China Normal University.
- Li, Z. J., Yu, Y. F., Zhang, Y. M., Yi, W. L., Yu, J. L., Chen, S., & Li, J. (2021). 三级甲等医院 ICU 护士情绪劳动策略与工作相关生活质量的相关性研究 [Relationship between emotional labor strategies and work-related quality of life among ICU nurses in tertiary grade A hospitals]. *Chinese General Practice Nursing*, (20), 2757-2760.
- Liao, Z. L. (2015). 破除我国"以药养医"的机制设计分析 [Study on getting rid of China's "drug-maintaining-medicine": Analysis from the perspective of mechanism design theory] [Master's thesis]. Southwest University of Political Science & Law.
- Liu, C. H., Wang, Y. M., Yu, G. L., & Wang, Y. J. (2009). 共情的相关理论评述及动态模型探新 [Related theories and exploration on dynamic model of empathy]. *Advances in Psychological Science*, 17(05), 964-972.
- Liu, G. Y., Xie, Q. H., Liu, Z. J., Zhu, Q., He, J., & Song, X. Y. (2018). 医学生的共情能力对情绪弹性的影响 [The effect of medical students' empathy ability on emotional resiliency]. *China Journal of Health Psychology*, 26(05), 763-766.
- Liu, J. F., Zhou, C. C., & Yang, F. (2015). 医患信任程度测量量表研究进展 [A review on

- domestic and oversea literature about doctor-patient trust scale research]. *Journal of Kunming University of Science and Technology (Social Science Edition)*, 15(03), 11-18.
- Liu, L., Ma, Q., & Sun, F. (2018). 新疆某骨科专科医院骨科医生情绪劳动及职业倦怠现状调查及相关分析 [Investigation and related analysis of the current situation of emotional labor and job burnout of orthopedic surgeons in a orthopaedic hospital in Xinjiang]. *Systems Medicine*, 3(17), 40-42.
- Liu, L., Xu, P. Y., Zhou, K. X., Xue, J. Y., & Wu, H. (2018). Mediating role of emotional labor in the association between emotional intelligence and fatigue among Chinese doctors: A cross-sectional study. *BMC Public Health*, 18(1), 1-8.
- Liu, M. X., Wang, N., Wang, P. C., Wu, H. M., Ding, X. E., & Zhao, F. Q. (2021). Negative emotions and job burnout in news media workers: A moderated mediation model of rumination and empathy. *Journal of Affective Disorders*, 279, 75-82.
- Liu, M. Y., Shen, K. L., & Liu, L. Q. (2019). 我国医疗纠纷人民调解机制的法制化评析 [Analysis on the legal system of people's mediation mechanism of medical disputes in China]. *Chinese Hospitals*, 23(08), 54-57.
- Liu, W., Liang, L. B., Tao, S. Y., Song, W. J., Xue, Y. X., Sun, M. L., Zhao, J., Wang, C., & Zou, D. D. (2020). 基于社会生态系统理论视角下医患关系紧张成因分析 [Analysis of the causes of doctor-patient tension based on the socio-ecological system theory perspective]. *Chinese Hospitals*, 24(06), 31-34.
- Liu, X. Y., Wang, Z. Y., Zhang, H., & Meng, Q. Y. (2021). Measuring and evaluating progress towards Universal Health Coverage in China. *Journal of Global Health*, 11, 08005.
- Liu, Y., Zhu, X. L., & Wang, L. (2020). 职业紧张和医患关系对医务人员抑郁倾向的影响 [Effects of occupational stress and doctor-patient relationship on depression tendency of medical staff]. *Industrial Health and Occupational Diseases*, (04), 268-270, 273.
- Liu, Y. M., Prati, L. M., Perrewe, P. L., & Ferris, G. R. (2008). The relationship between emotional resources and emotional labor: An exploratory study. *Journal of Applied Social Psychology*, 38(10), 2410-2439.
- Lord, K., Ibrahim, K., Kumar, S., Rudd, N., Mitchell, A. J., & Symonds, P. (2012). Measuring trust in healthcare professionals: A study of ethnically diverse UK cancer patients. *Clinical Oncology*, 24(1), 13-21.
- Lu, M. J., Yan, H. S., Zou, T. F., Li, L., Xue, G. J., & Wang, Y. J. (2014). 社区医生心理健康状况与职业倦怠的分析 [The analysis of mental health and occupational burnout of community physicians]. *China Journal of Health Psychology*, 22(04), 542-545.
- Lu, X. F., & Zhang, S. (2019). 信息不对称对医患关系的影响及对策研究 [Influence of information asymmetry on doctor-patient relationship and countermeasures: Taking citizen participation as the main point of view]. *China Medical Herald*, 16(02), 169-173.
- Lv, X. K. (2020). 从关系治理到共同体建设:重建医患信任的协同路径 [From doctor-patient relationship governance to doctor-patient community construction: A coordinated approach to rebuilding doctor-patient trust]. *Journal of Nanjing Normal University (Social Science Edition)*, (04), 84-93.
- Lv, X. K., & Zhao, X. F. (2019). 主观社会阶层和负性情绪对医患信任的影响——一个有调节的中介模型 [The influence of subjective social class and negative emotions on doctor-patient trust: A moderated mediation model]. *Journal of Northwest Normal University (Social Sciences)*, 56(02), 127-132.
- Ma, S. Z., Silva, M. G., Trigo, V., & Callan, V. J. (2020). The influence of emotional labor and emotional intelligence on job performance: Does ownership type matter? A comparison of public and private organizations in china. *International Journal of Public Administration*, 43(9), 745-756.

- Ma, S. Z., Xie, W. F., & Ramalho, N. J. C. (2021). Impact of bullying on occupational commitment in young nursing professionals: The mediating role of emotional labour and emotional exhaustion. *Contemporary Nurse*, 57(1-2), 13-27.
- Ma, S. Z., Xu, X. H., Trigo, V., & Ramalho, N. J. C. (2017). Doctor-patient relationships (DPR) in China: Managers and clinicians' twofold pathways from commitment HR practices. *Journal of Health Organization and Management*, 31(1), 110-124.
- Mahmoudian, A., Zamani, A., Tavakoli, N., Farajzadegan, Z., & Fathollahi-Dehkordi, F. (2017). Medication adherence in patients with hypertension: Does satisfaction with doctor-patient relationship work? *Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences*, 22, 48.
- Mahoney, K. T. (2012). Individual differences and emotional labor: An experiment on positive display rules. *Personality and Individual Differences*, 53(3), 251-256.
- Malach-Pines, A. (2005). The burnout measure, short version. *International Journal of Stress Management*, 12(1), 78.
- Malakh-Pines, A., Aronson, E., & Kafry, D. (1981). *Burnout: From tedium to personal growth*. Free Press.
- Mao, X. R., Han, L., Zhang, J. X., & She, D. L. (2020). 某“三甲”医院护士情绪劳动现状及影响因素分析 [Analysis of emotional labor status and influencing factors of nurses in a “Grade A tertiary” hospital]. *Health Vocational Education*, (10), 146-148.
- Marsh, H. W., Wen, Z. L., & Hau, K. T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction. *Psychological Methods*, 9(3), 275.
- Martikainen, S., Falcon, M., Wikström, V., Peltola, S., & Saarikivi, K. (2022). Perceptions of doctors' empathy and patients' subjective health status at an online clinic: Development of an empathic anamnesis questionnaire. *Psychosomatic Medicine*, 84(4), 513-521.
- Maslach, C., & Goldberg, J. (1998). Prevention of burnout: New perspectives. *Applied and Preventive Psychology*, 7(1), 63-74.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99-113.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *The Maslach Burnout Inventory manual (3rd ed.)*. Consulting Psychologists Press.
- Mazur, P. J., & Lynch, M. D. (1989). Differential impact of administrative, organizational, and personality factors on teacher burnout. *Teaching and Teacher Education*, 5(4), 337-353.
- Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy. *Journal of Personality*, 40(4), 525-543.
- Meng, J., Hu, L., Shen, L., Yang, Z., Chen, H., Huang, X. T., & Jackson, T. (2012). Emotional primes modulate the responses to others' pain: An ERP study. *Experimental Brain Research*, 220(3), 277-286.
- Meng, Y., & Yang, H. (2021). 共情疲劳研究综论——兼论对社会工作的理论启示 [A review of empathy fatigue studies and the theoretical implication for social work]. *Journal of Southwest Petroleum University (Social Sciences Edition)*, 23(06), 104-112.
- Mercer, S. W., & Reynolds, W. J. (2002). Empathy and quality of care. *British Journal of General Practice*, 52(Suppl), S9-12.
- Moore, J. E. (2000). One road to turnover: An examination of work exhaustion in technology professionals. *MIS Quarterly*, 24(1), 141-168.
- Morris, J. A., & Feldman, D. C. (1996). The dimensions, antecedents, and consequences of emotional labor. *Academy of Management Review*, 21(4), 986-1010.
- Neumann, M., Edelhäuser, F., Tauschel, D., Fischer, M. R., Wirtz, M., Woopen, C., Haramati, A., & Scheffer, C. (2011). Empathy decline and its reasons: A systematic review of studies with medical students and residents. *Academic Medicine*, 86(8), 996-1009.

- Nguyen, H., Groth, M., & Johnson, A. (2016). When the going gets tough, the tough keep working: Impact of emotional labor on absenteeism. *Journal of Management*, 42(3), 615-643.
- Ni, Y., & Li, C. (2021). 包容型领导与情绪劳动策略选择——来自银行业一线服务人员的实证研究. 南开管理评论 [Inclusive leadership and emotional labor strategy: Empirical research from frontline service employee in the banking industry]. *Nankai Business Review*, 24(02), 106-119.
- Nie, J. B., Cheng, Y., Zou, X., Gong, N., Tucker, J. D., Wong, B., & Kleinman, A. (2018). The vicious circle of patient–physician mistrust in China: Health professionals’ perspectives, institutional conflict of interest, and building trust through medical professionalism. *Developing World Bioethics*, 18(1), 26-36.
- Nielsen, H. G., & Tulinus, C. (2009). Preventing burnout among general practitioners: Is there a possible route? *Education for Primary Care*, 20(5), 353-359.
- Ogunbamila, B. (2013). Occupational burnout among employees in some service occupations in Nigeria: Are health workers different? *Psychological Thought*, 6(1).
- Owoc, J., Mańczak, M., Jabłońska, M., Tombarkiewicz, M., & Olszewski, R. (2022). Association between physician burnout and self-reported errors: Meta-analysis. *Journal of Patient Safety*, 18(1), e180-e188.
- Ozawa, S., & Sripad, P. (2013). How do you measure trust in the health system? A systematic review of the literature. *Social Science & Medicine*, 91, 10-14.
- Pan, L. L., & Liu, W. (2011). 医患信任危机对医疗执业环境的影响及其法律因应 [The impact of doctor-patient trust crisis on medical practice environmental and legal measures]. *Acta Universitatis Medicinalis Nanjing (Social Science)*, 11(06), 448-451.
- Pan, L. S., Que, Y., & Yang, N. X. (2017). 神经内科医生共情能力对住院脑卒中患者抑郁情绪的影响 [Effect of nerve physicians' empathy ability on depressive mood of hospitalized stroke patients]. *Chinese Medical Ethics*, 30(10), 1255-1258.
- Pan, Y., He, J. P., Gu, Y. H., Zhan, X. L., Gu, H. F., Qiao, Q. Y., Zhou, D. C., & Jin, H. M. (2015). To be or not to be a doctor, that is the question: A review of serious incidents of violence against doctors in China from 2003–2013. *Journal of Public Health*, 23(2), 111-116.
- Panagioti, M., Geraghty, K., Johnson, J., Zhou, A., Panagopoulou, E., Chew-Graham, C., Peters, D., Hodgkinson, A., Riley, R., & Esmail, A. (2018). Association between physician burnout and patient safety, professionalism, and patient satisfaction: A systematic review and meta-analysis. *JAMA Internal Medicine*, 178(10), 1317-1331.
- Papagianni, M., & Tziomalos, K. (2018). Healthcare reform in China: Challenges and opportunities. *Current Medical Research and Opinion*, 34(5), 821-823.
- Parsons, T. (1951). Illness and the role of the physician: A sociological perspective. *American Journal of orthopsychiatry*, 21(3), 452.
- Pavlova, A., Wang, C. X. Y., Boggiss, A. L., O’Callaghan, A., & Consedine, N. S. (2021). Predictors of physician compassion, empathy, and related constructs: A systematic review. *Journal of General Internal Medicine*, 37, 900-911.
- Pearson, S. D., & Raeke, L. H. (2000). Patients’ trust in physicians: Many theories, few measures, and little data. *Journal of General Internal Medicine*, 15(7), 509-513.
- Pei, P., Lin, G. H., Li, G. J., Zhu, Y. F., & Xi, X. Y. (2020). The association between doctors’ presenteeism and job burnout: A cross-sectional survey study in China. *BMC Health Services Research*, 20(1), 1-7.
- Peng, J. X., He, Y., Deng, J., Zheng, L. L., Chang, Y., & Liu, X. Q. (2019). Emotional labor strategies and job burnout in preschool teachers: Psychological capital as a mediator and moderator. *Work*, 63(3), 335-345.

- Picard, J., Catu-Pinault, A., Boujut, E., Botella, M., Jaury, P., & Zenasni, F. (2016). Burnout, empathy and their relationships: A qualitative study with residents in General Medicine. *Psychology, Health & Medicine*, 21(3), 354-361.
- Piette, J. D., Heisler, M., Krein, S., & Kerr, E. A. (2005). The role of patient-physician trust in moderating medication nonadherence due to cost pressures. *Archives of Internal Medicine*, 165(15), 1749-1755.
- Piumatti, G., Abbiati, M., Baroffio, A., & Gerbase, M. W. (2019). Associations between motivational factors for studying medicine, learning approaches and empathy among medical school candidates. *Advances in Health Sciences Education*, 24(2), 287-300.
- Prapanjaroensin, A., Patrician, P. A., & Vance, D. E. (2017). Conservation of resources theory in nurse burnout and patient safety. *Journal of Advanced Nursing*, 73(11), 2558-2565.
- Psilopanagioti, A., Anagnostopoulos, F., Mourtou, E., & Niakas, D. (2012). Emotional intelligence, emotional labor, and job satisfaction among physicians in Greece. *BMC Health Services Research*, 12(1), 1-12.
- Qian, G., Guo, Q., Li, Y., Yu, Y., & Jiang, S. (2019). 医护人员情绪智力对医患关系的影响：情绪劳动的中介作用 [The effect of emotional intelligence on the doctor-patient relationship: the mediating effect of emotional labor]. *Medicine & Philosophy*, (02), 66-70.
- Rafaeli, A., & Sutton, R. I. (1987). Expression of emotion as part of the work role. *Academy of Management Review*, 12(1), 23-37.
- Rakel, D., Barrett, B., Zhang, Z. J., Hoeft, T., Chewning, B., Marchand, L., & Scheder, J. (2011). Perception of empathy in the therapeutic encounter: Effects on the common cold. *Patient Education and Counseling*, 85(3), 390-397.
- Rashid, Z., Sharif, I., Khushk, I. A., & Raja, A. A. (2021). Evaluation of empathy and fatigue among physicians and surgeons in tertiary care hospitals of Rawalpindi. *Pakistan Journal of Medical Sciences*, 37(3), 663.
- Ren, J. H. (2020). “人与仁”: 传统中医生患关系的当代启示 [“People and benevolence”: Contemporary implications of the traditional doctor-patient relationship]. *Thinking*, 46(1), 67.
- Ren, L., & Bai, J. G. (2011). 从“医闹”与防御性医疗行为探索和谐医患关系 [From hospital violator and defensive-medicine to explore harmonious doctor-patient relationship]. *Chinese Journal of Women and Children Health*, 2(05), 226-228.
- Riley, R., & Weiss, M. C. (2016). A qualitative thematic review: Emotional labour in healthcare settings. *Journal of Advanced Nursing*, 72(1), 6-17.
- Rogers, M. E., Creed, P. A., & Searle, J. (2014). Emotional labour, training stress, burnout, and depressive symptoms in junior doctors. *Journal of Vocational Education & Training*, 66(2), 232-248.
- Russell, M., & Brickell, M. (2015). The “double-edge sword” of human empathy: A unifying neurobehavioral theory of compassion stress injury. *Social Sciences*, 4(4), 1087-1117.
- Sansoni, J., De Caro, W., Marucci, A. R., Sorrentino, M., Mayner, L., & Lancia, L. (2016). Nurses’ job satisfaction: An Italian study. *Annali di Igiene*, 28(1), 58-69.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293-315.
- Schmitz, N., Neumann, W., & Oppermann, R. (2000). Stress, burnout and locus of control in German nurses. *International Journal of Nursing Studies*, 37(2), 95-99.
- Schuhlen, M., & Schürkmann, S. (2016). *International handbook of financial literacy*. Springer.
- Schwan, D. (2018). Should physicians be empathetic? Rethinking clinical empathy. *Theoretical Medicine and Bioethics*, 39(5), 347-360.
- Scott, B. A., & Barnes, C. M. (2011). A multilevel field investigation of emotional labor, affect, work withdrawal, and gender. *Academy of Management Journal*, 54(1), 116-136.

- Shaheen, A., Mahmood, M. A., Zia-ul-Miraj, M., & Ahmad, M. (2020). Empathy levels among undergraduate medical students in Pakistan, a cross sectional study using Jefferson scale of physician empathy. *Journal of Pakistan Medical Association*, 70(7), 1149-1153.
- Shahi, S., Paudel, D. R., & Bhandari, T. R. (2022). Burnout among resident doctors: An observational study. *Annals of Medicine and Surgery*, 76, 103437.
- Shao, C. Y., Zhang, S. X., & Tai, M. (2019). 国内外医务人员职业倦怠研究进展 [Research progress on burnout among medical personnel at home and abroad]. *Chinese Journal of Hospital Administration*, (06), 487-489.
- Shen, S. S., Wang, S. L., Li, J. Y., & Zhao, J. (2017). 社会信任机制及医患信任评价研究综述 [Review of social trust mechanism and doctor-patient trust evaluation]. *Chinese Medical Ethics*, 30(9), 1098-1102.
- Shi, Y., & Zhang, Q. (2015). 暴力伤医背景下医务人员权益保护的法律思考 [Legal reflection on medical staff's rights and interests protection under the background of violent injury to medical staff]. 7(02), 37-39.
- Shirom, A. (Ed.). (1989). *Burnout in work organizations*. John Wiley & Sons.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1(1), 27.
- Simões, J. A., Prazeres, F., Maricoto, T., Simões, P. A., Lourenço, J., Romano, J. P., & Santiago, L. M. (2021). Physician empathy and patient enablement: Survey in the Portuguese primary health care. *Family Practice*, 38(5), 606-611.
- Sohn, B. K., Park, S. M., Park, I. J., Hwang, J. Y., Choi, J. S., Lee, J. Y., & Jung, H. Y. (2018). The relationship between emotional labor and job stress among hospital workers. *Journal of Korean Medical Science*, 33(39).
- Somville, F., Van der Mieren, G., De Cauwer, H., Van Bogaert, P., & Franck, E. (2022). Burnout, stress and Type D personality amongst hospital/emergency physicians. *International Archives of Occupational and Environmental Health*, 95(2), 389-398.
- Song, J., Liu, F., Li, X. W., Qu, Z., Zhang, R. Q., & Yao, J. (2021). The effect of emotional labor on presenteeism of Chinese nurses in tertiary-level hospitals: The mediating role of job burnout. *Frontiers in Public Health*, 9, 1-9.
- Song, Y., Cao, X. H., & Wu, H. Z. (2019). 我国医患关系的多重规定性研究 [Multidisciplinary study of the doctor-patient relationship in China]. 中国医院管理, 39(7), 54-56. . *Chinese Hospital Management*, (07), 54-56.
- Su, L. X., Xie, J., Chen, Y., Huang, Q. Y., & Liu, G. Y. (2014). 基层医院护士心理健康与职业倦怠、离职倾向研究 [Study on mental health, burnout and turnover intention of nurses in rural hospitals]. *Chinese General Practice Nursing*, 12(07), 583-585.
- Suh, C., & Punnett, L. (2021). Surface-acting emotional labor predicts depressive symptoms among health care workers over a 2-year prospective study. *International Archives of Occupational and Environmental Health*, 94(3), 367-375.
- Sui, G. Y., & Jia, L. Q. (2018). 医生医疗事故恐惧与组织支持感和工作倦怠的关系 [Effects of fear of malpractice and organizational support on job burnout among doctors]. *Journal of China Medical University*, 47(03), 264-267.
- Sun, T., Gao, L., Li, F. J., Shi, Y., Xie, F. Z., Wang, J. H., Wang, S., Zhang, S., Liu, W. H., & Duan, X. J. (2017). Workplace violence, psychological stress, sleep quality and subjective health in Chinese doctors: A large cross-sectional study. *BMJ Open*, 7(12), e017182.
- Sun, Y. Y., Liu, F., & Cao, F. L. (2019). 三甲医院医护人员职业倦怠亚型及情绪问题研究 [Job burnout subtypes and emotional problems among medical staff in a tertiary hospital]. *Journal of Shandong University (Health Sciences)*, 57(6), 100-105.
- Szasz, T. S., & Hollender, M. H. (1956). A contribution to the philosophy of medicine: The

- basic models of the doctor-patient relationship. *AMA Archives of Internal Medicine*, 97(5), 585-592.
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273-1296.
- Tan, H. T., Jia, Q. H., Li, Q. H., & Jiang, J. Z. (2016). 医护人员情绪劳动和职业倦怠对医患关系的影响及对策 [The influence and countermeasures of the emotional labor and job burnout on hospital patient relationship]. *Chinese Hospitals*, 20(4), 55-57.
- Thom, D. H., Kravitz, R. L., Bell, R. A., Krupat, E., & Azari, R. (2002). Patient trust in the physician: Relationship to patient requests. *Family Practice*, 19(5), 476-483.
- Thom, D. H., Ribisl, K. M., Stewart, A. L., Luke, D. A., & The Stanford Trust Study Physicians. (1999). Further validation and reliability testing of the Trust in Physician Scale. *Medical Care*, 37(5), 510-517.
- Too, A., Gatien, C., & Cormier, S. (2021). Treatment satisfaction mediates the association between perceived physician empathy and psychological distress in a community sample of individuals with chronic pain. *Patient Education and Counseling*, 104(5), 1213-1221.
- Tucker, J. D., Cheng, Y., Wong, B., Gong, N., Nie, J. B., Zhu, W., McLaughlin, M. M., Xie, R. S., Deng, Y. H., & Huang, M. J. (2015). Patient-physician mistrust and violence against physicians in Guangdong Province, China: A qualitative study. *BMJ Open*, 5(10), e008221.
- Van Woerkom, M., Bakker, A. B., & Nishii, L. H. (2016). Accumulative job demands and support for strength use: Fine-tuning the job demands-resources model using conservation of resources theory. *Journal of Applied psychology*, 101(1), 141.
- Veatch, R. M. (1972). Models for ethical medicine in a revolutionary age. *Hastings Center Report*, 2(3), 5-7.
- Vijendren, A., Yung, M., & Sanchez, J. (2015). Occupational health issues amongst UK doctors: A literature review. *Occupational Medicine*, 65(7), 519-528.
- Waddimba, A. C., Bennett, M. M., Fresnedo, M., Ledbetter, T. G., & Warren, A. M. (2021). Resilience, well-being, and empathy among private practice physicians and advanced practice providers in Texas: A structural equation model study. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*, 5(5), 928-945.
- Wallston, K. A., Wallston, B. S., & Gore, S. (1973). Development of a scale to measure nurses' trust of patients. *Nursing Research*, 22(3), 232-235.
- Wang, C., Rao, K. Q., Wu, S. N., & Liu, Q. (2013). Health care in China: improvement, challenges, and reform. *Chest*, 143(2), 524-531.
- Wang, C. Y., Wang, D. P., Zhao, X. W., Fang, Q. W., & Liu, Y. (2010). 结构方程模型中拟合指数的运用与比较 [The comparison of goodness index of structural equation model]. *Modern Preventive Medicine*, 37(1), 7-9.
- Wang, G. (2012). 医务人员的职业安全风险及防范措施 [Occupational safety risks and preventive measures of medical staff]. *Chinese Journal of Disinfection*, (11), 1057-1058.
- Wang, G. (2018). 基于羊群效应传染动力模型的医患关系网络舆情演变研究 [A study on evolution of internet public opinion of doctor-patient relationship based on herding effect infection dynamic model]. *Journal of Nanchang University (Humanities and Social Sciences)*, (04), 64-69.
- Wang, K. (2017). *An analysis of the current doctor-patient relationship in China under the threshold of medical ethics* [Master's thesis]. Qufu Normal University.
- Wang, M., Lan, Y. C., & Zhao, M. (2015). 患者预设性不信任与医患信任危机 [Discussion on presupposed mistrust of patients and trust crisis between doctors and patients]. *Medicine & Philosophy (A)*, 36(03), 47-50.
- Wang, Q. Z., Wang, L., & Lin, H. D. (2009). 传统医患关系模式分析及新型和谐模式的构建 [The analysis on the traditional mode of doctor-patient relationship and the construction

- of the new-type of harmonious mode]. *Modern Hospital Management*, 7(1), 1-4.
- Wang, S., Zhang, Y. G., & Xu, L. (2014). 第五次国家卫生服务调查结果之三——医务人员执业环境现状 [The present situation of medical personnel practicing environment in China]. *Chinese Journal of Health Informatics and Management*, (4), 321-325.
- Wang, T., Wang, W. L., Hong, J. F., Luan, B. B., Zhu, Y., & Wang, J. X. (2015). 临床护士共情能力对职业倦怠感与主观幸福感间关系的调节作用 [Subjective well-being and job burnout of clinical nurses: The role of empathy]. *Chinese Nursing Management*, 15(03), 280-284.
- Wang, W. J. (2019). 公立医院职业环境现状调查及对策研究 [Investigation on the current situation of occupational environment in public hospitals and countermeasures: Take a tertiary hospital in Shanghai as example] [Master's thesis]. Shanghai Jiaotong University.
- Wang, Y. G., Peng, C., & Wu, G. L. (2012). 情绪劳动研究的回顾与展望 [Review and prospect of research on emotional labor]. *Psychological Research*, 5(04), 63-72.
- Wang, Y. Q., Jiang, Y., Luo, L., Zhao, X. H., & Xia, M. (2019). 从如何约束社会舆论各参与主体探讨和谐医患关系的建立 [How to establish the harmonious doctor-patient relationship by restricting the participants of public opinion]. *Chinese Journal of Social Medicine*, 36(03), 234-236.
- Wang, Z., & Peng, Y. C. (2018). 京郊乡镇卫生院医患关系与医患信任现状及影响因素分析 [Doctor-patient relationship, doctor-patient trust status and influencing factors in township health centers in Beijing]. *Chinese Journal of General Practice*, 16(10), 1690-1693.
- Wang, Z. H., Wang, Y. J., Hu, P., & Zhao, C. (2019). 医患信任脆弱性:理论框架与反脆弱发展体系 [Vulnerability of trust between doctors and patients: Theoretical framework and antifragile development system]. *Journal of Gansu Administration Institute*, (06), 105-113.
- Wang, Z. H., Xie, Z. Y., Dai, J. M., Zhang, L. Q., Huang, Y. B., & Chen, B. (2014). Physician burnout and its associated factors: A cross-sectional study in Shanghai. *Journal of Occupational Health*, 56(1), 73-83.
- Wei, Y., Lin, X., & Pan, J. (2019). 三级甲等医院医生职业倦怠行为研究 [Study on job burnout of doctors in tertiary hospitals]. *Chinese Journal of Social Medicine*, (03), 307-310.
- Wei, Y. M., Lin, X. F., & Pan, J. (2019). 三级甲等医院医生职业倦怠行为研究 [Study on job burnout of doctors in tertiary hospitals]. *Chinese Journal of Social Medicine*, 36(03), 307-310.
- Wen, Z. L., Marsh, H. W., & Hau, K. T. (2010). Structural equation models of latent interactions: An appropriate standardized solution and its scale-free properties. *Structural Equation Modeling*, 17(1), 1-22.
- Weng, H. C., Steed, J. F., Yu, S. W., Liu, Y. T., Hsu, C. C., Yu, T. J., & Chen, W. (2011). The effect of surgeon empathy and emotional intelligence on patient satisfaction. *Advances in Health Sciences Education*, 16(5), 591-600.
- Wharton, A. S., & Erickson, R. I. (1993). Managing emotions on the job and at home: Understanding the consequences of multiple emotional roles. *Academy of Management Review*, 18(3), 457-486.
- Wilkinson, H., Whittington, R., Perry, L., & Eames, C. (2017). Examining the relationship between burnout and empathy in healthcare professionals: A systematic review. *Burnout Research*, 6, 18-29.
- Wu, H., Liu, L., Wang, Y., Gao, F., Zhao, X., & Wang, L. (2013). Factors associated with burnout among Chinese hospital doctors: A cross-sectional study. *BMC Public Health*, 13(1), 1-8.
- Wu, J. D., Nie, G. H., Weng, Y., & Wei, X. Y. (2011). 南宁市医生职业情绪劳动表现策略调

- 查及相关因素分析 [Investigation and analysis of the strategies of emotion work and relevant factors of doctors in Nanning City]. *Chinese Hospital Management*, 31(2), 57-59.
- Wu, Q., Jin, Z. Y., & Wang, P. (2022). The relationship between the physician-patient relationship, physician empathy, and patient trust. *Journal of General Internal Medicine*, 37(6), 1388-1393.
- Wu, W. L., & Lee, Y. C. (2020). Do work engagement and transformational leadership facilitate knowledge sharing? A perspective of conservation of resources theory. *International Journal of Environmental Research and Public Health*, 17(7), 2615.
- Wu, Y. N., Jiang, F., Ma, J., Tang, Y. L., Wang, M. X., & Liu, Y. L. (2021). Experience of medical disputes, medical disturbances, verbal and physical violence, and burnout among physicians in China. *Frontiers in Psychology*, 11, 556517.
- Wu, Z. W., Chen, Y., Li, D. S., Wang, Y., He, S. Y., Guo, Z., An, Z., Yao, Y. C., Chen, S. Q., & Luoyang Center for Disease Control and Prevention. (2019). 医务人员职业倦怠和组织支持感典型相关分析 [Canonical correlation analysis on job burnout and organizational support among medical staffs]. *China Occupational Medicine*, (03), 322-325, 330.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14(2), 121.
- Xie, Z., Qiu, Z. Q., & Zhang, T. H. (2009). 患者因素如何影响医方对医患关系的看法 [Influence of patients' attitude on doctors' satisfaction with the doctor-patient relationship]. *Journal of Peking University (Health Sciences)*, 41(2), 141-143.
- Xu, C. Y., Zhao, Y., & Liang, F. (2019). 新疆某三甲医院高级职称医务人员工作满意度及工作倦怠的影响因素 [Investigation and analysis on influence factor of job satisfaction and burnout among senior medical staff in a third grade hospital in Xinjiang]. *Soft Science of Health*, 33(03), 79-84.
- Xu, Q., Zhang, D. M., & Wu, Y. S. (2011). 同理心理念下的医患沟通 [The concept of empathy used in doctor-patient communication]. *Chinese Medical Ethics*, 24(03), 354-355.
- Xu, X. L., Zhang, Y., Wang, W., Zhang, Y., & Yang, N. X. (2020). Effects of patients' perceptions of physician-patient relational empathy on an inflammation marker in patients with crohn's disease: The intermediary roles of anxiety, self-efficacy, and sleep quality. *Psychology Research and Behavior Management*, 13, 363.
- Xu, Y. H., & Zhu, L. (2004). 信息不对称下医患信任的重构 [Rebuilding doctor-patient trust in the case of unbalanced grasp of information]. *Chinese Journal of Hospital Administration*, (03), 3.
- Yan, Y. X. (2018). The ethics and politics of patient-physician mistrust in contemporary China. *Developing World Bioethics*, 18(1), 7-15.
- Yang, L. H., Tang, C. M., Zhang, W. M., Feng, M., Wei, P. L., Guo, F., & Gao, Z. W. (2020). 医生工作时长与医疗差错的相关性研究 [Research on the correlation between clinicians' working hours and medical errors]. *Chinese Health Service Management*, (05), 349-352.
- Yang, X. Q. (2017). *The relationship between workplace violence and silence behavior among medical staffs: The intermediating effect of emotional labor strategy* [Master's thesis]. Harbin Engineering University.
- Yang, Y. J., Chu, H. Y., Yang, X. X., Qiu, X. H., Qiao, Z. X., Song, X. J., zhao, E. Y., & zhou, J. W. (2021). 共情能力在医生压力与医患关系间的中介效应 [Mediating effect of empathy on association between stress and doctorpatient relationship among doctors]. *Chinese Journal of Public Health*, 37(1), 153-156.
- Yao, L. M., Hung, C. S., Ain, S. N., Pui, E., & Lee, O. C. (2021). Prevalence of burnout

- syndrome and its associated factors among doctors in Sabah, Malaysia. *Psychology, Health & Medicine*, 10(6), 1068.
- Yao, T., Li, Y., & Guo, H. P. (2012). 临床共情研究进展 [The brief introduction of clinical empathy]. *Medicine & Philosophy*, 33(02), 4-6.
- Ye, J. Y., Wang, H., Wu, H., Ye, L. S., Li, Q., Ma, X. Y., Yu, X. D., Zhang, H., & Luo, X. (2019). Burnout among obstetricians and paediatricians: A cross-sectional study from China. *BMJ Open*, 9(1), e024205.
- Yeh, S. C. J., Chen, S. H. S., Yuan, K. S., Chou, W., & Wan, T. T. H. (2020). Emotional labor in health care: The moderating roles of personality and the mediating role of sleep on job performance and satisfaction. *Frontiers in Psychology*, 11, 574898.
- Yin, S. Y. (2003). 医患关系紧张程度及其原因——二论医患关系 [Tension and its causes of relationship between the medical and the patient]. *Health Economics Research*, (02), 14-16.
- Yin, S. Y., Zhao, J. B., & Chen, R. N. (2016). 临床医生共情疲劳现况及其影响因素分析 [Empathy fatigue of clinical doctors and its influencing factors]. *Chinese General Practice*, 19(02), 206-209.
- Yip, W. C. M., Hsiao, W. C., Meng, Q. Y., Chen, W., & Sun, X. M. (2020). Realignment of incentives for health care providers in China. *Lancet*, 375(9720), 1120-1130.
- Yu, H. R., Jiang, A. L., & Shen, J. (2016). Prevalence and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: A cross-sectional survey. *International Journal of Nursing Studies*, 57, 28-38.
- Yuan, W. W., Yang, H. J., Li, G. Z., & Man, L. B. (2021). 医务人员情绪劳动、工作满意度及医患关系相互作用研究 [Study on the interaction of emotional labor, job satisfaction and doctor-patient relationship among medical staff]. *Chinese Hospitals*, 25(02), 43-45.
- Yuguero, O., Ramon Marsal, J., Esquerda, M., Vivanco, L., & Soler-González, J. (2017). Association between low empathy and high burnout among primary care physicians and nurses in Lleida, Spain. *European Journal of General Practice*, 23(1), 4-10.
- Zammuner, V. L., & Galli, C. (2005a). The relationship with patients: "Emotional labor" and its correlates in hospital employees. In C. E. J. Hartel, W. J. Zerbe, & N. M. Ashkanasy (Eds.), *Emotions in Organizational Behavior* (pp. 251-285). Lawrence Erlbaum Associates, Inc.
- Zammuner, V. L., & Galli, C. (2005b). Wellbeing: Causes and consequences of emotion regulation in work settings. *International Review of Psychiatry*, 17(5), 355-364.
- Zapf, D. (2002). Emotion work and psychological well-being: A review of the literature and some conceptual considerations. *Human Resource Management Review*, 12(2), 237-268.
- Zapf, D., Vogt, C., Seifert, C., Mertini, H., & Isic, A. (1999). Emotion work as a source of stress: The concept and development of an instrument. *European Journal of Work and Organizational Psychology*, 8(3), 371-400.
- Zeng, S. H., & Shang, H. R. (2019). 共情视角下的医患共同决策实践困境及对策研究 [Research on the practical dilemma and countermeasures of shared decision making from the perspective of empathy]. *Medicine & Philosophy*, (24), 24-27, 36.
- Zeng, W. L., Ma, S. Z., & Gou, L. (2018). 中国医患关系量表的开发与有效性验证 [Development and validation of doctor-patient relationship scale in China]. *Chinese Health Quality Management*, 25(6), 57-61.
- Zhang, H. H., Liu, Y. S., He, G. P., Qin, Y. L., & Zou, H. Y. (2013). ICU 护士职业倦怠与自我效能、共情能力的相关性分析 [Correlation analysis of ICU nurse burnout with self-efficacy and empathy]. *Chinese Journal of Modern Nursing*, (14), 1619-1622.
- Zhang, J. (2017). 正式纠纷解决制度失效、牟利激励与情感触发——多重面相中的“医闹”

- 事件及其治理 [Professionalism, money or emotion: Understanding disruptive incidents in medical disputes and related governance in China]. *Journal of Public Management*, 14(1), 61-74.
- Zhang, L. X., Zhang, C., Zhu, J. J., & Liu, W. W. (2020). 住院医师同理心现状调查及相关因素分析 [A survey of empathy among residents and analysis of related factors]. *Journal of International Psychiatry*, 47(04), 736-739.
- Zhang, S. E., Liu, W. H., Wang, J. H., Shi, Y., Xie, F. Z., Cang, S., Sun, T., & Fan, L. H. (2018). Impact of workplace violence and compassionate behaviour in hospitals on stress, sleep quality and subjective health status among Chinese nurses: A cross-sectional survey. *BMJ Open*, 8(10), e019373.
- Zhang, S. E., Wang, J. H., Xie, F. Z., Yin, D., Shi, Y., Zhang, M., Yin, H. Y., Li, F. J., Yang, L. B., & Cao, D. P. (2020). A cross-sectional study of job burnout, psychological attachment, and the career calling of Chinese doctors. *BMC Health Services Research*, 20(1), 1-11.
- Zhang, X. Y., Li, W., Zhang, G. L., Cai, W. B., Zhuang, J., & Li, Y. J. (2020). 医患关系、工作满意度对昆明市宜良县某医院医务人员工作绩效的影响 [Impact of doctor-patient relationship and job satisfaction on the job performance of medical staffs in a county-level hospital in Kunming]. *Medicine and Society*, 33(03), 92-95.
- Zhao, D. H., Rao, K. Q., & Zhang, Z. R. (2016). Patient trust in physicians: Empirical evidence from Shanghai, China. *Chinese Medical Journal*, 129(07), 814-818.
- Zhao, X. Y., Liu, S., Chen, Y. F., Zhang, Q., & Wang, Y. (2021). Influential factors of burnout among village doctors in China: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(4), 2013.
- Zheng, D. X. (2007). 社会转型期医患利益冲突的调节与平衡——一个伦理学的分析框架 [On adjusting and balancing the interests conflict between doctors and patients during period of social transformation: A framework of ethical analysis]. *Chinese Medical Ethics*, (02), 40-42.
- Zheng, Q., Yang, K., Zhao, R. J., Wang, X., Ping, P., Ou, Z. H., Su, X. P., Zhang, J., & Qu, M. (2022). Burnout among doctors in China through 2020: A systematic review and meta-analysis. *Heliyon*, e09821.
- Zheng, S. Y., Lu, M. N., Zhou, X. D., & Li, F. F. (2016). 医务人员心理健康状况和组织公民行为关系研究 [Relationship analysis between mental health and organizational citizenship behavior among medical staff]. *Medical & Pharmaceutical Journal of Chinese People's Liberation Army*, 28(11), 106-109.
- Zhou, A. Y., Hann, M., Panagioti, M., Patel, M., Agius, R., Van Tongeren, M., Esmail, A., & Bower, P. (2022). Cross-sectional study exploring the association between stressors and burnout in junior doctors during the COVID-19 pandemic in the United Kingdom. *Journal of Occupational Health*, 64(1), e12311.
- Zhou, X. Y., Li, L., & Yao, W. G. (2020). 基于广州市某三甲医院医生视角的医患关系及防御性医疗行为研究 [Study on doctor-patient relationship and doctors' defensive medical behavior from doctors' perspective in a tertiary hospital with level 3 in Guangzhou]. *Medicine and Society*, 33(04), 109-113.
- Zhu, B. W., & Luo, J. J. (2017). 互联网使用会影响公众对医生的信任吗?——基于数据 CSS2013 的实证分析 [Does Internet use affect public trust in doctors?: An empirical study based on data CSS2013]. *Jiangsu Social Sciences*, (03), 70-78.
- Zhu, X. S., Tian, G. X., Yin, H. B., & He, W. J. (2021). Is familism a motivator or stressor? Relationships between Confucian familism, emotional labor, work-family conflict, and emotional exhaustion among Chinese teachers. *Frontiers in Psychology*, 12, 766047.
- Žutautienė, R., Radišauskas, R., Kaliniene, G., & Ustinaviciene, R. (2020). The prevalence of

burnout and its associations with psychosocial work environment among Kaunas region (Lithuania) hospitals' physicians. *International Journal of Environmental Research and Public Health*, 17(10), 3739.

Webliography

- China's Ministry of Health. (1989). *Notice of the Ministry of Health on the implementation of the "Measures for the Level-to-Level Administration of Hospitals (for Trial Implementation)"*. Retrieved June 18, 2022, from <http://www.elinklaw.com/zsglmobile/lawView.aspx?id=32944>
- Hong, Y., Huang, J. H., & Zhang, J. P. (2022). *Relationship between emotional labor and mental health in preschool teachers: Mediation of psychological capital*. Retrieved June 23, 2022, from <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.707961/full#refer1>
- Wang, Y. J., Wu, Q., Wang, Y., & Wang, P. C. (2022). *The effects of physicians' communication and empathy ability on physician-patient relationship from physicians' and patients' perspectives*. Retrieved June 24, 2022, from <https://link.springer.com/content/pdf/10.1007/s10880-022-09844-1.pdf>

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Other References

- China's National Development and Reform Commission. (2006). *Notice on printing and distributing the Opinions on Further Rectifying the Pricing of the Drug and Medical Services Market* ([2006] No. 912).
- China's National Health and Family Planning Commission, China's Ministry of Finance, China's State Commission Office of Public Sectors Reform, China's National Development and Reform Commission, China's Ministry of Human Resources and Social Security, China's State Administration of Traditional Chinese Medicine, & Health Care System Reform Office of China's State Council. (2017). *Notice on the comprehensive reform of public hospitals* ([2017] No. 22).
- General Office of China's State Council. (2012). *Major arrangement on deepening health care system reform* ([2012] No. 20).
- General Office of China's State Council. (2015). *Guiding opinions on a comprehensive pilot reform in urban public hospitals* ([2015] No. 38).