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Effect of healthcare professionals' perceived occupational stigma on organizational citizenship behavior: a moral cleansing perspective



Ganli Liao^{1*}, Jianfeng Liu¹, Yi Li², Hongyi Ye¹ and Jiayi Liang¹

Abstract

Background Occupational stigmatization in Chinese healthcare institutions has intensified due to negative public events (e.g., kickbacks, bribes, and patient conflicts). While previous studies have mainly focused on the negative effects of stigma on practitioners' physiological and psychological states of practitioners with low prestige, little attention has been given to the moral psychological mechanisms involved or the potential positive outcomes. This study aims to explore the moral mechanisms of healthcare professionals' perceived occupational stigma on organizational citizenship behavior (OCB), with a specific focus on the potential effects of moral credibility loss, moral sensitivity, and occupational prestige.

Methods This study employed a hierarchical regression method to test the theoretical model, using data from 554 healthcare professionals (including 311 physicians and 243 nurses) from 7 hospitals in China. Confirmatory factor analysis, hierarchical regression, bootstrapping analysis (= 5000 times) and simple slope test using SPSS and AMOS were employed.

Results The empirical results demonstrate that healthcare professionals' occupational stigma enhances OCB by increasing moral credibility loss, with moral sensitivity playing a moderating role. Additionally, this study categorizes healthcare professionals into two groups based on occupational prestige: physicians (high occupational prestige) and nurses (relatively lower occupational prestige). The findings indicate that occupational prestige not only moderates the positive relationship between occupational stigma and moral credibility loss but also moderates the relationship between moral credibility loss and OCB.

Conclusions This study comprehensively explores healthcare professionals' occupational stigma and reveals its positive moral effects, specifically in enhancing OCB through the moral cleansing perspective. These findings offer a novel understanding of occupational stigma, providing practical guidance for improving professional ethics and OCB.

Keywords Perceived occupational stigma, Moral credibility loss, Moral sensitivity, Occupational prestige, Organizational citizenship behavior

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Introduction

Background

Within the intricate division of labor, a multi-layered, multidimensional complex system has gradually formed for the comprehensive evaluation of occupations. This evaluative framework allocates specific societal functions to each occupation, accompanied by a more nuanced observation and assessment by society. The evaluations of occupations no longer solely revolve around the nature of the work and economic returns but place greater emphasis on the professional ethics, moral standards, and societal responsibility contributions of practitioners [1]. As a result, occupations that fail to meet these evolving societal expectations or whose practitioners are perceived as falling short of these ethical and moral standards are increasingly subject to occupational stigma. Especially in recent years, media influence, personal experiences and biases, globalization, and technological development have further intensified this impact. For example, the media plays an important role in shaping the public's perception of the profession. Negative media coverage can exacerbate discrimination against certain professions. In addition, individuals may develop biases because of negative experiences related to one occupation, and this bias may affect their perceptions of other occupations.

Therefore, occupational stigma has become increasingly noticeable [2, 3], referring to the negative prejudice and discrimination directed at certain professions or their practitioners. This stigma often arises from public perceptions shaped by ethical concerns, misconceptions, or exaggerations about specific occupations or industries [4–7]. It can manifest in various forms, including reduced employment opportunities, hindered career advancement, and diminished social respect. Occupational stigma can also take on different dimensions, such as physical associations (e.g., sanitation workers linked to waste disposal), social perceptions (e.g., foot therapists stigmatized due to their clientele), and moral judgments (e.g., ticket scalpers facing censure for illegal or unethical activities) [8, 9]. Perceived occupational stigma encompasses the awareness of practitioners facing discrimination, exclusion, and derogation from the public, exerting a notable impact on the psychological and behavioral facets of these professionals, such as emotional exhaustion, intention to leave and deviation behavior [10, 11]. Initial investigations into perceived occupational stigma predominantly concentrated on individuals characterized by "so-called" low occupational prestige or "dirty work", such as slaughterhouse workers, private security officers, and service employees [8, 12-16]. However, an increasing number of scholars has acknowledged that occupational stigma extends beyond professions traditionally associated with low-prestige. Even esteemed professionals, such as teaching staff, police officers, and academic scientists, are often subjected to stigma, including accusations of "taking kickbacks", "accepting bribes", and "academic misconduct" [17–19].

This stigmatized phenomenon is notably evident in China's healthcare institutions, where healthcare professionals, encompassing both physicians and nurses, grapple with the challenges stemming from occupational stigma [20, 21]. This stigma emerges from multiple sources, including public scrutiny, evolving societal expectations, and systemic issues in the healthcare system. Specifically, some ethical lapses and misconduct incidents within the profession contribute to negative perceptions, while a significant portion of the stigma arises from public misunderstandings of healthcare professionals' duties and constraints [22]. Although the individual misconduct or misunderstandings are unlikely to directly result in the overall "stigmatization" of the healthcare professionals, negative social events, such as frequent medical accidents, intense doctor-patient conflicts, indifferent diagnostic practices, overemphasis on treating minor ailments, and inappropriate medical systems, can progressively shift "individual labels" into "collective labels". This transformation may contribute to the perception of stigma toward the entire healthcare industry.

Current research on the occupational stigma among healthcare professionals remains insufficient, with the majority focusing on the negative consequences. For instance, the perceived occupational stigma among healthcare professionals may lead to decreased job satisfaction, increased occupational burnout, and the emergence of mental health issues [23–25]. Negative perceptions from patients or the public may make healthcare professionals feel discriminated against and disrespected, impacting their overall work experience. Studies indicate that stigma perception can also result in stress reactions among healthcare professionals, such as anger, frustration, anxiety, and defensive psychological responses [26], further negatively affecting teamwork and patient relationships [27]. However, few studies have explored the positive outcomes associated with the occupational stigma. Several researchers proposed that individuals may respond to stigma perception with a more diligent and responsible approach to their work, attempting to repair their professional image through positive behaviors [28]. Therefore, the complex nature of stigma may motivate healthcare professionals to engage in behaviors aimed at rebuilding public trust and professional dignity. When healthcare professionals perceive stigma, they may intensify their commitment to professional ethics and standards to counteract negative public impressions of their occupation. This positive response may manifest in increased attention to patient needs, the delivery of higher-quality medical services, and even participation

in community services. Thus, the perceived occupational stigma may not always lead to negative consequences. Some healthcare professionals may respond to occupational stigma with positive behaviors.

To further investigate the complex dynamics of occupational stigma among healthcare professionals, it is essential to explore how such stigma may influence their proactive work behaviors, particularly organizational citizenship behavior (OCB). OCB is defined as discretionary, extra-role behaviors that are not formally rewarded but contribute to organizational effectiveness [29–34]. For healthcare professionals, OCB may involve behaviors such as providing additional care or guidance to patients beyond their prescribed duties, fostering a supportive work environment, or voluntarily contributing to organizational goals [35-38]. This is expected to reduce overall management costs and enhance the hospital's service efficiency. Previous studies indicate that the negative emotions and cognition of healthcare professionals, such as organizational injustice, low job satisfaction, strained doctor-patient relationship, and unethical climate significantly reduce their OCB [39–41]. There is limited understanding of how external societal factors, like perceived occupational stigma, interact with internal professional motivations to shape these behaviors, particularly within the healthcare context.

Based on these, this study aims to address the following questions. How does perceived occupational stigma impact healthcare professionals' engagement in OCB? What is the underlying mechanism between these two factors? To answer these questions, this study introduces the moral cleansing theory as a explanatory framework. Moral cleansing theory emphasizes that individuals strive to restore a positive self-image when confronted with perceived moral or ethical inconsistencies [42, 43]. Applied to healthcare professionals, the theory suggests that stigma may not only generate defensive responses but also motivate efforts to re-establish professional integrity through enhanced commitment to patient care, organizational cooperation, and ethical standards. By integrating moral cleansing theory into the analysis, this study aims to provide a widely understanding of the relationship between stigma perception and proactive professional behaviors, advancing both theoretical and practical insights [44].

Theory and hypotheses

The relationship between occupational stigma, moral credibility loss, and OCB

In the field of professional ethics, moral credibility is commonly used to illustrate how individuals, under moral pressure, undertake positive actions to repair their moral image and align with societal expectations [45]. Healthcare professionals often experience occupational stigma when their profession does not meet the public's high moral expectations. Such stigma labels them as symbols of immorality, resulting in feelings of guilt and shame that weaken their occupational identity and amplify their sense of moral credibility loss. These emotional and cognitive responses drive a heightened need to restore their moral standing in society, and these heightened needs lead to OCB. When individuals perceive themselves engaging in unethical behavior, they will perceive "moral credibility loss" on their "psychological account of moral judgment" [46]. Then, they will strive to maintain moral consistency by undertaking a series of moral behaviors, such as participating in volunteer activities, dedicating time and resources, and strengthening commitment to moral norms [47]. Through these actions, individuals endeavor to purify their moral image and alleviate the inner discomfort arising from the inconsistency with moral standards [43, 48].

This study proposes that the perceived occupational stigma among healthcare professionals enhances OCB by increasing moral credibility loss, which serves as a mediating role. On one hand, according to the moral cleansing theory, when healthcare professionals perceive occupational stigma, this inconsistency between self-perception and societal standards may lead to a sense of moral credibility loss. Specifically, the public generally holds healthcare professionals to high moral standards. If the healthcare professional group fails to meet these expectations, the public may perceive ethical issues within the profession, leading to the labeling of healthcare professionals with stigma and becoming a symbol of immorality. The perception of immorality prompts changes in both emotional and cognitive aspects. Emotionally, perceived occupational stigma decreases their occupational identity [49], leading to negative moral emotions such as guilt and shame [8, 50]. The guilt and shame could further increase the perception of moral credibility loss. On the other hand, the moral cleansing theory holds that when individuals experience moral conflicts or realize their moral deficiencies, their inner moral balance is disrupted, and this imbalance can trigger a motivation for individuals to restore and purify their moral image. This motivation prompts individuals to engage in compensatory moral behaviors to make up for the previous moral "stain". This study suggests that the moral credibility loss experienced by healthcare professionals will propel them to adopt moral behaviors, thereby aiding in their recovery from occupational stigma. OCB, in fact, is one kind of typical moral behavior. For example, healthcare professionals actively participate in community organizations by disseminating medical knowledge and engaging in social services, demonstrating their moral values and seeking to restore their moral image [37]. Therefore, healthcare professionals are inclined to undertake more proactive and responsible actions. This involves engaging with patients and colleagues with enhanced honesty and integrity, promoting effective communication with patients, families, and fellows, addressing patient needs attentively, offering information and support, and fostering strengthened physician/nurse-patient relationships, an embodiment of OCB. Thus, we propose that:

Hypothesis 1 Healthcare professionals' perceived occupational stigma is positively related to moral credibility loss.

Hypothesis 2 Healthcare professionals' moral credibility loss is positively related to OCB.

Hypothesis 3 Moral credibility loss mediates the relationship between perceived occupational stigma and OCB.

Moderating effect of moral sensitivity between occupational stigma and moral credibility loss

The theory of personality traits proposes that personality refers to the differences in individual characteristic patterns of thinking, feeling, and behavior, which reflect individual specificity [51]. In terms of occupational stigma, the differences in a certain personality trait among individuals may lead to significant differences in their reactions and feelings towards the same occupational stigma. Moral sensitivity refers to an individual's responsiveness to moral issues and ethical standards, serving as a personal trait that measures whether an individual can discern and prioritize moral concerns [52]. Individuals with high moral sensitivity place greater emphasis on moral norms, values, and ethical principles, making them more prone to perceiving and eliciting strong emotional and cognitive responses to moral transgressions [53].

For healthcare professionals, high moral sensitivity means being more attentive and responsive to medical ethics, patient rights, and moral norms in medicine [54]. This involves an increasing concern for aspects such as respecting patient privacy, providing impartial and unbiased medical services, and adhering to professional medical ethics. When facing moral dilemmas, they will exercise greater caution and prioritize alignment with medical ethics. Hence, higher moral sensitivity among healthcare professionals may increase moral credibility loss in the face of occupational stigma. Their increased focus on medical ethics and heightened sensitivity to external moral judgments make them more susceptible to viewing occupational stigma as a direct threat to personal moral reputation. During the Covid-19 epidemic, healthcare professionals were often misunderstood and stigmatized by some people. Those with high moral sensitivity deeply felt the damage this stigmatization caused to the moral image of the entire medical community. They perceived it as questioning the profession's longstanding reputation for saving lives and helping the injured, resulting in a strong sense of moral credibility loss. In contrast, healthcare professionals with low moral sensitivity were less affected by the moral implications of this stigmatization. They tended to focus on their actual work tasks and were less concerned about external moral evaluations. This suggests that higher moral sensitivity amplifies the impact of perceived occupational stigma on moral credibility loss, playing a crucial role as a moderating variable. Thus, we propose that:

Hypothesis 4 Moral sensitivity moderates the relationship between perceived occupational stigma and moral credibility loss.

Moderating effect of occupational prestige

Prevailing research on occupational stigma and ethical morality has predominantly concentrated on low occupational prestige groups [10, 16]. Limited research has been conducted on perceived occupational stigma within high-prestige professions [55]. Some scholars argue that due to the positive correlation between occupational prestige and the social hierarchy of practitioners, the contrast between high occupational prestige and perceived occupational stigma is more conspicuous compared to those with low occupational prestige [48]. Therefore, healthcare professionals with higher prestige may experience greater psychological disparities and social cognitive conflicts, thereby intensifying the impact of perceived occupational stigma on moral credibility loss. Furthermore, as the moral credibility loss strengthens, they are more likely to engage in OCB to maintain a moral image consistent with their "occupational prestige", thus enhancing the moral cleansing effect and promoting OCB. At this time, the occupational prestige of healthcare professionals becomes another crucial moderating variable. In sum, occupational prestige serves as a dual moderator: It deepens the impact of stigma on moral credibility loss and strengthens the link between moral credibility loss and OCB, amplifying the moral cleansing effect. Thus, we propose that:

Hypothesis 5 Occupational prestige moderates the relationship between perceived occupational stigma and moral credibility loss, that is, compared to individuals with low occupational prestige, those with high occupational prestige experience a stronger positive impact of perceived occupational stigma on moral credibility loss.

Hypothesis 6 Occupational prestige moderates the relationship between moral credibility loss and OCB, that is, compared to individuals with low occupational prestige, those with high occupational prestige experience a stronger positive impact of moral credibility loss on OCB.

Summary

The main research question of this study is: how does healthcare professionals' perceived occupational stigma influence their OCB, and what are the underlying mechanisms and boundary conditions? Building on the moral cleansing theory, the theoretical model is developed (as shown in Fig. 1). This study aims to uncover key phenomena, stimulate reflection, and provide insights for enhancing healthcare professionals' ethics and OCB. Therefore, this study makes the following contributions. Firstly, it applies the moral cleansing theory to healthcare professionals' occupational stigma, offering a new perspective by highlighting its positive effects. This not only introduces a new domain for the application of the theory but also broadens its understanding within the realms of organizational behavior and medical ethics. Secondly, this study deepens our understanding of the mechanisms linking occupational stigma to OCB by investigating the mediating role of moral credibility loss among healthcare professionals. Thirdly, it expands the scope of the relationship between occupational stigma and OCB by examining the moderating effects of moral sensitivity and occupational prestige, thus broadening the research framework from both personal traits and social hierarchy perspectives.

Method and statistical analysis

Sample and collection

We employed on-site explanations and questionnaire surveys in several public healthcare institutions in China for data collection. This approach ensured that participants fully understood the purpose and procedures of our research. Especially, for hypothesis 5 and 6, which aims to examine the moderating effect of occupational prestige, we need to differentiate the occupational prestige of healthcare professionals. In China, the public generally tends to prioritize the professional knowledge of physicians, often perceiving the competence of nurses as relatively lower. This may be due to various factors such as history, education, and social cognition. Firstly, in traditional Chinese beliefs, "physicians" are considered as "decision-makers" who have a high degree of autonomy and are able to make judgments on medical conditions. And nurses are seen as "assistants" to physicians. Secondly, physicians usually require a longer period of higher education, and there are differences in curriculum design and academic depth, which can also affect the public's evaluation of nurses' professional abilities. Then, when reporting medical events, the media often focuses more on reporting on physicians' diagnoses, with nurses appearing as auxiliary roles. This kind of social opinion orientation makes the public have a deeper impression of the profession of physicians. Additionally, nursing is commonly associated with a female-dominated profession, and traditional gender stereotypes may contribute to undervaluing these occupations, influencing their occupational prestige. In China, nurses may receive lower salaries and benefits compared to physicians, potentially leading to inequalities that could impact perceptions of the nursing profession. Therefore, this study selects physicians and nurses as representative samples of healthcare professionals. Following the principle of similarity in the comparative sample, nurses are considered highly similar to physicians but with significantly lower occupational prestige. Therefore, in the measurement of occupational prestige, physicians are categorized as the high



Fig. 1 The theoretical model

occupational prestige group (=1), while nurses represent the relatively low occupational prestige group (=0).

In the data collection process for the physician sample, we reached out to the human resources departments of seven hospitals in Beijing, Jiangxi, and Guangdong provinces in China. After explaining the purpose of this research and obtaining consent from the participants, we conducted on-site explanations and distributed guestionnaires. The questionnaires were administered to all frontline physicians from three Class A hospitals and four Class B hospitals. The measured variables included perceived occupational stigma, moral credibility loss, moral sensitivity, and OCB. The sample collection spanned four months (April to August, 2023). A total of 400 questionnaires were distributed to the physician sample, and all were collected. After excluding responses with missing values exceeding 10%, short response times, and those showing obvious response biases, we obtained 311 valid questionnaires, resulting in a response rate of 77.5%. For the nurse sample, we adopted the same approach (faceto-face explanations, on-site distribution, and immediate retrieval) to collect data from three hospitals in Beijing and Jiangxi provinces. The measured variables also included perceived occupational stigma, moral credibility loss, moral sensitivity, and OCB. The sample survey lasted for three months (June to September, 2023). A total of 300 questionnaires were distributed, and 243 valid questionnaires were collected, achieving a response rate of 81.3%. The demographic distribution of the samples, including the gender, age, educational levels, and professional titles of physicians and nurses, is presented in Table 1.

Measurement

We employed various strategies to ensure the reliability and validity of our measurement. All scales were selected

Table 1 The demographic distribution of the sample

from TOP international journals with prior validation in a Chinese context. To guarantee linguistic clarity, a team of proficient researchers and medical doctoral candidates conducted an independent translation using a double-blind process to eliminate potential biases or inconsistencies. Subsequently, we invited three experts in the field of ethics to rigorously review the Chinese scale version. After two rounds of discussions, we finalized the measurement scales. With the exception of the moral sensitivity scale, a standardized Likert's 5-point scale (1 = strongly disagree, 5 = strongly agree) was used to measure all variables.

Perceived occupational stigma

This scale was originally developed by Pinel et al. (1999) [2], and then, Pinel and Paulin (2005) [7] extended its application in the workplace context, gaining widespread usage [16]. In this study, we refined the wording of the scale to better align with the work context of healthcare professionals. It includes 6 items, such as "Many individuals not engaged in medical work hold numerous negative perceptions about our profession, even if they do not express them openly" and "Many individuals not engaged in medical work find it challenging to view us impartially". The Cronbach's α for this scale was 0.929.

Moral credibility loss

This study employed the moral credibility loss scale developed by Lin et al. (2016) [47], which was subsequently revised to align with the specific work characteristics of healthcare professionals. The scale consists of 5 items, with a sample item being "Due to some healthcare professionals displaying unethical behavior, they have suffered a loss of moral credibility". The Cronbach's α for this scale was 0.911.

Variables	Categories	Percentage (Physicians)	Percentage (Nurses)
Gender	Males	54.6%	7.7%
	Females	45.4%	92.3%
Age	≤ 30	11.5%	54.1%
	(30, 40]	62.0%	24.2%
	(40, 50]	24.1%	17.9%
	(50, 60]	2.4%	1.8%
Educational levels	High school education or below	λ	23.6%
	College	λ	51.8%
	Bachelor	45.1%	17.7%
	Master	46.3%	6.8%
	Doctoral degree	8.6%	\
Professional titles	Junior	23.1%	\
	Intermediate	53.3%	\
	Associate	17.6%	\
	Senior	6.0%	\

Organizational citizenship behavior

In this study, we used a revised version of the OCB scale developed by Farh et al. (1997) [56], which was specifically adapted to the Chinese cultural context. This adaptation has been widely validated for use among healthcare professionals [57]. The scale consists of five sub-dimensions: organizational identification, which reflects the extent to which healthcare professionals align their personal goals with those of the organization; colleague coordination, which measures cooperation and teamwork among colleagues; interpersonal harmony, which emphasizes maintaining positive relationships and avoiding conflicts with others; protection of organizational resources, which involves behaviors aimed at safeguarding the organization's assets and maintaining its integrity; and professional dedication, which refers to a commitment to the job and a strong sense of responsibility toward work tasks. The scale consists of a total of 20 items, and an example item is: "Willing to assist new colleagues to adjust to the work environment." The Cronbach's α for this scale was 0.971.

Moral sensitivity

This study employed the Moral Sensitivity Questionnaire-Revised (MSQ-R) constructed by Lützén et al. (2006) [58] in the healthcare domain. Subsequently, Huang et al. (2015) [59] translated and administered the questionnaire to professionals such as physicians and nurses, finding that the scale demonstrated high reliability and validity within the Chinese cultural context. The scale comprises three sub-dimensions: moral strength, moral responsibility, and moral burden, totaling 9 items. Likert's 6-point scale was used, where "1 = complete disagreement" and "6 = complete agreement". In this study, the Cronbach's α for the scale was 0.937.

Occupational prestige

According to the research design, this study designated the group of physicians (dummy variable = 1) as practitioners with relatively higher occupational prestige, and

 Table 2 The results of descriptive analysis

the group of nurses (dummy variable = 0) as practitioners with relatively lower occupational prestige.

Descriptive analysis

This study conducted descriptive statistical analysis (Means, SDs, and Pearson correlation coefficients) by SPSS 26.0 for all variables, and the results are presented in Table 2. The mean and SD for perceived occupational stigma and moral credibility loss are 3.54 (SD = 1.11) and 3.65 (SD = 1.07), respectively, indicating that both variables are at a moderate level. The mean and SD for OCB and moral sensitivity are 3.93 (SD=0.84) and 3.97 (SD = 0.83), respectively, suggesting that healthcare professionals exhibit a relatively high level of these two variables. The perceived occupational stigma among healthcare professionals shows a significant positive correlation with moral credibility loss and OCB ($r_1 = 0.354$, $r_2 = 0.342$, p < 0.01), and a significant negative correlation with moral sensitivity (r_3 =-0.258, p<0.01). Moral credibility loss is significantly positively correlated with OCB $(r_{4} = 0.346, p < 0.01)$ and significantly negatively correlated with moral sensitivity (r_5 =-0.320, p < 0.01). These correlation results provide preliminary support for the hypotheses test in this study.

Confirmatory factor analysis

Due to the fact that the survey questionnaires in this study were all completed by healthcare professionals, there is a potential issue of common method bias (CMB). Therefore, we employed the Confirmatory Factor Analysis (CFA) method to address this concern. Since occupational prestige distinguishes between two groups, physicians and nurses, this study focused the CFA validation on the four core variables: perceived occupational stigma, moral credibility loss, OCB, and moral sensitivity. The results were performed by AMOS 26.0. As shown in Table 3, the results indicate that the fit indices for our proposed model (Four-factor model: perceived occupational stigma, moral credibility loss, moral sensitivity, and OCB) were significantly superior to those of alternative

lable 2	Table 2 The results of descriptive analysis									
Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Age	2.42	0.75	-							
2. Edu	2.22	0.83	0.475**	-						
3. Years	1.92	0.93	0.394**	0.307**	-					
4. Mari	1.73	0.68	0.291**	0.384**	0.351**	-				
5. POS	3.54	1.11	0.345**	0.378**	0.387**	0.322**	-			
6. MCL	3.65	1.07	0.317**	0.339**	0.401**	0.369**	0.354**	-		
7. OCB	3.93	0.84	0.414**	0.300**	0.349**	0.402**	0.342**	0.346**	-	
8. MS	3.97	0.83	-0.412**	-0.338**	-0.431**	-0.322**	-0.258**	-0.320**	-0.390**	-
9. OP	0.56	0.50	-0.441**	-0.500**	-0.456**	-0.433**	-0.405**	-0.420**	-0.471**	0.444**

Note: **p<0.01, POS=perceived occupational stigma, MCL=moral credibility loss, MS=moral sensitivity, OP=occupational prestige, Edu=educational level, Mari=marital status

Models	Factors	χ^2	df	χ $^2/{ m df}$	CFI	TLI	RMSEA
One-factor model	POS+MCL+MS+OCB	9656.0	740	13.0	0.537	0.511	0.148
Two-factor model 1	POS, MCL+MS+OCB	7442.4	739	10.1	0.652	0.632	0.128
Two-factor model 2	POS+MCL+MS, OCB	6645.6	739	8.9	0.693	0.676	0.120
Three-factor model 1	POS, MCL+MS, OCB	4317.3	737	5.9	0.814	0.803	0.094
Three-factor model 2	POS, MS, MCL+OCB	4296.6	737	5.8	0.815	0.804	0.093
Three-factor model 3	POS + MCL, MS, OCB	4234.2	737	5.7	0.818	0.808	0.093
Four-factor model	POS, MCL, MS, OCB	2128.6	734	2.9	0.903	0.900	0.060
Note: POS - perceived occupational stigma, MCL - moral credibility loss, MS - moral sensitivity							

Table 3 The results of CFA

Table 4 The results of reliability and validity test

Variables	Cronbach's α	CR	AVE	Square root of AVE		
Perceived occupational stigma	0.929	0.82	0.63	0.80		
Moral credibility loss	0.911	0.84	0.54	0.74		
OCB	0.971	0.87	0.57	0.76		
Moral sensitivity	0.937	0.84	0.55	0.74		

models (χ^2 = 2128.6, df=734, χ^2/df =2.9, *CFI*=0.903, *TLI*=0.900, *RMSEA*=0.060). For example, the three-factor model 1 (combined moral credibility loss and moral sensitivity into one factor) shows a poorer fit indices (χ^2 = 4317.3, df=737, χ^2/df =5.9, *CFI*=0.814, *TLI*=0.803, *RMSEA*=0.094). The CFA results suggest that there is no obvious CMB in our sample.

In addition to the CFA, we examined modification indices and conducted a multi-group analysis to ensure the model's stability across different groups (physicians and nurses). These analyses collectively provide strong evidence that there is no significant CMB in our sample, and the conceptual model aligns well with the empirical model.

Multicollinearity test

The correlation analysis in Table 2 revealed that all correlation coefficients among the variables were below 0.5, providing preliminary evidence against multicollinearity. To further validate this, the variance inflation factor (VIF) was estimated for each variable. The results demonstrated that the VIF values for perceived occupational stigma, moral credibility loss, moral sensitivity, and OCB were all below 2, well within the acceptable threshold. These findings confirm the absence of multicollinearity among the variables.

Reliability and validity

The reliability and validity of each variable were assessed by estimating Cronbach's α , composite reliability (CR), average variance extracted (AVE), content validity index (CVI), and scale-level CVI (S-CVI). As reported in Table 4, all CR values exceeded 0.8, and all AVE values were greater than 0.5, demonstrating that the measurement scales exhibited strong reliability and validity. To further ensure the content validity, we employed a panel of 6 experts who evaluated the relevance and necessity of each item. The item-level CVI (I-CVI) values for all items exceeded 0.78, and the scale-level CVI (S-CVI) was greater than 0.90, meeting established standards for content validity. Additionally, the square root of AVE for each variable was greater than the correlations between the variables, providing evidence for strong discriminant validity.

Results

This study used SPSS 26.0 to examine hypotheses through the construction of a hierarchical regression model, with results presented in the Table 5. In Model 1, after controlling for age, educational level, working years, and marital status of healthcare professionals, the relationship between perceived occupational stigma and moral credibility loss was significant ($\beta_1 = 0.143$, *SE* = 0.041, *p* < 0.01, $\triangle R^2$ = 0.260, *F* = 39.875). Hence, hypothesis 1 was supported. In Model 2, the relationship between moral credibility loss and OCB was significant $(\beta_2 = 0.130, SE = 0.033, p < 0.001, \Delta R^2 = 0.281, F = 44.168).$ Thus, hypothesis 2 was supported. In Model 3, after controlling for demographic variables and moral credibility loss, the relationship between perceived occupational stigma and OCB decreased significantly from 0.143 to 0.116 (p < 0.01). This suggests that the influence of the independent variable on the dependent variable significantly decreased after controlling for the mediating variable. Based on Baron and Kenny's (1986) [60] mediation test, moral credibility loss partially mediates the relationship between perceived occupational stigma and OCB. Therefore, hypothesis 3 was supported.

However, Hayes (2013) [61] proposed that Baron and Kenny's three-step mediation test may have some limitations. Therefore, this study further employed the bootstrapping analysis to test the mediating effect of moral

Variables	MCL	OCB	OCB	MCL
	Model 1	Model 2	Model 3	Model 4
Age	0.076 (0.063)	0.256 (0.048)***	0.243 (0.058)***	0.048 (0.060)*
Educational level	0.113 (0.058)*	0.010 (0.044)	-0.011 (0.053)	0.106 (0.054)**
Working year	0.217 (0.049)***	0.110 (0.038)*	0.087 (0.046)*	0.200 (0.047)**
Marital status	0.181 (0.065)***	0.237 (0.051)***	0.225 (0.061)***	0.174 (0.061)**
POS	0.143 (0.041)**		0.116 (0.042)**	0.144 (0.042)*
MCL		0.130 (0.033)***	0.113 (0.042)**	
MS				-0.088 (0.043)*
POS×MS				0.079 (0.039)*
R ²	0.267	0.287	0.297	0.279
ΔR^2	0.260	0.281	0.289	0.270
F	39.875***	44.168***	38.537***	30.212***

Table 5 The results of hierarchical regression analysis

Note: *p < 0.05, **p < 0.01, ***p < 0.001; POS = perceived occupational stigma, MCL = moral credibility loss, MS = moral sensitivity; the values in the brackets are standard errors (SE)

Tab	le 6	Τ	he	resu	lts	of	bod	ots'	trap	ping	anal	ysis
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Effect test	β	SE	Sig.	95% Confidence interval		
				Lower	Upper	
Total effect	0.0995	0.0327	< 0.01	0.0243	0.1528	
Direct effect	0.0873	0.0315	< 0.01	0.0254	0.1492	
Mediating effect	0.0122	0.0057	< 0.01	0.0035	0.0269	



Fig. 2 The moderating effect of moral sensitivity between perceived occupational stigma on moral credibility loss

credibility loss. This method aims to examine whether the product of $\beta_1 \times \beta_2$ is significant and whether its 95% confidence interval includes 0. The results are presented in Table 6. After sampling 5000 times, the mediating effect of moral credibility loss was significant ($\beta_3 = 0.0122$, SE = 0.0057, p < 0.01). Moreover, its 95% confidence interval was [0.0035, 0.0269], which does not include 0. Thus, hypothesis 3 was further supported.

This study further analyzed the moderating effect of moral sensitivity using the hierarchical regression model, and the results are presented in Model 4 of Table 5. After controlling the demographic variables, the interaction between perceived occupational stigma and moral sensitivity was positively related to moral credibility loss $(\beta_4 = 0.079, SE = 0.039, p < 0.05, \Delta R^2 = 0.270, F = 30.212).$ This indicates that, compared to individuals with low moral sensitivity, healthcare professionals with high moral sensitivity exhibit a stronger relationship between perceived occupational stigma and moral credibility loss. Thus, hypothesis 4 was supported. To gain a deeper understanding of the moderating effect at different levels (Mean \pm 1SD), we used Aiken et al.'s (1991) [62] simple slope test and illustrated the moderation effect graphically, as shown in Fig. 2. The higher the moral sensitivity, the stronger the positive influence of perceived occupational stigma on moral credibility loss (Simple slope $\beta = 0.574$, t = 2.598, p < 0.05); the lower the moral sensitivity, the lower the positive effect of perceived occupational stigma on moral credibility loss (Simple slope $\beta = 0.421$, t = 2.859, p < 0.01).

We conducted T-test to examine the moderating effects of occupational prestige, and the results are showed in Table 7. By assigning dummy variables of 1 (high occupational prestige: physicians) and 0 (low occupational prestige: nurses), we investigated the impact of occupational prestige on the perceived occupational stigma, moral credibility loss and OCB. The sample sizes for physicians and nurses were 311 and 243, respectively. The means and standard deviations for perceived occupational stigma, moral reputation loss, and OCB were M = 3.51, 3.65, 3.93 and SD = 1.11, 1.07, 0.84, respectively. Regarding perceived occupational stigma, the t-test indicated a significant difference in mean scores between physicians and nurses (t_1 =-10.404, p < 0.001), given the

Variables	T-test	F	Sig.	t	Sig.	95% CI	
					(two-tails)	lower	upper
POS	Homogeneity of variances	2.136	0.144	-10.404	0.000	-1.077	-0.735
	Heterogeneity of variances			-10.441	0.000	-1.076	-0.735
MCL	Homogeneity of variances	22.484	0.000	-10.885	0.000	-1.071	-0.744
	Heterogeneity of variances			-11.165	0.000	-1.067	-0.748
OCB	Homogeneity of variances	30.474	0.000	-12.545	0.000	-0.919	-0.670
	Heterogeneity of variances			-12.793	0.000	-0.916	-0.672

Table 7 The results of T-test

Note: POS = perceived occupational stigma, MCL = moral credibility loss

Table 8 The results of moderating effect test

Variables	MCL	OCB
	Model 5	Model 6
Age	0.051 (0.058)	0.223 (0.056)***
Educational level	0.069 (0.055)	-0.07 (0.053)
Working year	0.189 (0.046)***	0.056 (0.045)
Marital status	0.148 (0.061)***	0.205 (0.060)***
POS	0.119 (0.042)**	
OP	-0.178 (0.047)***	-0.278 (0.047)***
POS×OP	0.126 (0.039)**	
MCL		0.068 (0.042)
MCL×OP		0.116 (0.041)***
R ²	0.298	0.336
ΔR^2	0.289	0.328
F	33.087***	39.539***

Note: *p<0.05, **p<0.01, ***p<0.001; POS=perceived occupational stigma, MCL=moral credibility loss, OP=Occupational prestige; the values in the brackets are standard errors (SE)

homogeneity of variances ($F_1 = 2.136$, p > 0.05). Concerning moral credibility loss, the t-test revealed a significant difference between the two groups (t_2 =-11.165, p < 0.001) due to heterogeneity of variances (F_2 =22.484, p < 0.001). Similarly, the t-test for OCB indicated a significant difference between physicians and nurses (t_3 =-12.793, p < 0.001) under the condition of heterogeneity of variances (F_3 = 30.474, p < 0.001).



Fig. 3 The moderating effect of occupational prestige

Hierarchical regression models were further used to examine the moderating effects of occupational prestige, with results presented in Table 8. In Model 5, after controlling for demographic variables, the interaction between occupational prestige and perceived occupational stigma was significantly related to moral credibility loss ($\beta_5 = 0.126$, *SE* = 0.039, *p* < 0.01, $\triangle R^2 = 0.289$, F = 33.087), supporting the hypothesis 5. In Model 6, the interaction between occupational prestige and moral credibility loss had a significant positive impact on OCB ($\beta_6 = 0.116$, SE = 0.041, p < 0.001, $\Delta R^2 = 0.328$, F = 39.539). Thus, hypothesis 6 was supported. The moderating effect of occupational prestige (categorized into two groups comprising physicians and nurses) was visually clarified using the simple slope analysis, as illustrated in Fig. 3. In comparison to those with low occupational prestige (Simple slope $\beta = 0.115$, t = 2.571, p < 0.05), the positive relationship between perceived occupational stigma and moral credibility loss was more pronounced for individuals with high occupational prestige (Simple slope $\beta = 0.263$, t = 4.208, p < 0.001). Similarly, in contrast to those with low occupational prestige (Simple slope $\beta = 0.053$, t = 1.676, p > 0.05), the positive relationship between moral credibility loss and OCB was stronger for individuals with high occupational prestige (Simple slope $\beta = 0.162, t = 3.622, p < 0.001$).



Discussion

Through the lens of moral cleansing theory and rigorous empirical analysis, this study systematically explores three main research objectives: to examine the mechanism through which perceived occupational stigma affects OCB in healthcare professionals; to extend the application of moral cleansing theory by exploring the moderating role of moral sensitivity; and to explore the boundary condition associated with occupational prestige. Based on these objectives, three key conclusions were drawn.

Firstly, we find that while the occupational stigma faced by healthcare professionals due to negative public perceptions, this stigma does not solely result in detrimental outcomes. Instead, it motivates them to engage in OCB, highlighting the complex dynamics of occupational stigma. Specifically, hypothesis 1 is supported, suggesting that perceived occupational stigma leads to moral credibility loss because healthcare professionals feel their moral reputation is compromised by the negative stereotypes associated with their profession. The perception of being stigmatized can trigger a moral crisis, prompting individuals to reevaluate their actions and self-image. This perceived moral loss challenges their professional identity, compelling them to restore their moral standing. Similarly, hypothesis 2 is also supported, demonstrating that this moral credibility loss serves as a driver for adopting OCB. When healthcare professionals experience moral credibility loss, they are motivated to engage in prosocial behaviors like OCB in an attempt to repair their tarnished image and to restore their moral integrity. This process of moral cleansing encourages them to demonstrate behaviors that not only benefit the organization but also allow them to regain moral balance. Furthermore, the study supports hypothesis 3, which illustrates the mediating role of moral credibility loss between occupational stigma and OCB. The results show that healthcare professionals who perceive occupational stigma often experience a loss of moral credibility, which serves as a psychological mechanism that compels them to engage in OCB. This behavior is seen as an attempt to restore their moral image and balance, demonstrating that moral cleansing can drive positive, prosocial actions in the face of stigma.

Secondly, the study also confirms the moderating role of moral sensitivity in the relationship between perceived occupational stigma and moral credibility loss, as outlined in hypothesis 4. Healthcare professionals with heightened moral sensitivity exhibit a greater awareness of ethical concerns, rendering them more susceptible to internalizing the stigma they encounter. This increased sensitivity intensifies the experience of moral credibility loss, thereby increasing the likelihood of engaging in OCB as a means of restoring their moral standing. Therefore, moral sensitivity amplifies the influence of perceived occupational stigma on moral credibility loss, underscoring its role as a significant moderator in the process of moral cleansing.

Finally, the study examines the role of occupational prestige, as addressed in hypotheses 5 and 6, revealing that it significantly influences the relationship between perceived occupational stigma, moral credibility loss, and OCB. Physicians, who possess higher occupational prestige, experience a more pronounced moral credibility loss when they perceive occupational stigma, compared to nurses with relatively lower occupational prestige. This intensified moral loss in physicians leads to a stronger positive relationship with OCB, highlighting the importance of professional status in shaping responses to stigma. The findings suggest that healthcare professionals with higher occupational prestige are more likely to engage in OCB as a means of repairing their damaged moral image, emphasizing the differential impact of stigma based on professional status.

Theoretical implications

The first theoretical implication of the study lies in challenging the predominant view on the negative effects of occupational stigma. While existing research has largely emphasized the adverse impacts of stigma-such as diminished job satisfaction, heightened burnout, and mental health challenges [3, 4, 16, 23–25, 63]—this study introduces moral cleansing theory as a novel explanatory framework to examine the potential for positive outcomes. According to this theory, individuals have a psychological need to preserve a morally consistent self-image [43] When healthcare professionals perceive occupational stigma as a threat to their moral standing, they may experience a form of moral dissonance that motivates compensatory behaviors to restore their moral credibility. Our findings are consistent with these research [64, 65]. By applying this theory, the study reveals that occupational stigma can also act as a driver for prosocial behaviors, namely, OCB. These behaviors extend beyond formal job requirements and reflect professionals' voluntary contributions aimed at improving organizational functioning and rebuilding trust with the public. This contribution not only advances the theoretical development of stigma-related research but also underscores the complexity of stigma's effects on professional behavior. It encourages scholars to consider both the detrimental and constructive outcomes, enriching the discourse in organizational behavior and healthcare management literature.

The second theoretical contribution of this study lies in uncovering the mediating mechanism through which occupational stigma influences the OCB of healthcare professionals. By introducing moral credibility loss as a mediating role, the study provides a deeper understanding of how occupational stigma triggers specific behavioral responses. While previous studies on OCB have emphasized factors like leadership styles [66, 67], emotional intelligence [68], and organizational support [69, 70], the exploration of stigma as a motivator for moral reparative behaviors remains limited [71]. By applying moral cleansing theory, this study uniquely positions stigma not only as a stressor but as a trigger for ethically aligned proactive behaviors. These findings extend prior research by identifying moral credibility loss as a pivotal psychological mechanism. This insight broadens the understanding of the moral implications of stigma and its influence on proactive behavior.

Thirdly, this study explores the boundary conditions among occupational stigma perception, moral credibility loss, and OCB. We highlight that occupational stigma was not always related to moral credibility loss and OCB. Personal traits (moral sensitivity) and job characteristics (occupational prestige) might influence the outcomes of perceived occupational stigma. This finding helps to deepen the understanding of moral cleansing theory, and illustrates the role of moral sensitivity in the process of individual moral cognition and moral restoration. This emphasizes that moral cleansing not only causes behavioral responses, but is also moderating by healthcare professionals' personal trait. Moreover, existing research on occupational stigma has primarily focused on its effects within low-prestige professions, such as sanitation workers and service employees [8, 12–16]. Our study broadens this scope by examining healthcare professionals-a group associated with relatively high occupational prestige. This shift addresses a notable gap in the literature, as prior studies have rarely examined how occupational stigma manifests and impacts behavior in prestigious professions, such as physicians, police officers, and academic scientists [17–19, 48]. Furthermore, by comparing physicians and nurses, this study highlights the influence of occupational prestige on stigma's effects. Physicians, who often bear higher societal expectations, experience greater moral credibility loss when faced with occupational stigma, compared to nurses. This contrast deepens the understanding of how occupational prestige amplifies the ethical and psychological pressures associated with stigma perception, extending previous research that predominantly focused on low-prestige professions.

Practical implications

This study puts forward the following three practical suggestions. Firstly, it is the primary task for healthcare institutions to actively explore the reasons of occupational stigma and strive to improve the status quo of stigma, especially for medical staff, a group with high occupational prestige. While this study identifies a potentially positive impact of occupational stigma, it is noteworthy that in China, there exists a substantial turnover of physicians, particularly pediatricians, coupled with an overall escalation in stress levels among medical students. The quality of healthcare is intricately linked to the national economy and the well-being of the populace. The impact of occupational stigma extends beyond the immediate effects on the existing medical system, reaching into the prospects of future development. Therefore, healthcare institutions should collaborate with medical professionals to shape the public's accurate perception of the medical industry. This can be achieved through initiatives such as public education, media campaigns, and other strategic approaches. Particularly for physicians, initiatives aimed at promoting ethical image can be implemented to emphasize the professional responsibilities and societal contributions. By establishing a transparent communication mechanism of patients, healthcare institutions can actively enhance the physician/nurse-patient relationship and effectively mitigate the perception of occupational stigma among physicians. This approach emphasizes the commitment to open and honest communication, contributing to an improved understanding between healthcare professionals and the public.

Then, healthcare institutions should intensify the moral training of medical staff to enhance their moral sensitivity. The training curriculum may encompass professional ethics, patient relationship management, and communication skills, aiding healthcare professionals in better comprehending and addressing occupational stigma. This, in turn, enhances their OCB. Moreover, mental health support and counseling services can be provided by institutions to help healthcare professionals cope with the perceived immorality associated with the perception of occupational stigma. Hence, by establishing a robust internal support system, medical staff can more effectively confront professional challenges, thereby reducing the sense of moral credibility loss.

Thirdly, cultivating a more open and inclusive culture within healthcare institutions is crucial, encouraging healthcare professionals to openly discuss their feelings and needs, particularly regarding ethnic issues. Healthcare institutions should also establish anonymous feedback channels, creating a safe space for healthcare professionals to express their views and share experiences related to occupational stigma perception. This open communication atmosphere fosters trust among staff, enhancing the moral sense of medical professionals and subsequently promoting OCB.

Limitations and future directions

The study has several limitations that need to be considered. Firstly, the generalization of the findings may be constrained as the research predominantly focused on front-line physicians and nurses. The applicability of the conclusions to other professions, such as psychologists, rehabilitation therapists, pharmacists, etc., may be limited, given potential variations in perceived occupational stigma and moral cognition. Future research should extend its focus to diverse healthcare professionals to comprehensively understand the distinct characteristics and influencing mechanisms. Secondly, the study was conducted within the cultural context of China. Crosscultural differences could impact perceived occupational stigma and moral credibility loss. The sample predominantly originated from specific regions or cultural backgrounds, challenging the generalization of the research findings across different cultural environments. Future investigations could adopt a cross-cultural research design to examine the moderating effects of culture on the relationship between perceived occupational stigma and OCB. Thirdly, the study employed self-report surveys as a data collection method, introducing the possibility of self-report bias despite efforts to mitigate it through methods like on-site explanations. Respondents may be influenced by social expectations and engage in self-presentation. Future research could explore diverse data collection methods, such as on-site observations and interviews, to mitigate self-report bias and enhance the credibility of research results.

Conclusions

Drawing on moral cleansing theory, this study explored the complex relationships among occupational stigma, moral credibility loss, and OCB in healthcare professionals. This study employed a robust theoretical framework and rigorous quantitative methods to validate the proposed model. The findings reveal that occupational stigma, while presenting significant challenges, can also inspire proactive behaviors such as engaging in OCB through the mediating role of moral credibility loss. The moderating roles of moral sensitivity and occupational prestige further underscore the mechanisms underlying these relationships.

By explicitly stating the methodological rigor and theoretical contributions, we aim to better connect our findings with practical applications and academic advancements in the field. Especially, it provides important insights for healthcare policymakers in China. Addressing occupational stigma should go beyond merely alleviating its negative effects to recognizing its potential to drive positive organizational behaviors under certain conditions. Enhancing the social recognition and professional respect of healthcare workers, addressing disparities in occupational prestige between physicians and nurses, and offering targeted support to cope with moral credibility loss are crucial steps to create a supportive and equitable healthcare environment. These Page 13 of 15

actions not only benefit individual well-being but also contribute to improved organizational performance and healthcare outcomes.

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Author contributions

GL designed the study, including conceptualization, data collection, editing, and funding acquisition. JL contributed to the methodology and the initial draft. YL participated in formal analysis and the review process. HY assisted with visualization, and manuscript editing. JL supported the revision process, refined the theoretical framework, and contributed to the interpretation of findings. All authors read and approved the final manuscript.

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Data availability

The datasets used and analyzed during the current study are not publicly but are available from the first author on reasonable request.

Declarations

Ethics approval and consent to participate

The research protocol received approval from the Ethics Committee of School of Economics and Management (No. EA202301019), Beijing Information Science and Technology University. The study design and ethical considerations were thoroughly examined and endorsed by the committee to ensure compliance with ethical standards, including the principles of the Declaration of Helsinki. All participants were provided with comprehensive information about the research, and their informed consent was obtained prior to their involvement. Written consent was obtained from each participant, emphasizing their voluntary participation and understanding of the study's objectives. Measures were implemented to uphold data privacy and confidentiality throughout the study. The research procedures strictly adhered to relevant guidelines and regulations, demonstrating our commitment to conducting the study ethically and responsibly.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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