JOMH
Journal of Men's Health

ORIGINAL RESEARCH

The relationship between job satisfaction and depressive symptoms in Chinese men: a moderated multiple mediation model

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Abstract

Previous studies have primarily investigated the individual characteristics or social environment as separate mediators in the link between job satisfaction and depressive symptoms. However, these earlier studies overlooked the combined effects of these factors, thus resulting in limited ecological validity. Furthermore, these studies were mainly focused on women or the general population, with comparatively less attention given to men. Therefore, in this study, we investigated the multiple mediating and moderating effects of subjective social status and marital satisfaction on the relationship between job satisfaction and depressive symptoms based on the cumulative risk model and ecosystem theory. We analyzed cross-sectional data from the China Family Panel Studies (CFPS) of 2020 and focused on a sample of 7524 male participants aged between 18 and 86 years (mean ± standard deviation; 48.21 ± 13.18 years-of-age). After controlling for health status, household registration and age group variables, we conducted mediation and moderation analyses using the macro-PROCESS program models 6 and 88 in SPSS software. Analysis showed that subjective social status and marital satisfaction concurrently and serially mediated the association between job satisfaction and depressive symptoms. The multiple mediating effects accounted for 25% of the total product. Moreover, government employment moderated the mediating effects of subjective social status ($\beta = -0.23$, $p = 0.024$) and marital satisfaction ($\beta = 0.22$, $p = 0.005$). In conclusion, this study provides an enhanced understanding of how job satisfaction contributes to depressive symptoms and offers significant insights into the prevention and intervention of depressive symptoms among adult Chinese men.

Keywords

Job satisfaction; Subjective social status; Marital satisfaction; Government employment; Depressive symptoms; Moderated multiple mediation

1. Introduction

Depression is the second most prevalent global disease after cardiovascular diseases, and affects over 300 million individuals worldwide [1]. In China, the total number of patients with depression is almost 100 million, with a prevalence between 3% and 5%, thus surpassing the global average [2]. Depression has become the second most common disease burden and the second leading cause of disability in China [3]. The prevalence of depression varies significantly in different regions, and therefore requires comprehensive evaluation on a region-specific basis [4]. China faces a unique set of specific challenges, including population aging, social norm changes, economic growth and increased feelings of loneliness [5]. These factors are especially prudent given the lasting effects of the COVID-19 pandemic and its widespread destructive impact. Research on the psychological health of different populations during the COVID-19 outbreak has identified general

anxiety [6], depression [7, 8] and post-traumatic stress disorder [9]. Furthermore, it is evident that the full impact of the COVID-19 pandemic on mental health will be significant and long-lasting [10]. This global health emergency also marked the beginning of a severe global economic recession. In previous economic recessions, the number of unemployed men significantly exceeded that of women; in terms of COVID-19, this was related to men being more engaged in industries that were heavily affected by the pandemic [11, 12]. However, traditional norms expect men to bear the family's financial pillar role, taking on greater responsibilities and providing a stable economic source for the family [13]. This role pressure may lead to excessive fatigue and anxiety in men during an economic recession; furthermore, their job satisfaction and mental health may face greater challenges.

It is also important to consider that society generally pays less attention to the mental health of men, and that men express fewer depressive emotions [14]. Men are generally expected

to display strength and stability; the expression of emotion and seeking help are seen as weaknesses [15]. These social pressures and cultural biases make it more challenging for men to seek psychological support, receive a diagnosis for their depressive symptoms and undergo treatment. Overall, under the multiple influences of economic recession, role pressure and social biases, men may face a higher risk of reduced job satisfaction.

There are still some gaps in existing research on the mechanisms underlying the relationship between job satisfaction and depressive symptoms, especially in men. However, some relevant papers and cutting-edge research provide some important clues. For example, in 2022, Zhou *et al.* [16] analyzed the impact of job stressors in the work environment on depressive symptoms from the perspective of the job demands-resources model and found that organizational and social support buffer the relationship between the two. In addition, in 2020, Gonzalez *et al.* [17] analyzed the existing literature relating to job stress and medicine and found that job control and the regulation of cognitive ability mediated the positive relationship between job demands and mental health (*i.e.*, depressive symptoms). In 2019, Nauman *et al.* [18] applied the Conservation of Resources (COR) theory to study the potential mechanisms by which workplace bullying (WB) affected the life satisfaction of employees *via* work-related anxiety and insomnia. In 2022, Almroth *et al.* [19] applied the Job Exposure Matrix (JEM) to establish a Cox regression model to estimate the association between factors such as job demands and job control, and depressive symptoms. Some researchers have approached this topic from a work-family perspective, such as Simard *et al.* [20], who explored the relationship between psychological health and job satisfaction among male employees, emphasizing the role of life meaning. Li *et al.* [21] explored the impact of job insecurity on the family domain through the mediating role of work-family conflict based on role stress theory and boundary theory. However, these earlier studies mainly focused on the individual mediating the effects of job stress, job control, life meaning, social support and work-family conflict, and neglected the joint effects of individual traits and interpersonal contexts.

In addition, the cumulative risk model and ecological systems theory emphasize that individual development results from the interaction of various individual factors, interpersonal processes and distal environmental factors. Different risk factors are not independent; rather, they are synergistic and interactive [22, 23]. Therefore, in the present study, we adopted a moderated multiple mediation model to investigate the mediating effects of subjective social status (interpersonal context) and marital satisfaction (as a family factor) on the relationship between job satisfaction (as an individual factor) and depressive symptoms among Chinese male workers, as well as the moderating role of employment nature (as a factor related to the work environment) in the mediation process.

1.1 Job satisfaction (JS) and depressive symptoms

Job satisfaction (JS) refers to the comprehensive evaluation of an individual's personal satisfaction, attitude and emotional well-being towards their overall job conditions [24]. Job satisfaction is typically influenced by a range of factors, including salary, job security, environment, working hours and opportunities for promotion [25]. As an attitude that is specifically related to work, job satisfaction is considered an essential indicator of psychological well-being in the workplace [26].

Multiple studies have demonstrated a close relationship between JS and depressive symptoms [27–29]. For example, a survey conducted among healthcare professionals in Brazil found that satisfied healthcare workers experienced lower levels of stress, anxiety and depression than healthcare workers who were dissatisfied [30]. Furthermore, some studies have focused on the relationship between depressive symptoms and specific job characteristics, such as emotional demands and work pressure. For instance, Yavas *et al.* [31] found that occupational burnout had a negative effect on an individual's psychological well-being and performance in frontline employees working in a banking environment. In another study Kiseleva *et al.* [32] described the detrimental impact of emotional exhaustion on the job performance of employees and found that specific factors, such as customer contact and emotional demands, may influence the relationship between JS and depression. In another study, Melchior *et al.* [33] demonstrated that individuals with a greater level of psychological job demands, such as excessive workload and time pressure, have twice the risk of severe depression than those with a lower level of psychological job demands. Wang and Patten associated job stress with depression, and reported that employees with high psychological demands, job insecurity, limited decision-making authority, increased physical exertion or lack of coworker support, are more prone to severe depression than others [34]. On the other hand, some studies have linked work and life together; Simard *et al.* [20] highlighted the significant role of life meaning to the enhancement of JS and the reduction of psychological distress. In other words, if an individual's work conflicts too much with his/her personal life, then that individual will certainly not enjoy his/her job anymore and become increasingly frustrated.

Despite extensive research on the relationship between JS and depressive symptoms, many studies focused on specific professions, such as doctors [27] or nurses [35]; or featured a limited number of regional samples (with data typically being collected in specific workplaces) [36]; or featured a limited sample size; collectively, these factors led to variable varying conclusions that were difficult to generalize. Adult males form the primary workforce in today's society and often bear the greater proportion of work responsibilities and burdens. However, nationwide surveys on JS among men are uncommon; consequently, there is a significant need to investigate the specific relationship between JS and depressive symptoms in men.

1.2 The mediating role of subjective social status (SSS)

The social status hierarchy is a widely recognized phenomenon and is believed to exert the health and mortality rates of social groups across all social hierarchies [37, 38]. Social status can be defined as an individual's relative position when compared

to others in society or their social background, thus encompassing different aspects of power, authority or prestige [39]. Sensitivity to status, the ability to evaluate relationships with others, and the perception of how others view us are inherent features of social human existence. From an evolutionary perspective, low social status may be perceived as a potential threat to survival, thus implying reduced opportunities for resource acquisition, mating and cooperation with others [40]. However, in the modern world, low social status may be more closely associated with symbolic self-threats and has thus become a significant source of chronic stress [37] and depression [41]. Some researchers have argued that subjective social status (SSS) derived from the pressures associated with social status [42], may exert significant impact on health to a greater extent than objective social status. Numerous studies have reported a significant association between social status and depression. For example, research conducted on Swedish adolescents revealed that individuals with a lower SSS had a higher risk of depression than those with a moderate or higher status.

On the other hand, few existing publications have investigated the association between JS and social status, particularly with regards to the specific mechanisms involved. A previous survey, conducted among Chinese nurses, revealed a positive correlation between SSS and JS but indicated a negative correlation with their inclination to leave their job [43]. In another study, Celi *et al.* [44] reported that the attitudes of workers toward their jobs depended on the social status they derive from their work and their experiences within the work environment; JS tended to be high when the economic benefits and social status of employees aligned with their expectations.

Thus, it is possible that SSS could potentially mediate the relationship between JS and depressive symptoms. Nevertheless, there is a lack of direct studies investigating the mediating role of SSS in the relationship between JS, adolescent depressive symptoms and the extent of mediation. Drawing upon these theories and empirical evidence, we propose Hypothesis 1, as follows:

Hypothesis 1 (H1): SSS mediates the relationship between JS and depressive symptoms. Specifically, JS is positively correlated with SSS, while SSS is negatively correlated with the severity of individual depressive symptoms.

1.3 The mediating role of marital satisfaction (MS)

Marital satisfaction (MS) encompasses the subjective evaluation of, and the attitudes towards the relationship, between spouses [45]. MS is an essential parameter in assessing the emotional well-being of those who are married [46]. Researchers consider that MS plays a vital role in predicting the symptoms of depression [47] and several previous studies have shown that dissatisfaction in marriage is a critical factor in the development of depression [48, 49].

On the other hand, it is also considered that the importance of marriage an individual's life may influence other aspects, such as JS [50]. When investigating the long-term relationship between MS and JS, as well as differences between genders, researchers detected a significant correlation over an extended period [51]. In particular, there was a significant correlation between an increase in MS and an increase in JS.

Therefore, we aimed to test Hypothesis 2, as follows:
Hypothesis 2 (H2): MS mediates the relationship between JS and depressive symptoms. Specifically, there will be a positive correlation between JS and MS, while MS will negatively correlate with an individual's level of depressive symptoms.

1.4 The mediating role of SSS and MS

Several studies have investigated the mechanisms underlying the relationship between SSS and MS. For instance, a nationwide survey conducted in China revealed that couples with a higher socioeconomic status tended to have lower levels of depressive symptoms. Furthermore, the study showed that when one partner had a higher socioeconomic status, the other partner also tended to have lower levels of depressive symptoms [52]. Furthermore, a study on Korean immigrants revealed that dissatisfaction with a decline in social status, particularly between spouses (especially husbands), was one of the causes of marital conflict [53]. A longitudinal study investigated the impact of a loss of income during the Great Depression on the marital relationships of 111 couples from different social classes. Economic loss resulted in a significant decline in marital quality in both middle-class and working-class families; furthermore, marital discord intensified under financial pressure [54].

In conclusion, it is possible that there may be a correlation between SSS and MS. Consequently, we hypothesized that SSS could be linked to MS and potentially serve as a mediating factor in the relationship between JS and depressive symptoms. Building upon this premise, we proposed Hypothesis 3, as follows:

Hypothesis 3 (H3): SSS and MS may serially and concurrently mediate the relationship between JS and depressive symptoms. Specifically, JS will be positively correlated with SSS, and SSS may be positively correlated with MS. MS was negatively associated with depressive symptoms.

1.5 The moderating role of government employment

In China, the government employment system differs significantly from the work environment in Western countries, particularly with regards to the institutional and cultural background [55]. Within the government system, employment refers to individuals who are officially designated by various levels of administrative agencies for administrative units and public institutions, such as civil servants, teachers, doctors, as well as formal employees in state-owned enterprises, as determined by the government labor administrative departments, excluding contract workers and dispatched workers [56, 57]. This form of employment is characterized by lifelong tenure. It is important to note at this juncture that there are also many informal personnel in these departments who are not included in the government employment system and are referred to as temporary workers. The employers are labor dispatch companies rather than the government; these two modes of employment differ significantly in terms of salary and benefits. In this research paper, we classify this as non-government

employment. These government-employed individuals are typically responsible for executing government functions and policies and provide public services [58]; these individuals enjoy a certain level of job stability, welfare benefits and administrative power [55]. Their salaries are usually higher than those of private sector employees with equivalent qualifications and experience; consequently, they enjoy a higher social reputation and status. Over recent years, entering the government employment system has become a major career goal for many Chinese university graduates; this is largely due to the economic downturn and the impact of the COVID-19 pandemic [55]. Employment within the government system can provide relatively stable work and generous welfare benefits, thus bringing a stable source of income and social status to families. These factors may exert positive impacts on marital relationships and the risk of depression. The buffer hypothesis suggests that the characteristics of the government employment system may provide employees with a stable work environment and economic security, thereby reducing financial pressure and uncertainty in marital relationships; collectively, these factors reduce the risk of depression.

In addition, government employees typically enjoy a higher social status and reputation. This may increase their self-esteem and sense of fulfillment, thereby reducing the risk of depression. However, further research is needed to validate the buffering hypothesis and investigate the mechanisms by which the government employment system can affect marital relationships and the risk of depression. Building upon this foundation, we generated Hypothesis 4, as follows:

Hypothesis 4 (H4): Among individuals employed by the government, there is a stronger association between SSS and depressive symptoms, while the relationship between MS and depressive symptoms is less pronounced. Specifically, there is a stronger association between SSS and depressive symptoms among government-employed individuals compared to those not employed by the government. Moreover, within the government-employed population, the association between MS and depressive symptoms is weaker than among those not employed by the government.

1.6 Aims of the present study

In the present study, we investigated the process model that elucidates the inverse association between JS and depressive symptoms in males. The primary objective was to gain a deeper understanding of the mediating role played by SSS and MS in the relationship between JS and depressive symptoms among adult males in China. Specifically, we focused on four specific goals: (1) the mediating effect of SSS on the relationship between JS and depressive symptoms in adult males; (2) the mediating effect of MS on the relationship between JS and depressive symptoms in adult males; (3) the sequential and simultaneous mediating effects of SSS and MS on the association between JS and depressive symptoms in adult males, and (4) the moderating effect of Government employment on the mediating effects of SSS and MS. Fig. 1 provides a visual representation of the proposed model of multiple mediation.

2. Methods

2.1 Participants

The data analyzed in this study were obtained from the China Family Panel Studies (CFPS), one of China's largest and most representative family panel research projects. The CFPS aims to investigate the changes and developments that occur in Chinese families and their relationships with various factors such as society, economy and politics, thus providing a solid foundation for academic research and the analysis of public policy [59]. Data were acquired from collaboration between the China Social Survey Center at Peking University and the Institute for Social Research at the University of Michigan, among other institutions. The CFPS conducts surveys every two years; sampling covers 25 provinces, municipalities and autonomous regions. The target sample size is 16,000 households, encompassing all family members within the sampled households. The stratified multistage sampling design of the CFPS ensures that any sample represents approximately 95% of the Chinese population [60]. We extracted the latest survey data from 2020 to construct a cross-sectional dataset for analysis. After excluding questionnaires with missing data, we finally collated data from 7524 male participants aged between 18 and 86 years (mean $\pm$ standard deviation, 48.21 $\pm$ 13.18 years-of-age) as our study sample. Demographic information is presented in Table 1.

2.2 Measures

2.2.1 Job satisfaction (JS)

Previous research has established that JS encompasses six dimensions: job income, work environment, job security, working hours, career development and overall job experience [61–63]. As part of the CFPS, participants were required to respond using a five-point Likert scale as extremely dissatisfied, dissatisfied, neutral, satisfied and extremely satisfied; this 5-point scoring method sums the scores for all six dimensions into a scale with a score ranging from 6–30. Higher scores indicated higher levels of JS. We calculated that the Cronbach's α coefficient for JS was satisfactory (0.844).

2.2.2 Subjective social status (SSS)

The assessment of SSS involved a scale developed by the CFPS in which participants rated their current perceptions of "their social status in the local community" and "the position of their income in the local community" on a 5-point scale, ranging from 1 to 5, with "1" representing the lowest and "5" representing the highest. The total score ranged from two to ten, with higher scores indicating a higher SSS. The Cronbach's α coefficient for SSS was 0.719, thus indicating high reliability.

2.2.3 Marital satisfaction (MS)

The measurement of MS utilized a specific scale developed by the CFPS which involved three specific inquiries: (1) "how satisfied are you overall with your current marriage/cohabitation life?", (2) "to what extent are you satisfied with the economic contributions made by your life partner to the household?", and (3) "to what extent are
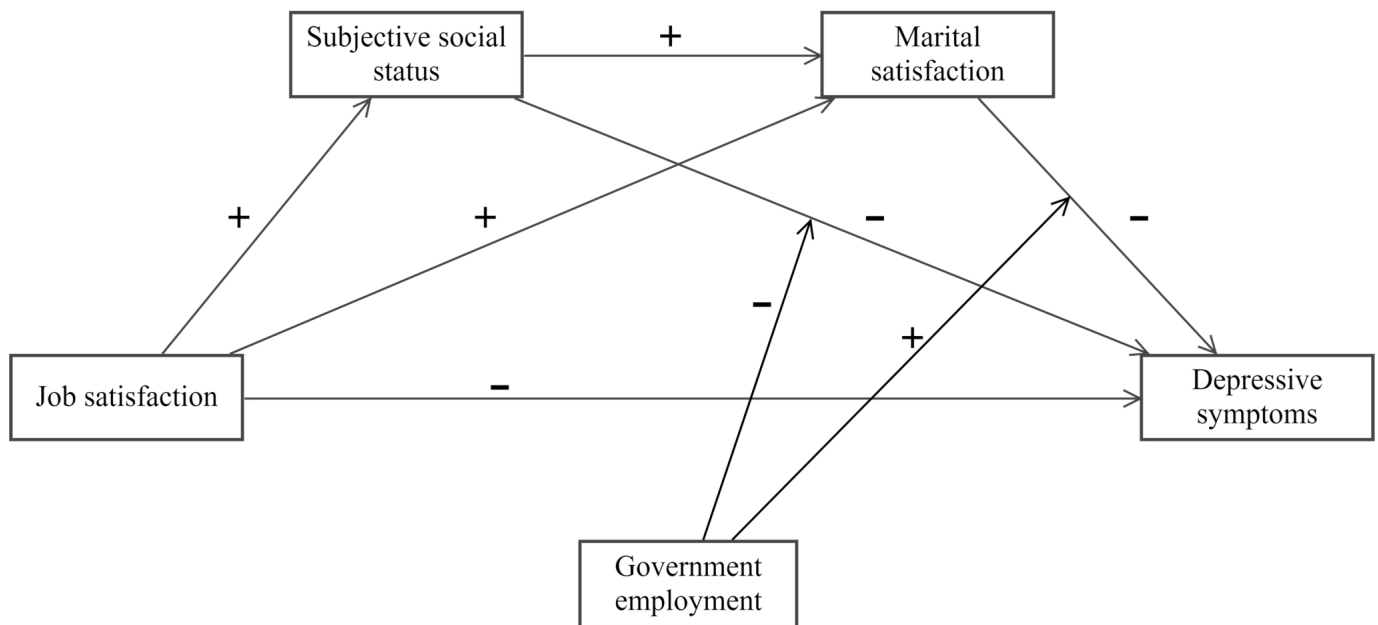
FIGURE 1. A multiple mediation model depicting the association between job satisfaction and depressive symptoms in Chinese males. +: positive correlation; −: negative correlation.

TABLE 1. Demographic information relating to control and moderator variables (N = 7524).

Variables	Distribution	Frequency	Percent (%)	Cumulative (%)
Age				
	18–29	495	6.58	6.58
	30–39	1820	24.19	30.77
	40–49	1649	21.92	52.68
	50–59	1949	25.90	78.59
	60–69	1241	16.49	95.08
	Over 70	370	4.92	100.00
Registered residence				
	Rural household registration	5595	74.36	74.36
	Non-rural household registration	1149	15.27	89.63
	Unregistered household	5	0.07	89.70
	Urban household registration	775	10.30	100.00
Health status				
	In perfect health	1236	16.43	16.43
	Very healthy	1243	16.52	32.95
	Relatively healthy	3453	45.89	78.84
	Normal	768	10.21	89.05
	Ill-health	824	10.95	100.00
Government employment				
	No	6912	91.87	91.87
	Yes	612	8.13	100.00

you satisfied with the domestic contributions made by your life partner to the household?". Participants responded on a 5-point scale, where scores of 1–5 represented extreme dissatisfaction, dissatisfaction, neutrality, satisfaction and extreme satisfaction, respectively. The scores from all items were aggregated to calculate a total MS score ranging from 3 to 15. Higher scores indicated higher levels of MS. Cronbach's α coefficient was 0.775, thus indicating a high level of reliability.

2.2.4 Depressive symptoms

Levels of depressive symptoms were determined by the Center for Epidemiologic Studies Depression Scale-8 (CES-D8) Chinese Short Version, an 8-item scale that is commonly used in epidemiological research [64]. This scale consists of six positive items and two negative items. Respondents were asked to rate each item on a 4-point scale (0 = less than one day, 1 = 1–2 days, 2 = 3–4 days, 3 = 5–7 days) based on the frequency of experiencing each mood or symptom over the previous seven days. Scores for the 4th and 6th items were reverse-coded. The final score was the sum of the item scores, ranging from 0 to 24; higher scores indicating a greater severity of depressive symptoms. The CES-D8 has been widely demonstrated to be valid and reliable for measuring depressive symptoms [64, 65]. We determined that the Cronbach's α coefficient for the CES-D8 was 0.760, thus indicating good internal consistency in the study sample.

2.2.5 Government employment

Participants were asked to rate the question "does your job fall under the government employment system?" on a 2-point scale, with 1 representing "yes" and 0 representing "no". Below this question, an explanatory note was added, as follows: "Being part of the government employment system refers to the personnel quota for various positions within government organizations, which are established and approved by authorized units to fulfill their functions. This includes administrative positions, career positions and positions within state-owned enterprises. Workers with administrative or career positions often receive their salary and benefits from government funding, while registered employees in state-owned enterprises refer to regular employees excluding contract workers and dispatched workers".

2.2.6 Control variables

Residence registration (hukou), health status and age were treated as controlled variables. In addition, residence registration was treated as a categorical variable with four categories: rural hukou, non-rural hukou, undocumented hukou and urban hukou. Health status was also treated as a categorical variable and categorized into five groups: very healthy, healthy, fairly healthy, average and unhealthy. Age was categorized into six groups: 18–29 years, 30–39 years, 40–49 years, 50–59 years, 60–69 years and 70 years and above.

2.3 Data analysis

Data organization and analysis were conducted using SPSS version 26.0 (IBM, Armonk, NY, USA) and the Hayes SPSS macro-PROCESS [66]. First, descriptive information and correlation matrices were computed. Next, PROCESS Model 6, with SSS and MS as multiple mediators, was employed to investigate the specific relationship between JS and depressive symptoms. Bootstrapping with 5000 resamples and bias-corrected confidence intervals at a 95% level were then used to test the significance of total, direct and indirect effects. Finally, PROCESS Model 88 was employed to investigate the moderating effects of gender on the mediations of SSS and MS. Non-overlapping confidence intervals indicated significant effects and $p < 0.05$ was considered statistically significant. Before formal data analysis, all variables were standardized.

3. Results

3.1 Preliminary analysis

The skewness and kurtosis of JS, SSS, MS and depressive symptoms were all <0.001, while kurtosis ranged from 0 to 0.0048. On this basis, the skewness and kurtosis values were considered to be acceptable [67]. In addition, we used the Harman single-factor test to investigate common methodological bias [68]; analysis showed that five eigen values were greater than one without rotation, and that the first factor explained 23.81% of the variance (<40%). Thus, our analyses demonstrated that common methodological bias did not significantly impact the results arising from this study.

Descriptive statistics for the control and moderator variables are presented in Table 1. In addition, Table 2 provides the means, standard deviations and correlations of the study variables. As anticipated, JS exhibited positive correlations with SSS and MS ($r = 0.36$, $p < 0.001$; $r = 0.17$, $p < 0.001$) and a negative correlation with depressive symptoms ($r = -0.20$, $p < 0.001$). Moreover, SSS exhibited a positive correlation with MS ($r = 0.16$, $p < 0.001$) and a negative correlation with depressive symptoms ($r = -0.15$, $p < 0.001$). In addition, MS was negatively correlated with depressive symptoms ($r = -0.22$, $p < 0.001$). The outcomes of our correlation analysis supported our hypotheses and provided the basis for further investigating the mediating effects among the variables.

3.2 Multiple mediation analysis

When depressive symptoms were considered as the dependent variable, collinearity analysis for JS, SSS and MS indicated tolerance values that were >0.86 and variance inflation factor (VIF) values that were <1.16. These results indicated that were no collinearity issues among the variables, thus ensuring that the mediation analysis was fair.

After controlling for household registration, health status and age group covariates, we conducted multiple mediation analysis using PROCESS Model 6 to investigate the mediating effects of SSS and MS. The outcomes of multiple mediation analysis with regards to the relationships between specific variables are presented in Table 3 and Fig. 2. Standardized regression coefficients indicated that JS was positively associated with SSS ($\beta = 0.13$, $p < 0.001$) and that SSS was negatively associated with depressive symptoms ($\beta = -0.10$, $p < 0.001$). Furthermore, JS had a positive predictive effect on MS ($\beta = 0.06$, $p < 0.001$) and MS was identified as a negative

**T A B L E 2. Correlations between different variables (N = 7524).**

Variables	M	SD	1	2	3	4	5
1. Job satisfaction	21.62	4.34	1.00				
2. Subjective social status	6.10	1.80	0.36***	1.00			
3. Marital satisfaction	13.55	2.12	0.17***	0.16***	1.00		
4. Depressive symptoms	5.07	3.91	−0.20***	−0.15***	−0.22***	1.00	
5. Government employment	0.08	0.27	0.08***	0.03	0.02***	−0.05***	1.00

*Note that "government employment" represents a dummy variable (yes = 1 and no = 0); ***$p < 0.001$. SD: standard deviation.*

T A B L E 3. The outcomes of multiple mediation analysis.

Regression model outcome variable	Predictor variable	Goodness-of-fit indices			Regression coefficient and significance	
		R	R^2	F	β	T
Subjective social status						
	Job satisfaction				0.13	28.31***
	Registered residence				−0.03	−2.74*
	Age	0.41	0.17	385.32***	0.25	16.70***
	Health status				−0.23	−13.14***
Marital satisfaction						
	Job satisfaction				0.06	9.58***
	Subjective social status				0.12	8.26***
	Registered residence	0.22	0.05	74.75***	−0.02	−1.62
	Age				0.01	0.32
	Health status				−0.16	−7.37***
Depressive symptoms						
	Job satisfaction				−0.10	−9.59***
	Subjective social status				−0.10	−3.93***
	Marital satisfaction				−0.30	−14.87***
	Registered residence	0.37	0.13	195.32***	−0.19	−8.55***
	Age				−0.10	−2.83***
	Health status				0.77	20.02***

*$p < 0.05$; ***$p < 0.001$.
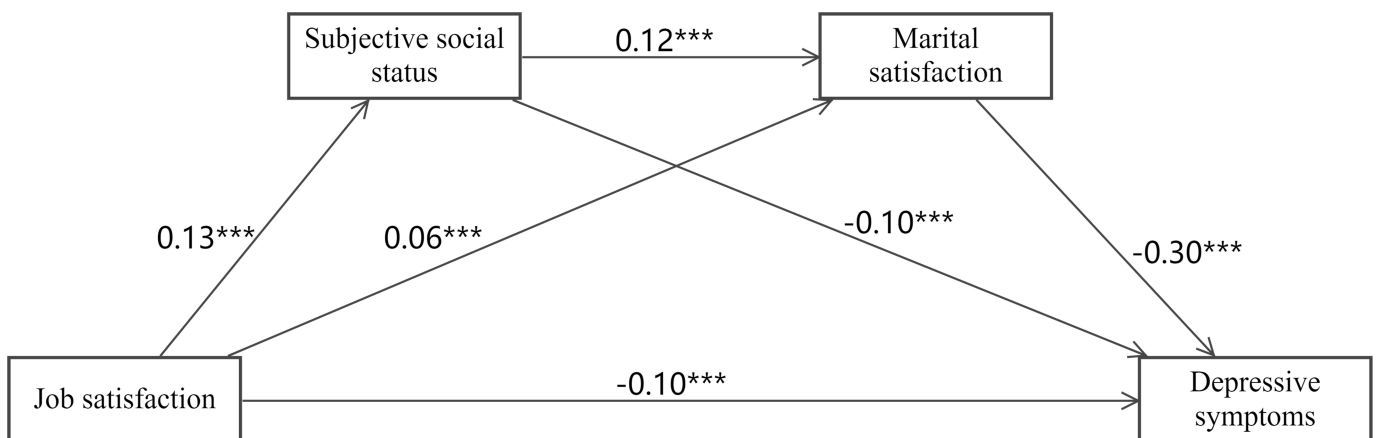
F I G U R E 2. The outcomes of multiple mediation analysis for depressive symptoms. ***$p < 0.001$. N = 7524.

predictor of depressive symptoms ($\beta = -0.30$, $p < 0.001$). In addition, SSS was positively correlated with MS ($\beta = 0.12$, $p < 0.001$).

Table 4 presents the outcomes of mediation analysis. The 95% confidence intervals for each path coefficient did not include zero, thus indicating that the total, direct and indirect effects are all significant. Analysis showed that multiple mediation effects may account for 25.5% of the total effect. Specifically, the influence of the "JS → SSS → depressive symptoms" pathway was −0.0347, thus accounting for 9.5% of the total effect. The impact of the "JS → MS → depressive symptoms" pathway was −0.0172, thus accounting for 12.6% of the total effect. The influence of the "JS → SSS → MS → depressive symptoms" pathway was −0.0046, thus accounting for 3.4% of the total effect. In summary, SSS and MS sequentially and concurrently mediated the relationship between JS and depressive symptoms.

3.3 Analysis of the moderated multiple mediation model

To investigate the moderating effect of government employment, we first controlled for household registration, health status and age groups, and then used PROCESS4 model 88 to analyze the moderating effect. The outcomes of analysis are presented in Table 5 and Fig. 3. The interaction effect between SSS and government employment significantly influenced SSS → depressive symptoms ($\beta = -0.23$, $p = 0.024$). Similarly, the interaction effect between MS and government employment significantly influenced MS → depressive symptoms ($\beta = 0.22$, $p = 0.005$). These findings provide significant support for Hypothesis 4.

Next, we conducted simple slope analysis to further illustrate the moderating effect of government employment status. As individual social status increased, depressive symptoms gradually decreased (Fig. 4). However, for participants with government employment status, the predictive effect of SSS on their depressive symptoms was more pronounced.

Fig. 5 shows that MS had a negative predictive effect on the depressive symptoms of participants, thus indicating that as an individual's MS increases, their level of depressive symptoms gradually decreases. However, for individuals with government employment status, the impact of MS on their depressive symptoms was comparatively weaker.

4. Discussion

Previous research found that life satisfaction, particularly JS [63], is associated with a range of long-term work-life conflicts [69, 70]. Compared to other types of life dissatisfaction, job dissatisfaction is known to have a stronger association with depressive symptoms [56]. However, addressing JS remains one of the most challenging issues in the workplace and social environment. Therefore, in this study, we aimed to investigate the relationship between JS and depressive symptoms and further evaluate how JS influences depressive symptoms in Chinese men. Our analysis indicated that SSS and MS play parallel or sequential mediating roles in the impact of JS on male depressive symptoms, with the nature of the employer playing a moderating role.

4.1 The mediating role of SSS

The results of this study support Hypothesis 1, highlighting the significant mediating role of SSS between JS and depressive symptoms. Previous research has emphasized the close association between an individual's evaluation of their social status and JS [43]. Individuals with a higher SSS often have better job opportunities, a higher income and better welfare benefits, thus enhancing their JS. Furthermore, a higher SSS is also associated with lower levels of depressive symptoms [42].

In addition to the overall mediating results, it is important to note the importance of each link in this mediation model. The first link in the mediation process (*i.e.*, JS → SSS) suggests a positive correlation between JS and social status. This finding aligns with previous research and can be attributed to several factors. On the one hand, individuals with a high JS typically hold essential positions within organizations and enjoy more power and resources, thus contributing to their higher reputation and status in society. This elevation in social status can enhance their self-esteem and self-identity. On the other hand, it is possible that a reciprocal relationship exists between JS and social status. A higher social status provides individuals with better working environments and opportunities, while a higher JS provides more chances and

T A B L E 4. Guided analysis of multiple mediation effects.

Effect	Effect size	Standard Error	Percentage of total effects	95% Confidence Interval	
				Lower	Upper
Total effect	−0.136	0.011	100.000%	−0.156	−0.116
Direct effect	−0.101	0.011	74.485%	−0.122	−0.081
Indirect effect(s)	−0.035	0.004	25.515%	−0.043	−0.027
JS → SSS → Depressive symptoms	−0.013	0.004	9.485%	−0.020	−0.006
JS → MS → Depressive symptoms	−0.017	0.002	12.647%	−0.022	−0.013
JS → SSS → MS → Depressive symptoms	−0.005	0.001	3.382%	−0.006	−0.003

N = 7524. Bootstrap = 5000. → = unidirectional path. JS: job satisfaction; SSS: subjective social status; MS: marital satisfaction.

TABLE 5. The analysis of moderation effects.

Regression model outcome variable	Predictor variable	Goodness-of-fit indices			Regression coefficient and significance	
		R	R^2	F	β	T
SSS						
	JS				0.13	28.44***
	Registered residence	0.41	0.17	388.56***	0.19	4.27***
	Age				0.25	16.61***
	Health status				−0.22	−13.09***
MS						
	JS				0.06	9.63***
	SSS				0.12	8.21***
	Registered residence	0.22	0.05	74.75***	0.11	1.94
	Age				0.01	0.30
	Health status				−0.16	−7.36***
Depressive symptoms						
	JS				−0.10	−9.39***
	SSS				−0.09	−3.45***
	MS				−0.32	−15.17***
	Government employment	0.37	0.14	133.71***	−1.50	−1.28
	SSS* Government employment				−0.23	−2.25*
	MS* Government employment				0.22	2.84**
	Registered residence				0.91	8.82***
	Age				−0.10	−2.93**
	Health status				0.77	20.10***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. SSS: subjective social status; MS: marital satisfaction; JS: job satisfaction.
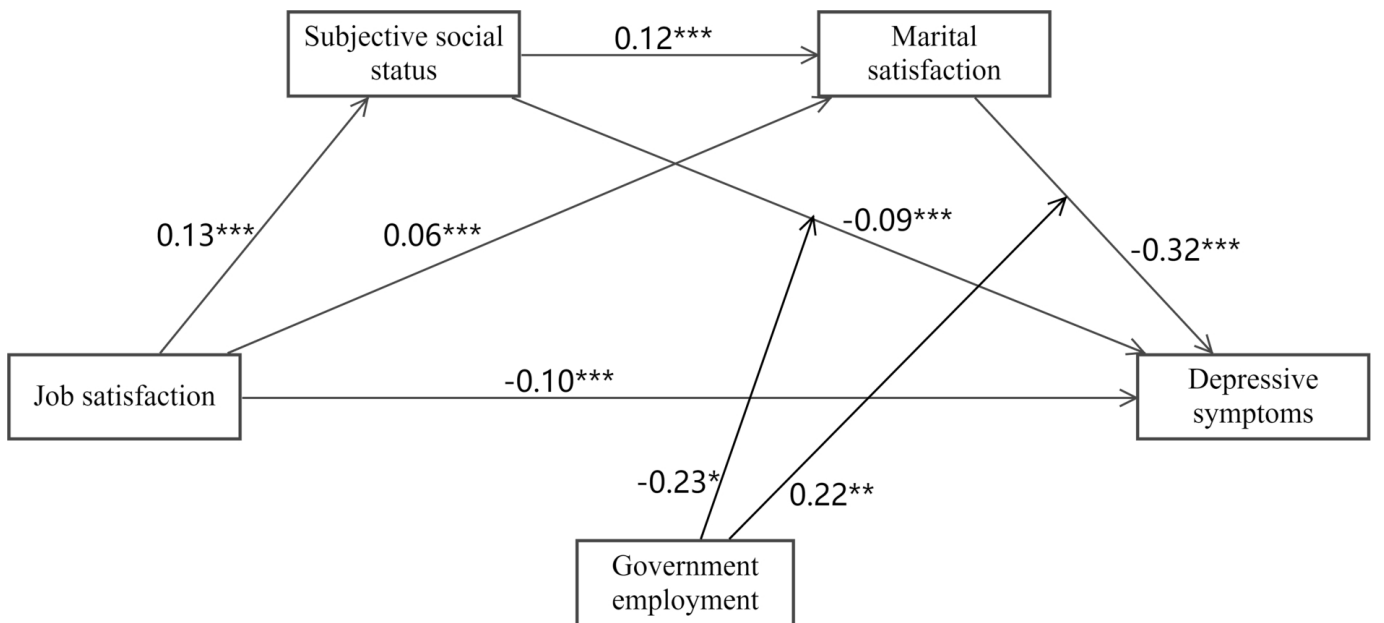
FIGURE 3. Outcomes of multiple mediation analysis with moderation for depressive symptoms. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. N = 7524.
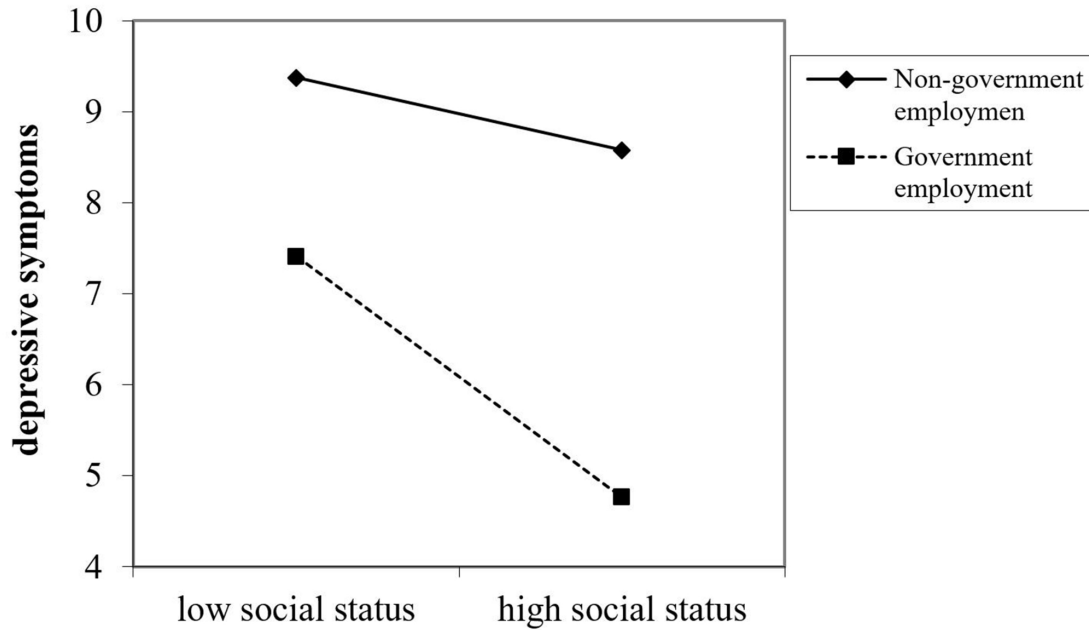
F I G U R E 4. The interaction of SSS and government employment on depressive symptoms.
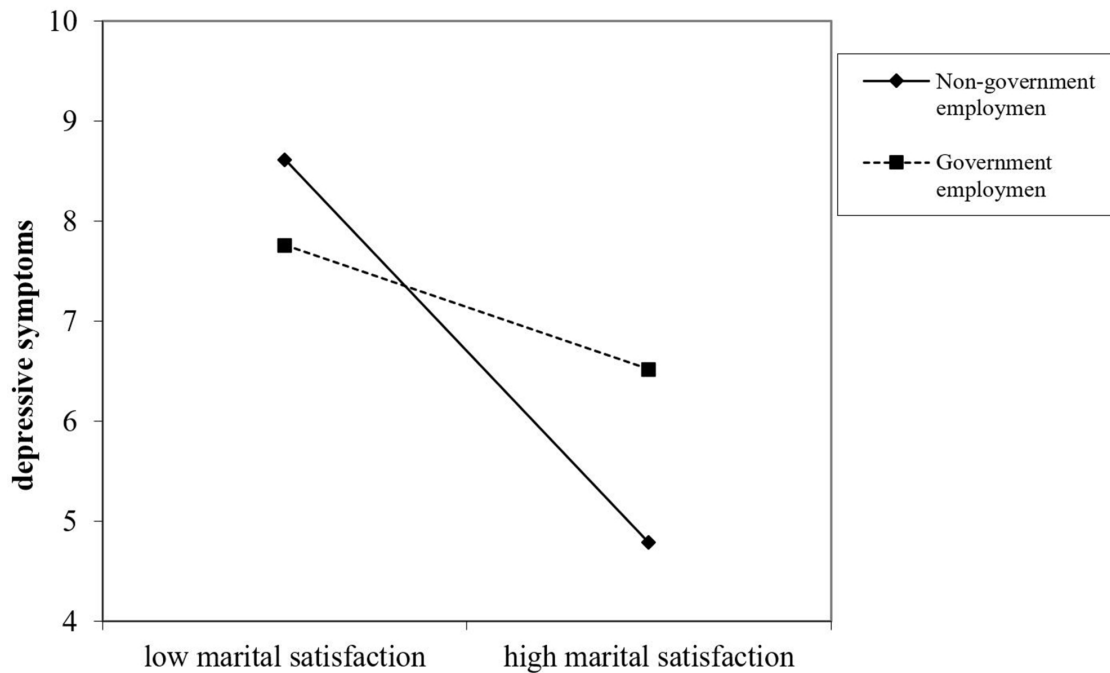

F I G U R E 5. The interaction of MS and government employment on depressive symptoms.

resources, thus elevating their social status. Therefore, it is reasonable to find that JS was negatively related to SSS.

For the second part of the mediation process (*i.e.*, SSS $\rightarrow$ depressive symptoms), our findings suggest a negative correlation between SSS and depressive symptoms. This is consistent with previous research indicating a negative association between SSS and the symptoms of depression. This phenomenon can be explained by theories associated with self-esteem [71, 72] and social support [73]. A higher social status is closely related to social recognition and support; these factors can enhance an individual's self-esteem and confidence, thus facilitating positive self-evaluation and emotional states. Moreover, individuals with a higher social status typically

have better economic conditions, educational levels and social support networks, thus providing them with more opportunities and resources to meet basic needs, to achieve self-worth, and pursue psychological well-being. Therefore, it is reasonable to assume that an increase in social status significantly predicts a reduction in the risk of depressive symptoms. As discussed above, the perceived SSS is influenced by JS and serves as an observable factor of depressive symptoms.

4.2 The mediating role of MS

Consistent with Hypothesis 2, our results demonstrated the significant mediating role of MS in the relationship between JS and depressive symptoms among adult males in China.

Specifically, we detected a positive association between JS and MS. Males with a higher JS tend to have a higher MS; this is related to lower levels of depressive symptoms. Therefore, MS may explain why males with a high JS are less likely to experience depressive symptoms.

In the first part of the mediation process (JS → MS), our findings supported the positive correlation between JS and MS. This aligns with previous research highlighting the close association between JS and MS [51]. When individuals are satisfied with their job, they often experience positive emotions and affective states that can extend to their marital relationship. JS and MS may also share common factors, including personality traits, emotional stability and coping mechanisms. Positive personal traits and adaptability are likely to contribute to satisfaction in both the work and marriage domains. We conclude that JS is highly correlated with MS because they share many common personal characteristics. Therefore, it is reasonable to find that JS was negatively related to MS. In the second part of the mediation process (MS → depressive symptoms), our research findings support the contention that MS is negatively correlated with depressive symptoms; this finding is consistent with previous studies. Previous researchers consistently emphasized the importance of MS in the prediction of depressive symptoms [47]. Marital dissatisfaction is known to contribute significantly to depressive symptoms [47, 74]. Recent research has also demonstrated a negative correlation between MS and depressive symptoms [75]. Therefore, evidence suggests that MS represents a significant protective factor against depressive symptoms [45, 75]. Considering that depressive symptoms often arise following marital dissatisfaction, it can be inferred that the lack of MS is a risk factor for depressive symptoms. As mentioned earlier, MS is influenced by JS and contributes significantly to the development of depressive symptoms.

4.3 The mediating role of SSS and MS

Our analysis indicated that SSS and MS play sequential mediating roles in the relationship between JS and depressive symptoms among adult males in China, thus supporting Hypothesis 3. It is important to note that SSS and MS were positively associated; this finding was consistent with previous research [52, 54]. Previous studies demonstrated that individuals with a higher social status are more likely to experience satisfaction in their partner relationships. This association can be explained by the resource exchange theory [76], as individuals with a higher social status may have already selected partners who are relatively more satisfying during the initial stages of mate selection [77]. Furthermore, a higher social status often implies the acquisition of more resources and opportunities, thus providing greater support and stability to partners and potentially leading to positive effects in the marital relationship [78]. These findings suggest that JS can influence depressive symptoms among adult males in China through parallel and sequential mediation involving both SSS and MS.

4.4 The moderating role of government employment

Our analysis also suggested that individuals employed within the government system showed a stronger relationship between SSS and the symptoms of depressive symptoms when compared to those working outside of the government system. In addition, these individuals exhibited a weaker association between MS and symptoms of depressive symptoms. These findings support Hypothesis 4 and further emphasizes the distinct context of the government employment system. This novel discovery makes a valuable contribution to the literature relating to SSS and mental health, and fills a significant knowledge gap in this particular population. Our study sheds light on the unique dynamics that occur within the government employment system and highlight the significance of considering occupational factors when trying to understanding the outcomes of mental health. These results provide valuable insights and pave the way for future research.

For the first part of the moderation stage (*i.e.*, the moderation of government employment on the relationship between SSS and depressive symptoms), our analysis found that government employment positively moderated the relationship between SSS and depressive symptoms. This finding indicates that men working in the government employment system typically exhibit a stronger association between SSS and depressive symptoms. The job stability, social status and career prospects associated with government employment reduce many anxieties and uncertainties. According to Maslow's hierarchy of needs theory [79], their primary physiological and safety needs along with their need for recognition are already fulfilled. These individuals then aspire to pursue higher-level needs such as status and recognition [80]. Moreover, the bureaucratic nature of the government system emphasizes the importance of social status, making the impact of perceived social status on psychological well-being more pronounced. This explains why changes in social status exhibit a more significant association with depressive symptoms levels among individuals working within the government employment system. For the second part of the moderation stage (*i.e.*, the moderation of government employment on the relationship between MS and depressive symptoms), our analysis found that government employment negatively moderates the relationship between MS and depressive symptoms. This finding indicates that the nature of employment moderates the relationship between MS and depressive symptoms. Furthermore, individuals employed by the government exhibit a weaker association between decreased MS and depressive symptoms than those employed outside of the government sector. This finding aligns with the conclusions of the protective factor model and resilience framework [81]. As a protective factor against environmental risks, individuals who work for the government employment system demonstrate greater adaptability in adverse environments and possess more psychological traits, such as optimism, tranquility and coping mechanisms. These individuals can effectively mobilize these resources and proactively respond to unfavorable circumstances. Therefore, government employment provides individuals with significant opportunities to cope with marital stress and the risk of depressive symptoms, thus enabling them to develop better psychological adaptation and resilience, thus alleviating the impact of a reduced MS on depressive symptoms.

4.5 Limitations and future directions

The present study has several limitations that should be acknowledged. First, the study design was cross-sectional, thus limiting our ability to establish causal relationships. Future research could utilize longitudinal designs to track changes in JS and depressive symptoms in individual males, further validating our findings. Second, our data relied solely on self-reported questionnaires. While the validity and reliability of these measurement methods are well-established, they are still associated with potential biases relating to self-perception or social desirability. Therefore, future research could employ more comprehensive assessment tools and collect data from multiple informants (such as friends, parents or colleagues) to enhance the accuracy of subsequent analyses. Third, this study only involved Chinese men; it is entirely possible that the psychological well-being and JS of male populations from different cultural backgrounds and countries may vary. Future research could expand the sample scope to include diverse populations and conduct cross-cultural comparisons of the relationship between psychological well-being and JS in different cultural groups, thus enhancing our global understanding of mental health in males. Finally, although this study considered certain mediating and moderating variables, it is possible that we have neglected other potential mechanisms. Investigating other important mediators and potential mechanisms associated with the relationship between JS and depressive symptoms needs to be considered in future research.

4.6 Implications

Our findings have significant implications for both theory and practice. The use of a moderated multiple mediation model provides significant enhancement in terms of our understanding of the underlying mechanisms that link JS with depressive symptoms. Our analyses identified SSS and MS as critical factors in the depressive symptoms of males, with employer nature playing a moderating role. Therefore, our findings significantly enhance our understanding of the specific relationship between JS and depressive symptoms. Furthermore, our findings support the cumulative risk model and ecosystem theory, thus emphasizing that depressive symptoms arise from the interaction between interpersonal contexts (such as SSS), various family factors (such as MS), distal environmental factors (such as employer nature), and individual factors (such as JS). This finding is crucial for the future prevention and intervention of male depressive symptoms. First, considering the negative association between JS and depressive symptoms, it is essential to prioritize the working experiences of employees and implement appropriate interventions to reduce the incidence of depressive symptoms among employees. Second, interventions should also be implemented for individuals with a low self-perceived social status or low MS to reduce their risk of depressive symptoms. For example, cognitive therapy could be used to help individuals reassess and change their negative evaluations of their social status, thereby improving self-esteem and self-confidence. Marriage counselling and family therapy could assist couples to improve communication and problem-solving skills, thus enhancing MS. In addition, distal environmental factors, such as the nature of the employer, also play a moderating role in the depressive symptoms of males. Therefore, employers should prioritize the mental health of their employees, establish positive working environments, and reduce work-related stress and the incidence of unfair treatment. Furthermore, simultaneous multiple interventions, as described above, may be more potent in terms of addressing depressive symptoms in males.

5. Conclusions

In this study, we utilized a moderated multiple mediation model and demonstrated that work satisfaction not only directly affects depressive symptoms but may also indirectly influence depressive symptoms *via* the sequential and parallel effects of subjective social status and marital satisfaction. Furthermore, lifelong employment moderates the impact of subjective social status and marital satisfaction on depressive symptoms.

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