The mediating role of job fairness and job burnout between subjective social status and depressive symptoms in Chinese migrant workers: a generational difference analysis

Yuanping Deng[1†], Jiahui Huang[2†], Juan Fang[2], Shaochang Wu[3], Yawen Zheng[3*] and Li Chen[2,4*]

Abstract

Background In China, migrant workers (MWs) constitute a significant vulnerable group that may be highly susceptible to depression. However, there is a lack of empirical research exploring the correlation between subjective social status (SSS) and depressive symptoms among MWs. The objective of this study is to examine the mediating roles of job fairness and job burnout, as well as to investigate potential generational differences in this association.

Methods A cross-sectional study was conducted in China among two groups of 1,158 MWs (response rate, 89.08%): first generation migrant workers (FGMWs) and new generation migrant workers (NGMWs). The survey assessed SSS, depressive symptoms, job fairness, and job burnout using a questionnaire. Structural equation model was used to primarily analyze mediating roles of job fairness and job burnout in the relationship between SSS and depressive symptoms, as well as to explore potential generational differences in this association.

Results The study findings indicate that SSS significantly predicted higher depressive symptoms among MWs. However, the relationship between SSS and depressive symptoms was mediated by job fairness or job burnout. Notably, the indirect effect of SSS on depressive symptoms through job burnout was significant for FGMWs, but not for NGMWs.

Conclusion This study fills a critical gap in understanding the connections between SSS, depressive symptoms, job fairness, and job burnout among MWs in China. It emphasizes the role of job fairness and job burnout as significant mediators that either worsen or alleviate the impact of SSS on depressive symptoms among MWs. Moreover, the findings suggest that the mediation differs significantly between FGMWs and NGMWs. These findings imply the need for different intervention methods to address the depressive symptoms of the two generations of MWs.

Keywords Subjective social status, Depressive symptoms, Job fairness, Job burnout, Migrant workers, Generational differences, China

†Yuanping Deng and Jiahui Huang contributed equally to this work.

*Correspondence:
Yawen Zheng
ishara0909@163.com
Li Chen
psychologychenli@163.com
Full list of author information is available at the end of the article

Introduction

China's rapid urbanization has led to an influx of migrant workers (MWs) from rural areas seeking better employment opportunities and living standards [1]. These MWs account for more than one-third of China's labor force and have made significant contributions to the country's GDP [2]. However, due to the lack of a permanent urban residence permit, known as 'hukou' [3]. MWs often face discrimination and unequal access to public services, such as housing subsidies, medical care, social security, and education [4, 5]. Consequently, MWs are at a higher risk of experiencing depressive symptoms [6], with a prevalence rate ranging from 5.08 to 69.72% [7]. The preponderance of evidence suggests that the prevalence of depressive symptoms is significantly higher among Chinese MWs compared to general population [7–12]. For instance, a study utilizing data from the 2016 China Family Panel Survey, which encompasses a large and nationally representative sample of the Chinese population revealed that migrant laborers (30% of migrant laborers) are more likely to experience depressive symptoms than urban laborers (25% of urban laborers). Additionally, mean depression scores were significantly higher among migrant laborers than their urban counterparts [8]. Zhong et al. undertook a meta-analysis, and reported that Chinese MWs experienced a greater severity of depressive symptoms than urban workers and residents [9]. Furthermore, research examining various demographic groups within mainland China, including university students [10], adults [11] and middle-aged and older adults [12], shows prevalence rates of depressive symptoms at 16.8%, 23.4%, and 24.1%, respectively. In comparison, Chinese MWs were more vulnerable to depressive symptoms. A meta-analysis of 30 studies encompassing 43,884 rural-to-urban MWs in China estimated the overall prevalence of depressive symptoms among this population to be 28%, indicating that over a quarter of these individuals experience such symptoms [7]. The depressive symptoms exhibited by MWs can lead to a range of complications that adversely impact individual quality of life [13] and may precipitate other serious health concerns, such as disability [14, 15], unsafe sexual behavior [16], self-harm and suicide [17, 18] and so on, thereby causing a reduction in work productivity and economic growth. As a result of high prevalence rates and adverse health outcomes, research focusing on associated factors and pathways of depressive symptoms in MWs is warranted.

Recently, risk factors of depressive symptoms have been widely explored in MWs research encompassing biological, environmental, social and psychological variables [7, 19]. Notably, migrant status is uniquely associated with depressive symptoms in China, largely due to the household registration system, or "hukou" system [20, 21].

In the context of rural-to-urban migration, MWs with higher levels of income or educational attainment in their hometowns may be particularly susceptible to declines in SSS following migration. Previous studies indicate that MWs often have elevated expectations regarding quality of life and reference standards after relocating to urban areas [22, 23]. A study using a nationally representative longitudinal survey dataset that tracks MWs through the migration cycle found that migration exerts a persistent negative causal effect on SSS, even after MWs return to their hometowns [23]. Another investigation revealed that SSS of MWs is relatively low and significantly lags behind their objective social status [24]. This finding is further supported by another study, which revealed that MWs experience a considerable disadvantage in SSS compared to local residents and local farmers, although MWs hold an advantage in objective social status relative to local farmers [25]. Yuan et al. found that the relative SSS of MWs using hometown villagers as a reference group was higher than that of MWs using urban residents as a reference group, and that only about 2.0% of MWs considered their SSS to be higher than that of urban residents [26].

While migration can present economic opportunities for MWs transitioning from underdeveloped regions to wealthier areas, it also exposes them to risks such as social exclusion and institutional inferiority in the host society, stemming from the stark inequalities between their hometowns and workplaces [23]. These perceived declines in social status contribute to sense of relative deprivation and unhappiness among MWs [27], leading to increased depressive symptoms. A study of immigrants in the United States, utilizing data from the National Latino and Asian American Study, revealed that a decrease in SSS was linked to higher levels of depression, thereby highlighting the potentially adverse mental health effects associated with a decline in perceived social standing [28]. SSS as a product of social comparison, reflects an individual's perception of having fair or unfair opportunities in life [29]. MWs' lower SSS may exacerbate the onset and progression of depressive symptoms, as they may perceive themselves as undervalued or discriminated against in both their work environments and the broader society [20, 30]. However, existing research has not adequately explored the relationship between SSS and depressive symptoms among MWs, particularly in the Chinese context. Therefore, this study aims to investigate this relationship among Chinese MWs.

The stress process model proposed by Pearlin provides a valuable framework for understanding the potential mechanisms underlying the pathway from SSS to depressive symptoms [31, 32]. This model distinguishes among three elements of stress: stressors (e.g., social status, life

Deng *et al. BMC Public Health*   (2025) 25:57

Page 3 of 14

events, chronic stressors), outcomes (e.g., mental and physical health problems), and mediators (e.g., cognitive appraisal, social support, coping skills, resources) [31, 33]. The theory of the stress process posits that stress is a dynamic phenomenon involving the interplay of these components, whereby stressors lead to stress outcomes through a process influenced by mediators [31–33]. In other words, SSS (i.e., a stressor) can affect depressive symptoms (i.e., outcomes) through multiple pathways. Individuals with lower SSS may experience a sense of relative deprivation and unfairness, leading to feelings of frustration, anger, and hopelessness, which can directly contribute to the development of depressive symptoms [34, 35]. Furthermore, the impact of stressors on psychological outcomes can be mediated by various factors. Job fairness (i.e., cognitive appraisal) and job burnout (i.e., the exhaustion of resources) serve as two crucial mediators that elucidate the relationship between SSS and depressive symptoms. Specifically, lower SSS may result in perceptions of unfairness in the workplace [21, 23], which can trigger negative emotions such as frustration and hopelessness, exacerbating the risk of depressive symptoms [36]. Additionally, MWs with lower SSS may experience a more pronounced mismatch between job demands and available resources [37]. Resource depletion due to job demands exceeding available coping resources may contribute to job burnout, further increasing vulnerability to depressive symptoms [38, 39]. Therefore, understanding the nexus between the SSS, job fairness and job burnout among MWs is crucial for improving their mental health.

According to the 2022 Migrant workers Monitoring and Investigation Report of China [40], the new-generation migrant workers (NGMWs) (migrants born after 1980) have emerged as the primary group of internal migrants in China, constituting 47% of the total number of MWs. When compared to the first-generation migrant workers (FGMWs), NGMWs exhibit higher levels of education and a stronger inclination to integrate into urban society [41, 42]. However, they may have a lower tolerance for demanding work [43]. Moreover, NGMWs possess more ambitious career expectations and higher aspirations for both material and spiritual fulfillment [42]. Given these notable differences, it is crucial to investigate whether the mediational model would vary between the two generations of MWs.

Despite the high prevalence of depressive symptoms among MWs and the potential influence of SSS, job fairness, and job burnout on their mental health, there is a lack of empirical research exploring these associations. To our knowledge, no study has examined the mediating roles of job fairness and job burnout in the relationship between SSS and depressive symptoms among MWs

in China. Furthermore, the potential generational differences in these associations remain unexplored. This study aims to fill these critical gaps in the literature by investigating the relationship between SSS and depressive symptoms among MWs, considering the mediating roles of job fairness and job burnout, and exploring potential generational differences in these associations. Our findings will provide valuable insights into the factors contributing to depressive symptoms among MWs and inform the development of tailored interventions to address the mental health needs of these vulnerable populations.

Subjective social status and depressive symptoms

SSS refers to an individual's self-perception of their relative position in the social hierarchy [44]. It is considered a form of "cognitive averaging" that encompasses various objective social economic status indicators, such as satisfaction with financial resources, social trust, beliefs about upcoming opportunities, acculturation, and anticipation of future security [45]. Numerous studies have shown that SSS is generally associated with depressive symptoms [18, 46, 47]. The SSS of individuals is shaped by both personal and social factors, leading to variability in SSS among individuals with the same SES [48, 49]. This association is supported by reference group theory [50], which posits that individuals tend to choose significant others as their reference groups based on frequent contact and stable social connections. When MWs migrate to cities to take up labor-intensive jobs that are typically avoided by urban residents [51], they experience a lower social status compared to urban residents. This disparity is evident in areas such as housing subsidies, medical care, social security, and education, which are not equal to those provided to urban residents [4, 5]. MWs compare themselves with local citizens facing similar situations and perceive numerous problems and difficulties, resulting in lower SSS and potential depressive symptoms. Therefore, this study proposed hypothesis H1: SSS will be negatively associated with depressive symptoms among Chinese MWs. Lower SSS is expected to predict higher levels of depressive symptoms.

The mediators of job fairness and job burnout

The primary reason for MWs relocating to urban areas is employment, which constitutes a significant aspect of their lives [52]. According to the stress process model, lower SSS can affect depressive symptoms through the mediating effects of job fairness, as a form of cognitive appraisal, and job burnout, as a manifestation of the exhaustion of resources [31–33].

First, job fairness, which refers to an aspect of organizational justice encompassing the cognitive appraisal

Deng *et al. BMC Public Health*   (2025) 25:57

Page 4 of 14

of both process and outcome impartiality [53, 54]. A large-scale continuous sampling survey conducted in China [55] and a cross-country study involving 36 nations [56] found that individuals with lower SSS were more likely to perceive distributive injustice. In China, there is a noticeable development disparity between urban and rural areas, resulting in lower social status for MWs compared to urban residents [57, 58]. Consequently, MWs tend to perceive a lower level of fairness in the workplace. According to the perceived unfairness model, perceived unfairness can detrimentally impact individuals' mental health (e.g., anxiety, depression and fear) [59]. Empirical studies have demonstrated that perceived unfairness can contribute to depressive symptoms [60, 61]. The absence of reciprocity between effort and reward, such as exerting high effort but receiving low rewards, can trigger feelings of threat, anger, and depressive symptoms, ultimately leading to long-term health consequences [62]. Therefore, this study proposes hypothesis H2: Job fairness will mediate the relationship between SSS and depressive symptoms. Specifically, lower SSS will be associated with lower perceived job fairness, which in turn will be associated with higher levels of depressive symptoms.

Another potential factor that could link SSS and depressive symptoms is job burnout. Job burnout can be understood as a consequence of resource depletion, wherein individuals exhaust their physical, emotional, and cognitive reserves in response to chronic workplace stress [39, 63]. Current research discovered that individuals who perceive themselves as having lower status tend to experience higher levels of stress and burnout compared to those who perceive themselves as having higher status [64, 65]. When MWs migrate to cities in search of survival and development, they often face limitations imposed by the urban-rural structure and their own resources. As a result, many MWs end up in low-prestige occupations, which may contribute to higher levels of job burnout. Furthermore, there is a positive correlation between job burnout and depressive symptoms. A systematic review of prospective studies conducted by Salvagioni et al. revealed that job burnout can lead to various psychological effects such as insomnia, depressive symptoms, and the use of psychotropic and antidepressant medications [66]. This finding was supported by studies conducted in Israel [67] and among coal miners in Xinjiang [68], which both found that burnout predicted an increase in depressive symptoms. Therefore, it is hypothesized that H3: Job burnout will mediate the relationship between SSS and depressive symptoms. Specifically, lower SSS will be associated with higher levels of job burnout, which in turn will be associated with higher levels of depressive symptoms.

Furthermore, according to the effort-reward-imbalance model, job burnout is caused by an imbalance between effort (e.g., extrinsic job demands and intrinsic motivation) and reward (e.g., salary, esteem, and career opportunities) [62, 69]. Research has shown that experiencing high effort and low reward at work, also known as job unfairness, increases the risk of subjective health issues, mild psychiatric disorders, and burnout [70]. A study conducted among Chinese MWs found that distributive injustice can result in emotional exhaustion, a key dimension of burnout [71]. MWs with low qualifications and limited job opportunities often face "high effort-low reward" conditions, leading to a diminished sense of fairness. Therefore, hypothesis H4 is proposed: Job fairness and job burnout will play a chain mediating role in the relationship between SSS and depressive symptoms. Lower SSS will be associated with lower perceived job fairness, which will then be associated with higher levels of job burnout, ultimately leading to higher levels of depressive symptoms.

Group comparison by different generation

It is important to consider the generational differences among MWs. Differences in the educational attainment, work motivation and future development aspirations between FGMWs and NGMWs may lead to different occupation choices and working environments [41, 42, 72]. Domestic research on MWs has shown a significant difference in SES, such as level of education, marital status, working condition, and living condition, between FGMWs and NGMWs [42, 73]. NGMWs increasingly prioritize career development prospects, and their higher educational level enhances career flexibility and improves working conditions [74]. Consequently, they may also possess a higher SSS than FGMWs. Supporting this, Zou and Deng found that the SSS of NGMWs is indeed greater than that of FGMWs [24]. SSS more accurately reflects individuals' true class experiences, while also shaping their sense of social fairness and redistribution beliefs, closely linked to personal development and overall well-being [75]. FGMWs and NGMWs have distinct work experiences and expectations that may influence the mediating roles of job fairness and job burnout. FGMWs, with their longer work experiences, may have adapted to the challenges of migrant work and have lower expectations regarding job fairness, making them more resilient to job-related stressors. In contrast, NGMWs, who are generally younger and more educated, may have higher expectations for fair treatment and better working conditions, making them more sensitive to perceived injustices [76, 77]. Previous studies on the sense of fairness among MWs have found different results, with some studies finding a higher sense of fairness among NGMWs

Deng *et al. BMC Public Health* (2025) 25:57

Page 5 of 14

[78], while others have found the opposite [79]. Additionally, the social and cultural contexts in which these generations grew up differ significantly. FGMWs' perceptions of social status and job fairness are shaped by traditional values and societal norms, while NGMWs' perceptions are influenced by contemporary societal expectations and a greater awareness of workers' rights [77]. Furthermore, no longer viewing employment as a means of survival, but rather as part of their career planning [72], NGMWs may experience less job-related stress than FGMWs. Based on the above analysis, this study proposes Hypothesis H5: There are generational differences in the mediating effects of job fairness and job burnout on the relationship between SSS and depressive symptoms.

The current study

To comprehensively understand the factors contributing to depressive symptoms among MWs, it is crucial to analyze the interplay of the above variables. This study specifically examines the link between SSS and depressive symptoms among MWs in China, proposing that job fairness and job burnout act as mediators in this relationship. Furthermore, the study will explore potential differences in these mediating pathways between FGMWs and NGMWs to account for generational variations. By addressing these research questions, the study aims to provide valuable insights into the mental health of MWs and guide the development of tailored interventions for different generations of MWs.

Method

Participant

Study setting

In this cross-sectional survey, a total of 1300 MWs were recruited in 2022 from Wenzhou, a coastal city in the southeastern province of Zhejiang, China. Wenzhou is renowned for its dynamic private economy and is a prominent destination for MWs seeking employment opportunities. The data collection occurred during the post-pandemic recovery phase, a period marked by significant global economic and labor market impacts, particularly affecting MWs in China.

Sample size determination

The sample size was calculated using the formula for survey sample size: $n = Z^{2*}\sigma^2/d^2$. The mean CES-D score and standard deviation were determined based on the previous survey of the same population [80]. The confidence level was set at 0.95, and the allowable error rate was 5%. The theoretical sample size was calculated to be 1,051 people. Considering potential invalid cases in data collection, the survey sample size was expanded to 1,300 MWs.

Research participants

The final eligible participants were selected using the stratified random sampling technique, consistent with our previous studies [81]. In stage 1, three districts in Wenzhou were randomly selected, representing the inner-city, suburban, and urban fringe zones. In stage 2, two residential sub-districts with a high density of MWs in each of the three selected districts were randomly chosen. In stage 3, a quota-sampling procedure based on five occupational clusters was used to ensure the sample's representativeness of the MWs population in China. These five clusters include manufacturing, construction, service industry, household services and Others, with proportions of approximately 27.4%, 18.7%, 18.9%, 19.2%, and 15.8%, respectively, according to the "2020 Migrant Workers Monitoring Survey Report" released by the National Bureau of Statistics of China [82]. Workplaces in these five clusters were used as the sampling units, and random sampling was conducted within each stratum to select participants in proportion to the estimated size of that sector among MWs in Wenzhou. In stage 4, eligible participants were selected from the sampling units based on the following criteria: (1) possessing a rural hukou (household registration); (2) working in an urban area without having a local hukou; and (3) being 18 years of age or older. Exclusion criteria included inability to independently complete the survey, obvious cognitive impairment, or symptoms of mental illness that could affect consent capacity or survey responses.

Hence, 1,300 MWs were eligible for the study and consent with the study procedures, and then 1,158 made valid replies, yielding a response rate of 89.08%.

Ethics statement

This study was done in compliance with the Helsinki Declaration, and was reviewed and approved by the Ethics Committee of Wenzhou Medical University (No. 2022-08).

Procedure

A pilot study was conducted with 30 rural-to-urban MWs to evaluate the clarity, comprehensiveness, and acceptability of the questionnaire. Any duplicate, vague, or inappropriate questions were revised or eliminated. In the main study, eligible participants completed the online questionnaire via WeChat, the most widely used social media platform in China. The questionnaires were administered by trained researchers, including faculty members and postgraduate students from Wenzhou Medical University, who had received systematic training prior to the formal study. All questionnaires were anonymous, and participation was voluntary for all individuals involved.

Deng *et al. BMC Public Health*   (2025) 25:57

Page 6 of 14

Measurements

Depressive symptoms

Depressive symptoms were measured by the Center for Epidemiologic Studies depressive symptoms Scale (CES-D) [83]. The CES-D consists of 20 questions regarding different aspects of depressive symptoms experienced in the past week. Respondents rate the frequency of occurrence of each question on a 4-point Likert scale: 0- rarely or none of the time (<1 day), 1-some or a little of the time (1–2 days), 2-occasionally or a moderate amount of the time (3–4 days), 3-most or all of the time (5–7 days). Higher scores indicate more severe depressive symptoms. The CES-D has good psychometric properties, with high internal consistency (Cronbach's alpha coefficients typically ranging from 0.85 to 0.90), good test-retest reliability (correlations typically ranging from 0.50 to 0.70), and strong construct validity [84, 85]. In the present survey, the Cronbach's alpha coefficient of the CES-D was 0.95, indicating that the questionnaire has good internal consistency. Factor analysis revealed that the variance contribution rate of the first factor reached 51.82%, and the factor loadings of the items were all above 0.5.

Subjective social status

The MacArthur subjective social status scale, was a self-report measure designed to assess an individual's perceived social status or social standing within their community or society. SSS was assessed on a 10- rung ladder that measures the rank of the social class (a self-anchoring scale) and ranges from 1 to 10, with higher scores indicating higher SSS. The SSS has been used in a wide range of research studies and has been found to have good psychometric properties, including good test-retest reliability (correlations typically ranging from 0.50 to 0.70), convergent validity with other measures of socioeconomic status (such as income, education, and occupation), and predictive validity for a range of health outcomes [48, 86]. The measure was used previously for Chinese populations (including rural-to-urban migrants) and have demonstrated adequate reliability and validity [87–89]. In the present study, education level and income were chosen as the criterion variables. The correlation between the SSS of MWs and education level was 0.280 ($p < 0.01$), and the correlation with income level was 0.392 ($p < 0.01$), suggesting that the validity of the test was relatively high.

Job burnout

Job burnout is measured by 3 questions: (1) job makes me feel physically and mentally exhausted; (2) working all day is stressful for me; (3) I am less and less interested in my job. The respondents rated on a 5-point Likert scale ranging from 1 (Never) to 5 (Very often). Higher scores indicate more severe job burnout. We constructed indicators of job burnout using exploratory factor analysis. The corresponding factor loadings were 0.85, 0.89, 0.74 individually. Cronbach's alpha was 0.79 and the overall Kaiser-Meyer-Olkin measure of sampling adequacy was 0.72.

Job fairness

Job fairness is measured using three questions: (1) Overall, do you think you are paid fairly? (2) Overall, do you think your workload is fair? (3) Overall, do you think your work arrangement is fair? Participants rate these items on a scale from 1 to 5, with 1 indicating complete unfairness and 5 indicating complete fairness. These questions aim to assess the extent to which MWs perceive fairness in their work tasks, pay, and work organization. A composite score was created by taking the average of the items, such that higher scores indicated a stronger perception of job fairness. We constructed indicators of job fairness using exploratory factor analysis. The corresponding factor loadings were 0.74, 0.80, 0.77 individually. Cronbach's alpha was 0.74.

Covariates

Based on the previous research [7, 80, 90], five variables among migrant population were included as covariates as follows: gender (0-male, 1-female), age, health status with 5-Likert response (1-very healthy, 5-very unhealthy), education level and satisfaction of household finances with 5-Likert response (1-very dissatisfied, 5-very satisfied).

Data analysis

Descriptive statistics including means, standard deviations, and percentages were used to summarize the demographic characteristics and key variables in the sample. Independent samples t-tests were conducted to assess generational differences in SSS, job burnout, job fairness and depressive symptoms. Bivariate correlations using Pearson's r were calculated to examine associations between the variables.

For testing the indirect effect model and its differences between FGMWs and NGMWs, structural equation modeling (SEM) was employed. The study proceeded in three steps. First, a measurement model was constructed, consisting of two latent variables. Second, the indirect effect model was tested using maximum likelihood estimation (ML) with bootstrap (5000 replicates and a 95% confidence interval). Finally, a multi-group analysis was conducted to determine differences in the indirect effect model between FGMWs and NGMWs. In Step 1, the indirect effect model was verified in both generations prior to the multigroup analysis. In Step 2, the

hypothesized structure was tested without constraining any parameters in both groups simultaneously, referred to as the unconstrained model or baseline model. In Step 3, if the baseline model demonstrated adequate fit, certain parameters (measurement intercepts and structural weights) were forced to be equal for both groups, creating the constrained model. The constrained and baseline models were then compared. If the statistical fit of the constrained model revealed a significantly worse solution (indicated by the significance of the increase in $\Delta\chi^2$ values) compared to the unconstrained model, this suggested that at least one parameter differed across groups. If multiple models yielded adequate fit, the final model was selected based on $\Delta\chi^2$, AIC, and ECVI indexes.

All analyses were conducted in R (version: 4.2.1) statistical software. Significance was determined at $p < 0.05$. Bootstrapping and moderated mediation procedures were implemented using the lavaan and mediation packages.

Results

Sociodemographics of the migrant workers
Of the 1,158 respondents, the sample consisted of 597 males (51.55%) and 561 females (48.45%). Additionally, based on the year of birth, those born in 1980 or later were categorized as the NGMWs (566 persons), while those born before 1980 were categorized as the FGMWs (592 persons). More detailed demographic information can be found in Table 1.

Preliminary analysis
Pearson correlation analyses showed that the SSS of MWs had a negative correlation with job burnout and depressive symptoms, while it showed a significant positive correlation with the job fairness. Depressive symptoms exhibited a significant negative correlation with the job fairness, but a significant positive correlation with job burnout. Additionally, gender, education level, satisfaction of household income, and health status were found to be significantly correlated with depressive symptoms. These findings are illustrated in Table 2. To identify any potential multicollinearity among the predictor variables, the variance inflation factor (VIF) was assessed. The results indicated that all VIF values were below three, suggesting that collinearity was not an issue in this study.

The mediators of job fairness and job burnout: structural equation modeling analysis
In Fig. 1, the standardized coefficient of the indirect effect model is presented. The tested model for indirect effects showed good fit statistics: $\chi^2 = 325.175$, $df = 70$, $\chi^2/df = 4.645$, $p < 0.001$, RMSEA $= 0.056$, CFI $= 0.968$, NFI $= 0.960$, TLI $= 0.952$, RMR $= 0.051$. When controlling

Table 1 Demographic characteristics of the MWs Sample ($N = 1,158$)

	N	%	M	SD
Gender				
Male	597	51.55%		
Female	561	48.45%		
Educational levels				
Primary school and below	150	12.95%		
Junior high school	475	41.02%		
High school	290	25.04%		
Associate's degree	141	12.18%		
Bachelor's degree and above	102	8.81%		
Age			40.180	11.977
Health status			2.180	0.859
Satisfaction of household finances			3.190	1.012
Subjective social status			4.460	1.669
Job burnout			7.436	3.214
Job fairness			3.260	0.882
depressive symptoms			7.212	8.335
Generation				
FGMWs	592	51.12%		
NGMWs	566	48.88%		

Note. *MWs* migrant workers, *FGMWs* first generation migrant workers, *NGMWs* new generation migrant workers

for age, gender, educational level, health status, and satisfaction of household income, SSS was found to have a significant positive relationship with job fairness ($\beta = 0.271$, $p < 0.001$) and a significant negative relationship with job burnout ($\beta = -0.156$, $p < 0.001$), but it was not significantly related to depressive symptoms. Furthermore, job fairness ($\beta = -0.103$, $p < 0.001$) and job burnout ($\beta = 0.318$, $p < 0.001$) were found to be significantly related to depressive symptoms.

The mediating effects of job fairness and job burnout were analyzed using bootstrap analysis and the results are presented in Table 3. The bootstrapped 95% confidence intervals around the standardized indirect effects were examined, and it was found that the indirect paths from SSS to depressive symptoms through job fairness and job burnout were statistically significant. Specifically, SSS had a significant indirect effect on depressive symptoms via job fairness ($\beta = -0.028$, 95% bootstrap CI [-0.047, -0.013]) and job burnout ($\beta = -0.050$, 95% bootstrap CI [-0.071, -0.030]). Additionally, SSS showed a significant indirect prediction of depressive symptoms when considering both job fairness and job burnout together ($\beta = -0.020$, 95% bootstrap CI [-0.027, -0.014]). These findings suggest that job fairness and job burnout fully mediate the relationship between SSS and depressive symptoms.

Deng *et al. BMC Public Health*   (2025) 25:57

Page 8 of 14

Table 2 Correlations for the main study variables (*N* = 1,158)

Variables	1	2	3	4	5	6	7	8	9
1.Age	1		.						
2. Gender	−0.134***	1							
3. Education level	−0.284***	0.042	1						
4. Health status	0.171***	0.028	−0.161***	1					
5. Satisfaction of household income	0.084**	−0.033	−0.198***	−0.265***	1				
6.SSS	0.088***	0.080**	0.187***	−0.160***	0.405***	1			
7.JB	−0.017	0.002	−0.173***	0.182***	−0.244***	−0.206***	1		
8.JF	0.006	−0.033	0.131***	−0.221***	0.380***	0.271***	−0.265***	1	
9.DE	−0.022	0.100**	−0.022	0.266***	−0.236***	−0.136***	0.321***	−0.196***	1

Note. *SSS* Subjective social status, *JB* Job burnout, *JF* Job fairness, *DE* Depressive symptoms

* *p* < 0.05

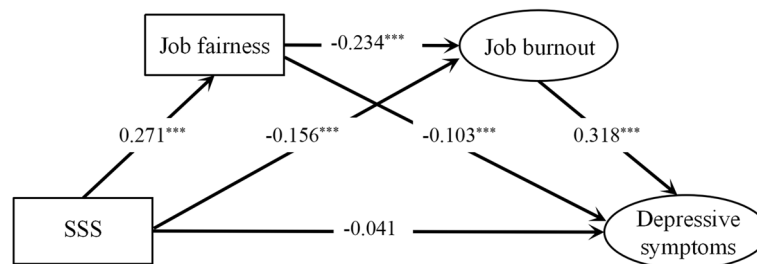** *p* < 0.01

*** *p* < 0.001, the same below

Fig. 1 Mediation model from SSS to depressive symptoms (Total sample). Note. SSS: Subjective social status

Table 3 The bootstrap confidence interval and effect size of the mediation model

Effects	Total example			FGMWs			NGMWs		
	Estimate	95%CI	*p*	Estimate	95%CI	*P*	Estimate	95%CI	*p*
Direct effects									
SSS -DE	−0.041	[−0.088, 0.020]	0.228	−0.096	[−0.165, −0.008]	0.022	0.024	[−0.043,0.087]	0.538
Indirect effects									
SSS - JF-DE	−0.028	[−0.047, −0.013]	0.007	−0.033	[−0.067, −0.008]	0.047	−0.022	[−0.045,0.005]	0.042
SSS-JB-DE	−0.050	[−0.071, −0.030]	0.010	−0.076	[−0.111, −0.052]	0.008	−0.017	[−0.047,0.004]	0.229
SSS- JF-JB-DE	−0.020	[−0.027, −0.014]	0.007	−0.026	[−0.036, −0.016]	0.012	−0.013	[−0.026, −0.008]	0.002

Note. *SSS* Subjective social status, *JB* Job burnout, *JF* Job fairness, *DE* Depressive symptoms, *FGMWs* first generation migrant workers, *NGMWs* new generation migrant workers, *CI* Confidence interval

Group comparison by different generation: multi-group analysis

The multi-group analysis was performed to examine whether the indirect effect model differed between the FGMWs and NGMWs.

First, the indirect effect model was verified in both groups. Prior to multigroup analysis (FGMWs: χ^2/df = 3.431, RMSEA = 0.052, CFI = 0.962, TLI = 0.943, NFI = 0.947, RMR = 0.056; NGMWs: χ^2/df = 2.601,

RMSEA = 0.053, CFI = 0.967, TLI = 0.968, NFI = 0.948, RMR = 0.047). Both models showed good fit indices.

Secondly, unconstrained baseline model and all the constrained models fit the data well (Table 4). The results revealed a non-significant χ^2 difference for model 1 (the unconstrained baseline model) and model 2 (the measurement weights constrained model). However, the differences in the χ^2 values between model 1(the unconstrained baseline model) and model 3 (the structural

Deng *et al. BMC Public Health*   (2025) 25:57

Page 9 of 14

Table 4 The fitting index of multi-group analysis model

	χ^2	df	χ^2/ df	$\Delta\chi^2$	p	RMSEA	CFI	NFI	AIC	ECVI
The unconstrained baseline model	422.211	140	3.016	-	-	0.042	0.964	0.948	622.211	0.468
The measurement weights constrained model	428.151	146	2.933	5.940	0.430	0.041	0.964	0.947	616.151	0.433
The structural weights constrained model	452.547	152	2.977	30.366	<0.001	0.041	0.962	0.944	628.547	0.445

Table 5 The critical ratios of path coefficient in the multiple-group analysis model

Path	FGMWs	NGMWs	CRD
SSS -DE	−0.096[*]	0.024	−2.095[*]
SSS - JF	0.305[***]	0.236[***]	1.633
SSS -JB	−0.236[***]	−0.059	−2.826[***]
JF-DE	−0.109[***]	−0.091[*]	−0.408
JB-DE	0.325[***]	0.284[***]	0.965

 Note. *SSS* Subjective social status, *JB* Job burnout, *JF* Job fairness, *DE* Depressive symptoms, *FGMWs* first generation migrant workers, *NGMWs* new generation migrant workers, *CRD* critical ratios of differences, [*]$p < 0.01$, [**]$p < 0.05$, [***]$p < 0.001$

weights constrained model) were significant ($p < 0.001$), indicating that at least one of the parameters was different between two groups. Although all three models yielded adequate data-model fit, we selected the measurement residuals constrained model as the final model according to χ^2, AIC, and ECVI indexes.

Thirdly, we utilized critical ratios of differences (CRDs) as an index to examine the differences in the structure path coefficients between two groups. If the CRD was larger than 1.96, then the associations between variables would demonstrate a significant difference as $p < 0.05$. Table 5 illustrates the results of critical ratios of path coefficient in the multiple-group analysis model. Specifically, SSS was significantly and negatively related to depressive symptoms in the FGMWs ($\beta = -0.096$, $p < 0.001$) but not in NGMWs ($\beta = 0.005$, $p > 0.05$). Furthermore, the CRD test showed that the path coefficient in FGMWs was significantly lower than that in NGMWs (CRD = −2.095,

$p < 0.05$). Alongside this, SSS was negatively related to job burnout in FGMWs ($\beta = -0.236$, $p < 0.001$), but not in NGMWs ($\beta = -0.059$, $p > 0.05$). Furthermore, the CRD test showed that the path coefficient in FGMWs was lower than that in NGMWs (CRD = −2.286, $p < 0.01$). Finally, no additional path had significant difference in both generations. These findings are illustrated in Fig. 2.

Discussion
Building upon previous research, our study findings provide valuable insights into the mental health of MWs in China by examining the associations between SSS, job fairness, job burnout, and depressive symptoms. We extend the literature by revealing the mediating roles of job fairness and job burnout in this relationship and explores whether this model differs between FGMWs and NGMWs, with the goal of informing targeted intervention programs for MWs.

Subjective social status and depressive symptoms
Consistent with previous studies [45, 91], our findings revealed a significant negative association between SSS and depressive symptoms. This finding aligns with hypothesis 1. Such an association of SSS was previously found for depressive symptoms among elderly Hong Kong population [92], adult German population [91], and Chinese immigrant mothers [93]. The social rank theory of depression suggests that individuals who experiencing disadvantage in social comparison are more susceptible to depression [94]. MWs may feel inferior due to limited job opportunities and poor living conditions compared to urban residents. This sense of inferiority, stemming
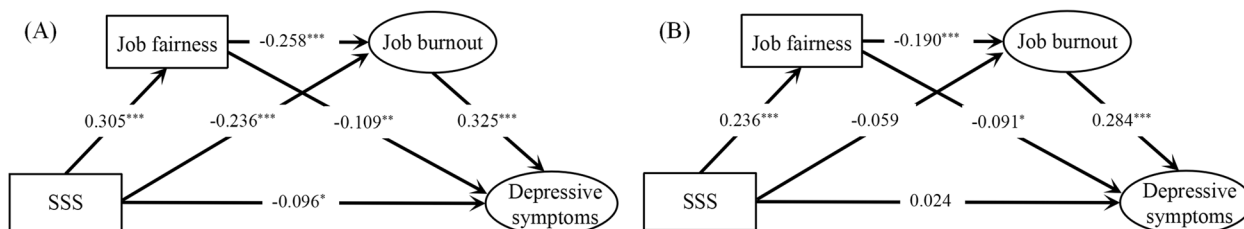

Fig. 2 Mediation model from SSS to depressive symptoms in FGMWs and NGMWs. Note. Figure A shows the mediation model from SSS to depressive symptoms in FGMWs. Figure B shows the mediation model from SSS to depressive symptoms in NGMWs. SSS: Subjective social status, FGMWs: first generation migrant workers, NGMWs: new generation migrant workers

Deng *et al. BMC Public Health*   (2025) 25:57

Page 10 of 14

from lower SSS, increases the risk of depressive symptoms. However, our findings suggest that the direct effect of SSS on depressive symptoms is weak when mediating variables are considered, indicating that the relationship between SSS and depressive symptoms may be influenced by other factors.

Mediating effects of job fairness and job burnout
Our study found multiple mediation paths between SSS and depressive symptoms. Specifically, SSS indirectly influenced depressive symptoms through its impact on job fairness and job burnout. Lower SSS levels were associated with lower levels of job fairness and higher levels of job burnout among MWs, ultimately leading to depressive symptoms.

Job fairness was found to act as a mediator between SSS and depressive symptoms among MWs, supporting the second hypothesis and theories of relative deprivation and perceived unfairness [34, 59]. Previous studies have also highlighted this link, suggesting that perceptions of relative deprivation may be part of a psychosocial pathway that links inequalities in socioeconomic resources to inequalities in health [91]. Our study found a significant positive correlation between SSS and job fairness, with lower levels of job fairness strongly predicted higher levels of depressive symptoms. In China, MWs face challenges due to their lack of formal resident status in cities, leading to exclusion from benefits such as housing subsidies, medical care, social security, and education [95]. Additionally, MWs often undertake heavy, dangerous, or undesirable jobs that urban residents avoid [51]. Our study revealed that MWs have a lower level of SSS compared to urban residents, which may contribute to their sense of relative deprivation and lower job fairness, subsequently impacting their level of depressive symptoms. These findings align with previous research that emphasizes the importance of perceived fairness for the mental health of MWs with lower SSS [55, 61].

Job burnout was also found to act as a mediator between SSS and depressive symptoms. SSS was strongly negatively correlated with job burnout, and then, higher levels of job burnout increase the risk of depressive symptoms, thus supporting hypothesis 3. These findings are consistent with prior research [64, 67, 68]. Previous studies on the relationship between SSS and job burnout have primarily focused on healthcare workers, revealing that individuals who perceive themselves as higher on the subjective social ladder tend to report lower levels of job burnout and turnover intention [64, 96]. Moreover, research of employed adults has consistently shown that job burnout predicts an increase in depressive symptoms in apparently healthy individual [67, 68]. Our study confirmed that low SSS is an important factor leading to job burnout, while the direct effect of SSS on depressive symptoms is weak, and SSS influences depressive symptoms mostly through the mediation role of job burnout. A possible explanation would be that lower SSS makes individuals more likely to perceive stress [48, 65], and thus experience higher levels of job burnout, which ultimately leads to depressive symptoms.

Moreover, our study found a chain mediating effect of job fairness and job burnout on the relation between SSS and depressive symptoms, supporting the stress process model proposed by Pearlin [31, 32]. Lower SSS leads to lower job fairness experienced by MWs, which in turn increases the level of job burnout and ultimately leads to depressive symptoms. These findings also align with the effort-reward-imbalance model [62], which posits that an imbalance between effort and reward can lead to job burnout. Therefore, our study provides new evidence regarding the role of fairness in reducing SSS and its negative impact, including job burnout and depressive symptoms. Additionally, it can be speculated that MWs with higher job fairness are less likely to experience job burnout, thus promoting their mental health.

Group comparison by different generation
Our study found differences between FGMWs and NGMWs in the chain mediation model, supporting the fifth hypothesis. The results of the multi-group analysis in SEM indicated that the mediating effect of job fairness is valid in both generations of MWs groups. However, the mediating effect of job burnout is only established in FGMWs, which may be due to the differences in the characteristics and motivation for working of the two generations of MWs. The direct effect of SSS on depressive symptoms was significant only in FGMWs, which may be due to the differences in levels of education and income between the two generations of MWs. Specifically, lower SSS may directly lead to depressive symptoms in FGMWs, or it may lead to job burnout, which subsequently lead to depressive symptoms in FGMWs, but not in NGMWs.

Since the first wave of rural-urban migration, China has launched a series of reforms, including implementation of the 9-year compulsory education law, the expansion of higher education, and the free compulsory education reform in both rural and urban areas. NGMWs have benefited much from these reforms, they are better educated compared with the FGMWs, and more willing and adaptable to stay in the city [41]. Education is crucial for social integration, as education creates opportunities for wider social participation [97]. It not only has the potential to elevate the social status of marginalized groups by mitigating social exclusion, but it also contributes to the accumulation of cultural capital, which can

enhance individuals' prospects for higher wage returns and increased opportunities for upward social mobility [98, 99]. Previous study has found that the average monthly salary and educational attainment of NGMWs is significantly higher than that of FGMWs [100]. In comparison to NGMWs, FGMWs typically exhibit lower levels of education and personal income, are more likely to feel marginalized in the city, and have a lower SSS, which can lead to depressive symptoms.

FGMWs grew up in rural areas with limited social connections and a low level of education. When they moved to the city for work, they often found themselves in a vulnerable position. In order to maintain their jobs, they would often adopt a submissive attitude to resolve conflicts and avoid trouble [101]. However, this behavior may increase their susceptibility to job burnout. According to the theory of emotional suppression, individuals with low self-esteem tend to suppress their negative emotions, such as anger, in order to prevent conflicts and reduce tensions, which can lead to the development of internalized emotions like depression [102]. On the other hand, NGMWs has higher levels of education and more human capital compared to their predecessors [72]. As a result, they may have a more positive outlook on work and life, and actively strive to protect their legal rights and interests in the workplace.

Besides, FGMWs are more likely to seek employment as a means of survival, whereas NGMWs view it as part of their career planning, focusing on long-term development and personal growth. This includes expanding their knowledge and acquiring technical skills [72]. The two generations of MWs differ in their motivations for work. NGMWs pays increasing attention to the comfort and prospects of their chosen occupation. As a result, their working conditions and employment status have improved to some extent [74]. In summary, FGMWs, with lower levels of education and human capital, and the motivation to work for survival, may experience greater work pressure and are more susceptible to job burnout, which can lead to depressive symptoms.

Limitations and future research directions

However, our study is not without limitations. Firstly, the cross-sectional design of our study precludes any causal inferences about the relationships between SSS, job fairness, job burnout, and depressive symptoms. Longitudinal studies are needed to examine the temporal order and the potential bidirectional effects of these factors on the mental health of MWs. Secondly, our reliance on self-reported measures may introduce response bias and affect the accuracy of our findings. Future research should incorporate objective measures, such as performance evaluations and physiological indicators, to assess job fairness, job burnout, and depressive symptoms. Thirdly, our sample consisted of MWs in a specific region of China, which may limit the generalizability of our findings to other populations of MWs. Future studies should include diverse samples from different regions and sectors to enhance the representativeness and external validity of the findings. And because of limits of the time and fund, we also did not include other prevalent mental health issues among MWs in China, such as anxiety and post-traumatic stress disorder (PTSD).

Implication and conclusions

This study offers valuable insights into the psychological factors contributing to depressive symptoms among Chinese MWs and how these factors differ across different generations. The findings have important implications for current practices and future research.

Firstly, the study suggests that improving job fairness can help reduce the risk of depressive symptoms among MWs. Policymakers and employers should take measures to ensure that MWs are treated fairly and equitably, such as providing them with the same benefits and opportunities as urban residents. Secondly, reducing job burnout is crucial for promoting the mental health of MWs, especially for FGMWs. Employers should provide MWs with adequate support and resources to cope with job demands and stress, such as job training, mentoring, and counseling services. Thirdly, generational differences exist in the direct impact of SSS on depressive symptoms and the mediating role of job burnout. Interventions and policies must consider the distinct needs and characteristics of different generational cohorts of MWs. For instance, career development opportunities and legal protections should be prioritized for the NGMWs, while attention to social security and the provision of psychological counseling and stress management training are crucial for the FGMWs. Given that extending the educational years for MWs is impractical, efforts should instead focus on enhancing their income and professional opportunities, and vocational training is an important way. Therefore, it is necessary to continuously increase vocational training for MWs and improve the quality of vocational training. Lastly, although the study did not examine the role of social support in the relationship between SSS and depressive symptoms, previous research has shown that social support is an important protective factor for MWs' mental health [103–105]. Policymakers and employers should promote social integration and support for MWs, such as providing language training, cultural exchange programs, and community activities. Providing migrants with access to opportunities and resources is important to improve migrants' social integration.

Deng *et al. BMC Public Health*   (2025) 25:57

Page 12 of 14

In conclusion, our study contributes to the understanding of the health and well-being of MWs in China by revealing the mediating roles of job fairness and job burnout in the relationship between SSS and depressive symptoms. Our findings emphasize the importance of considering generational differences in developing targeted interventions to address the mental health needs of MWs. We hope that our recommendations will inform policymakers, organizations, and practitioners in their efforts to improve the mental health and well-being of MWs in China.

Abbreviations

SSS	Subjective social status
MWs	Migrant workers
FGMWs	First generation migrant workers
NGMWs	New generation migrant workers

Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
This study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of Wenzhou Medical University. All subjects consented to participate in this study and provided their written informed consent.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Author details
[1]Normal College, Jimei University, Xiamen, Fujian, China. [2]School of Mental Health, Wenzhou Medical University, Wenzhou, Zhejiang, China. [3]Lishui Second People's Hospital, Wenzhou Medical University, Lishui, Zhejiang, China. [4]Zhejiang Provincial Clinical Research Center for Mental Disorders, The affiliated Wenzhou Kangning Hospital, Wenzhou Medical University, Wenzhou, Zhejiang, China.

References
1. Zhong BL, Liu TB, Chan SSM, Jin D, Hu CY, Dai J, Chiu HFK. Common mental health problems in rural-to-urban migrant workers in Shenzhen, China: prevalence and risk factors. Epidemiol Psychiatr Sci. 2018;27(3):256–65.
2. Che L, Du H, Chan KW. Unequal pain: a sketch of the impact of the Covid-19 pandemic on migrants' employment in China. Eurasian Geogr Econ. 2020;61:448–63.
3. BI P, Ling L. Association between rural-to-urban migrants' social medical insurance, social integration and their medical return in China: a nationally representative cross-sectional data analysis. BMC Public Health. 2019;19(1):86.
4. Long R, Chen H, Hu T, Chen Y, Cao B, Wang R, et al. The association between entrapment and depression among migrant workers in China: a social rank theory based study. BMC Psychiatry. 2022;22(1):17.
5. Gong P, Liang S, Carlton EJ, Jiang Q, Wu J, Wang L, Remais JV. Urbanisation and health in China. Lancet. 2012;379(9818):843–52.
6. Mou J, Griffiths SM, Fong H, Dawes MG. Health of China's rural–urban migrants and their families: a review of literature from 2000 to 2012. Br Med Bull. 2013;106(1):19–43.
7. Yang Y, Chen B, Huang P, Wang Y, Zhang L, Cai F. Prevalence and influencing factors of depressive symptoms among rural-to-urban migrant workers in China: a systematic review and meta-analysis. J Affect Disord. 2022;307:11–9.
8. Huang L, Sun X, Zhou M. Depressive symptoms in Chinese laborers: prevalence and correlated factors among subgroups. J Affect Disord. 2020;268:141–9.
9. Zhong BL, Liu TB, Chiu HF, Chan SS, Hu CY, Hu XF, et al. Prevalence of psychological symptoms in contemporary Chinese rural-to-urban migrant workers: an exploratory meta-analysis of observational studies using the SCL-90-R. Soc Psychiatry Psychiatr Epidemiol. 2013;48(10):1569–81.
10. Li L, Lok GKI, Mei S-L, Cui X-L, An F-R, Li L, et al. Prevalence of depression and its relationship with quality of life among university students in Macau, Hong Kong and mainland China. Sci Rep. 2020;10(1):15798.
11. Xu W, Sun H, Zhu B, Yu X, Niu Y, Kou C, Li W. The prevalence of depressive symptoms and its determinants among adults in mainland China: results from a national household survey. J Affect Disord. 2021;281:220–7.
12. Fan X, Guo X, Ren Z, Li X, He M, Shi H, et al. The prevalence of depressive symptoms and associated factors in middle-aged and elderly Chinese people. J Affect Disord. 2021;293:222–8.
13. Hohls JK, König H-H, Quirke E, Hajek A. Anxiety, depression and quality of life—A systematic review of evidence from longitudinal observational studies. Int J Environ Res Public Health. 2021;18(22):12022.
14. Murray CJ, Lopez AD. Alternative projections of mortality and disability by cause 1990–2020: global burden of disease study. Lancet. 1997;349(9064):1498–504.
15. Novaković M, Milovanović A, Jakovljević B, Milovanović S, Babić D, Pejanović N. Influence of mental disorders on working ability assessment. Vojnosanit Pregl. 2007;64(11):733–7.
16. Yu B, Chen X, Yan Y, Gong J, Li F, Roberson EK. Migration stress, poor mental health, and engagement in sex with high-risk partners: a mediation modeling analysis of data from rural-to-urban migrants in China. Sex Res Soc Policy. 2017;14(4):467–77.
17. Devkota HR, Bhandari B, Adhikary P. Perceived mental health, wellbeing and associated factors among Nepali male migrant and non-migrant workers: a qualitative study. J Migration Health. 2021;3:100013.
18. Wetherall K, Robb KA, O'Connor RC. Social rank theory of depression: a systematic review of self-perceptions of social rank and their relationship with depressive symptoms and suicide risk. J Affect Disord. 2019;246:300–19.
19. Zhong B-L, Liu T-B, Chan SSM, Jin D, Hu C-Y, Dai J, Chiu HFK. Prevalence and correlates of major depressive disorder among rural-to-urban migrant workers in Shenzhen, China. J Affect Disord. 2015;183:1–9.
20. Hoi CK, Chen W, Zhou F, Sou K, Hall BJ. The association between social resources and depressive symptoms among Chinese migrants and non-migrants living in Guangzhou, China. J Pac Rim Psychol. 2015;9(2):120–9.
21. Zheng B, Gu Y, Zhang C. Migration, social exclusion, and subjective well-being: evidence from China labor dynamics survey. Chin Polit Sci Rev. 2022;7(2):197–215.

22. Wang J. Rural-to-urban migration and rising evaluation standards for subjective social status in contemporary China. Soc Indic Res. 2017;134(3):1113–34.
23. Wei L. When the wall is broken: rural-to-Urban migration, perceived inequality, and subjective social status in China. Res Soc Stratif Mobil. 2022;82:100731.
24. Zou J, Deng X. Return intention, subjective social status and residential choices of rural migrant worker households: evidence from China. Hous Theory Soc. 2020;37(4):417–38.
25. Xu Q, Chen Y. Research on the acquisition of subjective and objective social status of urban floating population from the perspective of dual segmentation. Jiangsu Social Sci. 2020(1):51–60. (in Chinese).
26. Yuan Y, Li S, Yue Z. Reference groups, social status and life satisfaction among rural migrants: an evidence from Guangzhou, China. Popul J. 2021;43(5):39–52. (in Chinese).
27. Knight J, Gunatilaka R. Great expectations? The subjective well-being of rural–urban migrants in China. World Dev. 2010;38(1):113–24.
28. Nicklett EJ, Burgard SA. Downward social mobility and major depressive episodes among latino and asian-american immigrants to the United States. Am J Epidemiol. 2009;170(6):793–801.
29. Franzini L, Fernández-Esquer ME. The association of subjective social status and health in low-income mexican-origin individuals in Texas. Soc Sci Med. 2006;63(3):788–804.
30. Shao Y, Ying H, Li X, Tong L. Association between socioeconomic status and mental health among China 's migrant workers: a moderated mediation model. PLoS ONE. 2022;17(9):e0274669.
31. Pearlin LI, Lieberman MA, Menaghan EG, Mullan JT. The stress process. J Health Soc Behav. 1981;22(4):337–56.
32. Pearlin LI. The sociological study of stress. J Health Soc Behav. 1989;30(3):241–56.
33. Pearlin LI. The life course and the stress process: some conceptual comparisons. J Gerontol B Psychol Sci Soc Sci. 2010;65b(2):207–15.
34. Smith HJ, Pettigrew TF, Pippin GM, Bialosiewicz S. Relative deprivation: a theoretical and meta-analytic review. Pers Soc Psychol Rev. 2012;16(3):203–32.
35. Madigan A, Daly M. Socioeconomic status and depressive symptoms and suicidality: the role of subjective social status. J Affect Disord. 2023;326:36–43.
36. Siegrist J. Effort-reward imbalance model. In: Fink G, editor. Stress: concepts, cognition, emotion, and Behavior. San Diego: Academic; 2016. pp. 81–6.
37. Qin X, Hom P, Xu M, Ju D. Applying the job demands–resources model to migrant workers: exploring how and when geographical distance increases quit propensity. J Occupat Organ Psyc. 2014;87(2):303–28.
38. Doane LS, Schumm JA, Hobfoll SE. The positive, sustaining, and protective power of resources: insights from conservation of resources theory. In: Törnblom K, Kazemi A, editors. Handbook of Social Resource Theory: theoretical extensions, empirical insights, and Social Applications. New York, NY: Springer New York; 2012. pp. 301–10.
39. Bakker AB, de Vries JD. Job demands-resources theory and self-regulation: New explanations and remedies for job burnout. Anxiety Stress Coping. 2021;34(1):1–21.
40. National Bureau of Statistics of China. 2022 Migrant Workers Monitoring and Investigation Report. 2023. http://www.stats.gov.cn/xxgk/sjfb/zxfb2020/202304/t20230428_1939125.html. Accessed 7 Dec 2023.
41. He S, Wang K. China's new generation migrant workers' urban experience and well-being. In: Wang D, He S, editors. Mobility, sociability and well-being of Urban Living. Berlin, Heidelberg: Springer Berlin Heidelberg; 2016. pp. 67–91.
42. Cheng Z. The new generation of migrant workers in urban China. In: Cheng Z, Wang M, Chen J, editors. Urban China in the New era: market reforms, current state, and the Road Forward. Berlin, Heidelberg: Springer Berlin Heidelberg; 2014. pp. 125–53.
43. Chan KW. The household registration system and migrant labor in China: notes on a debate. Popul Dev Rev. 2010;36(2):357–64.
44. Singh-Manoux A, Marmot MG, Adler NE. Does subjective social status predict health and change in health status better than objective status? Psychosom Med. 2005;67(6):855–61.
45. Singh-Manoux A, Adler NE, Marmot MG. Subjective social status: its determinants and its association with measures of ill-health in the Whitehall II study. Soc Sci Med. 2003;56(6):1321–33.

46. Leskelä U, Melartin T, Rytsälä H, Jylhä P, Sokero P, Lestelä-Mielonen P, Isometsä E. Influence of personality on objective and subjective social support among patients with major depressive disorder: a prospective study. J Nerv Ment Dis. 2009;197(10):728–35.
47. Weiss D, Kunzmann U. Longitudinal changes in subjective social status are linked to changes in positive and negative affect in midlife, but not in later adulthood. Psychol Aging. 2020;35(7):937–47.
48. Adler NE, Epel ES, Castellazzo G, Ickovics JR. Relationship of subjective and objective social status with psychological and physiological functioning: preliminary data in healthy white women. Health Psychol. 2000;19(6):586–92.
49. Ghaed SG, Gallo LC. Subjective social status, objective socioeconomic status, and cardiovascular risk in women. Health Psychol. 2007;26(6):668–74.
50. Rose D. Social comparisons and social order: Issues relating to a possible re-study of W. G. Runciman's relative deprivation and social justice. ISER Working Paper 48. Colchester: Institute for Social & Economic Research, University of Essex. 2006.
51. Meng X, Zhang J. The two-tier labor market in urban China: occupational segregation and wage differentials between urban residents and rural migrants in Shanghai. J Comp Econ. 2001;29(3):485–504.
52. Zhang N, Chai D. Objective work-related factors, job satisfaction and depression: an empirical study among internal migrants in China. Healthc (Basel). 2020;8(2):163.
53. Adugna K, Birhanu B, Kebede A, Abraham G, Asefa Y, Gezahign M, et al. The relation between organizational justice and counter-productive work behavior among health care professionals in Jimma Zone public health institutions. J Healthc Leadersh. 2022;14:119–30.
54. Piccoli B, De Witte H. Job insecurity and emotional exhaustion: testing psychological contract breach versus distributive injustice as indicators of lack of reciprocity. Work Stress. 2015;29(3):246–63.
55. Ren Z, Yue G, Xiao W, Fan Q. The influence of subjective socioeconomic status on life satisfaction: the chain mediating role of social equity and social trust. Int J Environ Res Public Health. 2022;19(23):15652.
56. Caricati L. Testing the status-legitimacy hypothesis: a multilevel modeling approach to the perception of legitimacy in income distribution in 36 nations. J Soc Psychol. 2017;157(5):532–40.
57. Li X, Stanton B, Fang X, Lin D. Social stigma and mental health among rural-to-urban migrants in China: a conceptual framework and future research needs. World Health Popul. 2006;8(3):14–31.
58. Zhou B, Zhong Y. Young floating population in city: how outsiderness influences self-esteem of rural-to-urban migrant children in China? Int J Environ Res Public Health. 2022;19(3):1863.
59. Jackson B, Kubzansky LD, Wright RJ. Linking perceived unfairness to physical health: the perceived unfairness model. Rev Gen Psychol. 2006;10(1):21–40.
60. Lipkusa IM, Dalbert C, Siegler IC. The importance of distinguishing the belief in a just world for self versus for others: implications for psychological well-being. Pers Soc Psychol Bull. 1996;22(7):666–77.
61. Lee H, Um K, Ju Y, Lee S, Choi M, Paek D, Cho S-S. Association between organizational justice and depressive symptoms among securities company workers. Ann Occup Environ Med. 2018;31:e7.
62. Siegrist J. Adverse health effects of high-effort/low-reward conditions. J Occup Health Psychol. 1996;1(1):27–41.
63. Bakker AB, Demerouti E. Job demands-resources theory: taking stock and looking forward. J Occup Health Psychol. 2017;22(3):273–85.
64. Ayalon L. Subjective socioeconomic status as a predictor of long-term care staff burnout and positive caregiving experiences. Int Psychogeriatr. 2008;20:521–37.
65. Derry HM, Fagundes CP, Andridge R, Glaser R, Malarkey WB, Kiecolt-Glaser JK. Lower subjective social status exaggerates interleukin-6 responses to a laboratory stressor. Psychoneuroendocrinology. 2013;38(11):2676–85.
66. Salvagioni DAJ, Melanda FN, Mesas AE, González AD, Gabani FL. Andrade SMd. Physical, psychological and occupational consequences of job burnout: a systematic review of prospective studies. PLoS ONE. 2017;12(10):e0185781.
67. Armon G, Melamed S, Toker S, Berliner S, Shapira I. Joint effect of chronic medical illness and burnout on depressive symptoms among employed adults. Health Psychol. 2014;33(3):264–72.

Deng *et al. BMC Public Health*   (2025) 25:57

Page 14 of 14

68. Yong X, Gao X, Zhang Z, Ge H, Sun X, Ma X, Liu J. Associations of occupational stress with job burnout, depression and hypertension in coal miners of Xinjiang, China: a cross-sectional study. BMJ Open. 2020;10(7):e036087.

69. Yuan Z, Yu D, Zhao H, Wang Y, Jiang W, Chen D, et al. Burnout of healthcare workers based on the effort-reward imbalance model: a cross-sectional study in China. Int J Public Health. 2021;66:599831.

70. van Vegchel N, de Jonge J, Bosma H, Schaufeli W. Reviewing the effort-reward imbalance model: drawing up the balance of 45 empirical studies. Soc Sci Med. 2005;60(5):1117–31.

71. Frenkel SJ, Li M, Restubog SLD. Management, organizational justice and emotional exhaustion among Chinese migrant workers: evidence from two manufacturing firms. Brit J Industrial Rel. 2012;50(1):121–47.

72. Wang X. An investigation into intergenerational differences between two generations of migrant workers. Social Sci China. 2008;29(3):136–56.

73. Liu Y, Li Z, Breitung W. The social networks of new-generation migrants in China's urbanized villages: a case study of Guangzhou. Habitat Int. 2012;36(1):192–200.

74. Liu J, Wei L. The influencing factors and the difference analysis of two generation of migrant workers' occupational mobility. Soft Sci. 2017;31(2):38–43.

75. Choi G. Individuals' socioeconomic position, inequality perceptions, and redistributive preferences in OECD countries. J Econ Inequal. 2021;19(2):239–64.

76. Cheng Z, Wang H, Smyth R. Happiness and job satisfaction in urban China: a comparative study of two generations of migrants and urban locals. Urban Stud. 2013;51(10):2160–84.

77. To SM, Tam HL. Generational differences in work values, perceived job rewards, and job satisfaction of Chinese female migrant workers: implications for social policy and social services. Soc Indic Res. 2014;118(3):1315–32.

78. Liu L, Wang Z. Characteristics and formation mechanism of the new generation of migrant workers. J Sun Yat-sen University(Social Sci Edition). 2013;53(5):136–50. (in Chinese).

79. Xu G, Zhang C, Liu J. Effects of birth periods on migrant workers' sense of social conflict and the mediation mechanism. J Northeastern University(Social Science). 2015;17(4):398–403. (in Chinese).

80. Qiu P, Caine E, Yang Y, Chen Q, Li J, Ma X. Depression and associated factors in internal migrant workers in China. J Affect Disord. 2011;134(1):198–207.

81. Chen L, Yu Z, Luo X, Huang Z. Intimate partner violence against married rural-to-urban migrant workers in eastern China: prevalence, patterns, and associated factors. BMC Public Health. 2016;16(1):1232.

82. National Bureau of Statistics of China. Report on the monitoring survey of migrant workers in 2020. 2021. https://www.gov.cn/xinwen/2021-04/30/content_5604232.htm. Accessed 28 Jul 2024.

83. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Meas. 1977;1(3):385–401.

84. Chin WY, Choi EP, Chan KT, Wong CK. The psychometric properties of the center for epidemiologic studies depression scale in Chinese primary care patients: factor structure, construct validity, reliability, sensitivity and responsiveness. PLoS ONE. 2015;10(8):e0135131.

85. Zhang J, Sun W, Kong Y, Wang C. Reliability and validity of the Center for Epidemiological Studies Depression Scale in 2 special adult samples from rural China. Compr Psychiatry. 2012;53(8):1243–51.

86. Chen H, Zhu Z. Social trust and emotional health in rural older adults in China: the mediating and moderating role of subjective well-being and subjective social status. BMC Public Health. 2021;21(1):556.

87. Jin L. Migration, relative deprivation, and psychological well-being in China. Am Behav Sci. 2016;60(5–6):750–70.

88. Kim JH, Sumerlin TS, Goggins WB, Kwong EMS, Leung J, Yu B, Kwok TCY. Does low subjective social status predict cognitive decline in Chinese older adults? A 4-year longitudinal study from Hong Kong. Am J Geriatr Psychiatry. 2021;29(11):1140–51.

89. Wang Y, Hu M, Ding R, He P. The dynamic relationship between subjective social status and health: evidence from a Chinese cohort study. Br J Health Psychol. 2023;28(1):1–21.

90. Li Z, Dai J, Wu N, Gao J, Fu H. The mental health and depression of rural-to-urban migrant workers compared to non-migrant workers in Shanghai: a cross-sectional study. Int Health. 2019;11(S1):S55–63.

91. Hoebel J, Maske UE, Zeeb H, Lampert T. Social inequalities and depressive symptoms in adults: the role of objective and subjective socioeconomic status. PLoS ONE. 2017;12(1):e0169764.

92. Wong SYS, Mercer SW, Woo J, Leung J. The influence of multi-morbidity and self-reported socio-economic standing on the prevalence of depression in an elderly Hong Kong population. BMC Public Health. 2008;8(1):119.

93. Chen SH, Zhang E, Liu CH, Wang LK. Depressive symptoms in Chinese immigrant mothers: relations with perceptions of social status and interpersonal support. Cultur Divers Ethnic Minor Psychol. 2021;27(1):72–81.

94. Sloman L, Gilbert P, Hasey G. Evolved mechanisms in depression: the role and interaction of attachment and social rank in depression. J Affect Disord. 2003;74(2):107–21.

95. Zhang H. The Hukou system's constraints on migrant workers' job mobility in Chinese cities. China Econ Rev. 2010;21(1):51–64.

96. Shan Y, Liu G, Zhou C, Li S. The relationship between CDC personnel subjective socioeconomic status and turnover intention: a combined model of moderation and mediation. Front Psychiatry. 2022;13:908844.

97. Chen Y, Wang J. Social integration of new-generation migrants in Shanghai China. Habitat Int. 2015;49:419–25.

98. Zhang C, Zhang F. Effects of housing wealth on subjective well-being in urban China. J Hous Built Environ. 2019;34(4):965–85.

99. Huang W, Su S, Sun X. Social cognition, socioeconomic status and subjective well-being of Chinese migrant workers. Sci Rep. 2024;14(1):6550.

100. Meng F, Lin H. J. X. Intergenerational differences in the employment structure of rural migrants——Further research on the data of China migrant dynamic survey. China Rural Stud. 2020(1):246–66. (in Chinese).

101. Sheng Y. An analysis on the inter-generational division of migrant workers. J Hainan Open Univ. 2019;20(1):123–7. (in Chinese).

102. Langner CA, Epel ES, Matthews KA, Moskowitz JT, Adler NE. Social hierarchy and depression: the role of emotion suppression. J Psychol. 2012;146(4):417–36.

103. Li W, Sun F, Li Y, Durkin DW. Work stress and depressive symptoms in Chinese migrant workers: the moderating role of community factors. J Immigr Minor Health. 2019;21(6):1248–56.

104. Lin Y, Zhang Q, Chen W, Ling L. The social income inequality, social integration and health status of internal migrants in China. Int J Equity Health. 2017;16(1):139.

105. Ji X, Chui CHK, Ni SG, Dong R. Life satisfaction of rural migrant workers in urban China: the roles of community service participation and identity integration. J Soc Serv Res. 2020;46(2):273–82.

Publisher's note