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Complete List of Authors:	He, Rongxin; Xi'an Jiaotong University School of Public Policy and Administration; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Liu, Jinlin; Xi'an Jiaotong University School of Public Policy and Administration; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Zhang, WeiHong; Ghent University Faculty of Medicine and Health Sciences, International Centre for Reproductive Health Zhu, Bin; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Zhang, WeiHon; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Zhang, Ning; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Zhang, Ning; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Mao, Ying; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Mao, Ying; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment Mao, Ying; Xi'an Jiaotong University, Research Center for the Belt and Road Health Policy and Health Technology Assessment
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Turnover intention among primary health workers in China: a systematic review and meta-analysis

Rongxin He^{1,2}, Jinlin Liu^{1,2,5}, Zhang Wei-Hong³, Bin Zhu^{1,2,4}, Ning Zhang^{1,2}, Ying Mao^{1,2*}

- ¹ School of Public Policy and Administration, Xi'an Jiaotong University, 28 Xianning West Road, Xi'an 710049, China; herongxin@stu.xjtu.edu.cn (R.H.); zhangningati@stu.xjtu.edu.cn (N.Z.)
- ² Research Center for the Belt and Road Health Policy and Health Technology Assessment, Xi'an Jiaotong University, 28 Xianning West Road, Xi'an 710049, China
- ³ International Centre for Reproductive Health (ICRH), Ghent University, Ghent, Belgium; WeiHong,Zhang@UGent.be (Z.W.)
- ⁴ Department of Public Policy, City University of Hong Kong, Hong Kong, 999077, China; binzhu2c@my.cityu.edu.hk (B.Z.)

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- ⁵ Walter H. Shorenstein Asia-Pacific Research Center, Stanford University, Stanford, California 94305, USA; liujinlin_xjtu@163.com (J.L.)
- * Correspondence: Ying Mao. Email: mao_ying@mail.xjtu.edu.cn; Tel.: +86-029-8266-5482

Abstract

Objectives To analyze the prevalence and determinants of turnover intention (the intent to change or leave current employment) in order to provide evidence for improving retention measures. **Design** Systemic review and meta-analysis.

Data sources Four English language databases (PubMed, EMBASE, Cochrane Library and PsycINFO) and three Chinese databases (CNKI, CSPD and CBM) were searched up to October 2019.

Eligibility criteria Eligible studies were observational or descriptive studies conducted in mainland China, with human participants. The prevalence of turnover intention among health workers and related factors (potential risk factors) had to be explicitly reported in each included study.

Data extraction and synthesis Data were extracted by one author and reviewed independently by two other authors. For each factor analyzed by a meta-analysis, it was required that the factor is the same consistently among different studies, and at least three studies included it. The quality of studies was assessed using the Newcastle–Ottawa scale and heterogeneity was evaluated using I² statistic.

Results: We identified 16 cross-sectional studies investigating a total of 37672 primary health workers (PHWs). The prevalence of turnover intention was 30.4% (95% CI 24.0-36.7%). Subgroup analysis revealed that the highest prevalence was observed in the community facilities and the eastern provinces of China. Meta-analyses indicated that 21 factors were significantly associated with turnover intention, included demographic factors (gender, age, education, marital status), job characteristic factors (title, work seniority, income, social status, organizational affiliation, work stress) and job satisfaction factors (learning and training opportunity, interpersonal relationship, keep busy and fulfilling, work condition and environment).

Conclusion: This study highlights the problem of the turnover intention among PHWs in China. There is a significant association between demographic factors, job characteristic factors, job satisfaction factors and turnover intention. So the comprehensive measures from these aspects should be taken towards retaining PHWs.

Strengths and limitations of this study

1) This systematic review provides supplemental evidence from China to global studies on the turnover intention of primary health workers.

2) Meta-analysis and narrative analysis are performed to identify the risk factors of turnover intention among primary health workers.

3) Significant heterogeneity among the individual studies exists when performing the subgroup analysis and part of the meta-analysis.

Introduction

Primary health care (PHC) addresses the majority of a person's health needs throughout their lifetime. The declaration of Astana declared that strengthening primary health care is the most inclusive, effective and efficient approach to enhance people's physical and mental health, as well as social well-being.[1] Primary health workers (PHWs) are direct providers of PHC, and their quantity directly decides the quantity, quality and outcomes of PHC.[2] These services should be provided with compassion, respect and dignity by health professionals who are well-trained, skilled, motivated and committed.[1] However, primary health institutions are facing significant labor shortages worldwide,[3] not only in the low and middle-income countries[2,4,5] but also in the developed countries.[6,7] In China, the PHC services are provided by community health centers and stations in the urban areas and by township health centers and village clinics in rural areas.[8] Nowadays, these health agencies are all facing the problem of staff turnover, aggravated the shortage of health workforce[9], which become one of the significant obstacles to strengthen China's primary healthcare services.[10]

Turnover intention (TI) is defined as the probability that an employee will leave his or her job within a specific period,[11] which was regarded as one of the best predictors of turnover behaviors.[12– 15] Previous studies have explored the factors which influencing the turnover intentions of PHWs. A variety of them have been identified, such as demographic factors,[7,16–21] job satisfaction,[17,19,21–24] work stress,[12,17,24] burnout,[22,25] quality of work-life,[20] interpersonal communication,[26] violence from patients[27] et al. While these factors have been linked with TI definitely, some researchers focused on the factors which were off-the-job. Han et al.[28]found that key factors of community integration influencing overseas-trained doctors' decision to stay in or leave a rural community in Australia; Stewart et al.[16] reported that community satisfaction is a crucial predictor of intent to leave among rural and remote registered nurses in Canada; Chao et al. and Lu et al.[11,12] demonstrated there is a significant correlation between work-family conflict and TI of PHWs in Taiwan and Guangdong.

In China, many empirical studies have been conducted. However, most of them were published in Chinese, only a few studies about TI and risk factors of PHWs have been published in international journals, and no related systematic reviews have been found neither Chinese nor English. Therefore, this study aims to examine the prevalence of TI and identify the related factors among PHWs in China by conducting a systemic review and meta-analysis.

Method

Literature search

This systematic review and meta-analysis were performed following the PRISMA guidelines.[29,30] A systematic search of the literature was conducted up to October 2019 using five English language

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databases (PubMed, EMBASE, Cochrane Library, PsycINFO) and three Chinese databases (CNKI, CSPD and CBM). No limits were applied for language and publication dates of coverage. The search strategy was based on a combination of "(Turnover Intention, or Departure Intention, or Demission Intention, or Leave Intention, or intent to leave), AND (Primary, Community, Rural, Countryside, District, Basic, Fundamental or Grassroots), AND (Health worker, Health officer, Health Manpower, Health Personnel, Medical Personnel, Medical worker, Medical staff, Doctor, Physician, or Nurse) and (China, or Chinese)". References of the retrieved studies were also checked and screened. The full search strategy can be found in the supplementary tables S1.

Study eligibility

Eligible studies were published studies that reported TI prevalence and related determinants among Chinese PHWs. The eligibility criteria included: (1) Types of studies: original cross-sectional studies. Those presenting non-original data, such as reviews, editorials, opinion papers, or letters to the editor, were excluded. (2) Types of participants: Chinese PHWs. (3) Types of intervention: no intervention measures applied. (4) Types of outcome measures: the prevalence of TI nd related factors reported in the study.

Eligibility assessment was conducted to screen titles, abstracts and full texts of the identified studies by two reviewers independently. Disagreements on which studies should be included or excluded were resolved by full group consensus.

Data extraction

A piloted form referred to the Cochrane Effective Practice and Organization of Care Review Group (EPOC) data collection checklist,[31] was used to extract relevant data from the included full-text studies. The following data were extracted: author, publication year, the location where the study was carried out, participants, sample size, number of cases, assessment tools, prevalence of TI and related factors. Data extraction was conducted by one author and reviewed independently by two other authors, with disagreements resolved by discussion until consensus was reached.

Quality assessment

The quality of studies was assessed using a modified Newcastle-Ottawa scale,[32] as recommended by the Cochrane Collaboration.[33] Studies received scores based on the design-specific sources of bias, methods for selecting participants, exposure measures, outcome variables and methods to control confounders.[34] The total score was 7 points, and all the included studies were grouped according to their scores, which included good (6–7), moderate (3–5) and poor (1–2).

Data synthesis and statistical analysis

The main outcome in this review was the difference in prevalence or relative risk of TI among different groups. The prevalence of TI was estimated as the total number of TI cases divided by the total number of PHWs participating in the study. We compared the difference of TI between PHWs from different regions and institutions by subgroup analyses. The other outcome of this study was

to identify the association between factors and TI among PHWs in the form of the log odds ratio. For each factor analyzed by a meta-analysis, it was required related variables in the questionnaire are the same consistently among different studies, which meant it was feasible to be merged into two groups; meanwhile, at least three studies related to each factor had to be included in the meta-analysis. When performing a meta-analysis, the significance of the pooled odds ratio (OR) was determined by the Z-test. Heterogeneity was estimated by the Q statistic and evaluated using I^2 statistic.[35] A fixed-effect model was used to compute the summary risk estimate if there was no heterogeneity among the studies, whereas a random-effects model was used when heterogeneity existed ($I^2 \ge 50\%$).[36] Publication bias was evaluated using Egger's test. All statistical analyses were performed using Stata V13.0 and RevMan V5.3. A two-tailed p value of <0.05 was considered to be statistically significant. We referred to the meta-analysis of observational studies in epidemiology (MOOSE) guideline.[37] If it was infeasible to make a quantitative synthesis and conduct a meta-analysis, a narrative approach and descriptive statistics were used by grouping studies that reported the same factors, and to compare their associations with TI of PHWs.

Patient and public involvement

Patients and the public were not involved in this study.

Results

A total of 455 records were identified through our initial database search (PubMed: 13, Embase: 14, Coherence: 6, PsycINFO: 0, CNKI: 124, WAN FANG Data: 270, CBM: 28). After removing the duplicate records, 208 records were screened based on title and abstract. Eighty-seven articles were included in the full-text review. Among these, 63 articles were eliminated due to lacking original data. Three articles were eliminated for the inappropriate study design. Five articles were excluded because missing data on risk factors of TI. Finally, 16 studies were included in this study. No additional studies were obtained after checking references of all the 16 retrieved articles. The study selection process was shown in Figure 1.

Figure 1 Flow diagram of the study selection

Study characteristics

Table 1 presented the main characteristics of all 16 studies. These studies were all cross-sectional studies and performed in 24 provinces of China between 2011 and 2019. The selected studies included 37 672 participants, with a median sample size of 1073 (range 127–16157). Five studies were conducted in eastern China,[38–42] four in central provinces, [18,43–45] four in the west region.[17,46–48] four studies conducted in in urban area, [38,39,43,49] eight in rural area, [17,18,41,45–48,50] and four included both areas. [40,42,44,51] All studies reported the prevalence and related factors of TI among PHWs.

Table 1 Characteristics of 16 included studies

The determinants of TI would be analyzed by meta-analysis and content analysis. 47 factors were extracted in 16 included studies (Supplementary tables S2). It included three groups: 7 demographic factors, 22 job characteristic factors, and 18 job satisfaction factors. The average quality score of the 16 included studies was 5.25 of 7 points, indicating a moderate-average quality, assessed using the modified Newcastle-Ottawa scale (Supplementary tables S3). All studies were distributed in the medium and high quality.

Prevalence of turnover intention among PHWs

Table 2 showed the prevalence of turnover intention among PHWs in China. The pooled prevalence was 0.304 (95%CI: 0.240-0.367, P < 0.001). the highest prevalence was 0.543 (95%CI: 0.457-0.630) reported by Gu et al. [38], whereas Zhang reported the lowest prevalence of 0.08 (95%CI: 0.054-0.106). [48] The subgroup analysis by the region showed that, the highest prevalence was observed in the eastern China with a prevalence of 0.376 (95%CI: 0.231-0.521, P < 0.001) followed by central regions at 0.319 (95%CI: 0.239-0.399, P < 0.001) and then west at 0.232 (95%CI: 0.119-0.345, P < 0.001). According to working setting, the highest prevalence occurred in PHWs working in the community, 0.412 (95% CI: 0.274-0.551, P < 0.001), followed by the rural PHWs working in township and village. By sample size, the prevalence of TI was higher in studies having a sample of size<1037, 0.355 (95% CI: 0.232-0.478, P < 0.001) compared to those having a sample size \geq 1037, 0.255 (95%CI: 0.174-0.337, P < 0.001). High heterogeneity was observed across the included studies.

Table 2 Prevalence of turnover intention among PHWs in China

Related factors of turnover intention among PHWs

All studies reported demographic factors or job characteristic factors and determined their associations with TI of PHWs. Moreover, six studies explored the effects of job satisfaction factors, [18,41,44–47] 19 factors were feasible for included in the meta-analyses. The egger's linear regression tests on a natural logarithm scale of OR found no evidence of publication bias for the studies included in meta-analyses (Supplementary tables S4).

Demographic factors and turnover intention

The meta-analysis of demographic factors was based on 15 cross-sectional studies (Figure 2). Gender (male vs. female: OR:1.23, 95%CI: 1.08-1.40, P = 0.002),[17,18,39–47,49,51] age (younger vs. older: OR: 1.47, 95%CI: 1.24-1.74, P < 0.00001),[39,40,43,47–49,51] marriage status (unmarried vs. married, OR: 1.16, 95%CI: 1.04-1.29, P = 0.007)[17,40,42–44,46,47] were significantly associated with TI of PHWs, but education (low-education vs. high-education: OR:0.78, 95%CI: 0.60-1.02 P = 0.07).[17,18,40,42–45,47–49] were not statistically significant.

Figure 2 Forest plots of demographic factors

Job characteristic factors and turnover intention

Job characteristic factor was studied in nine studies (Figure 3). Job title (low-title vs. high-title: OR: 1.11, 95%CI: 1.03-1.21, P =0.007),[17,39,40,42–45,47,49] work seniority (short vs. long: OR: 1.17, 95%CI: 1.03-1.34, P =0.01),[39,45,48,49] organizational affiliation (strength vs. others: OR: 0.85, 95%CI: 0.73–1.00, P < 0.00001),[40,43,51] work stress (high vs. low: OR: 3.14, 95%CI: 2.73-3.61, P < 0.00001)[42,44,46,47,51] were significantly associated with TI of PHWs. However, occupation (doctor vs. nurse: OR:1.05, 95%CI: 0.78-1.41, P = 0.76)[39,40,42,43,49] were not statistically significant.

Figure 3 Forest plots of job characteristic factors

Job satisfaction factors and turnover intention

Six studies expolred the association between job satisfaction factors and turnover intention (Figure 4). Overall job satisfaction (satisfied vs. dissatisfied: OR: 0.15, 95%CI: 0.04-0.51, P=0.002),[38,41,44] promotion and individual development space (satisfied vs. dissatisfied: OR: 0.19, 95%CI: 0.12-0.29, P < 0.00001),[18,46,47] interpersonal relationship (satisfied vs dissatisfied: OR: 0.20, 95%CI: 0.15-0.28, P<0.00001),[18,46,47] keep busy and fulfilling (satisfied vs dissatisfied: OR: 0.39, 95%CI: 0.33-0.47, P<0.00001),[18,41,46,47] individual value embodiment (satisfied vs dissatisfied: OR: 0.39, 95%CI: 0.33-0.47, P<0.00001),[18,41,46,47] individual value embodiment (satisfied vs dissatisfied: OR: 0.39, 95%CI: 0.16, 95%CI: 0.08-0.32, P<0.00001),[18,41,46] income satisfaction (satisfied vs dissatisfied: OR: 0.33, 95%CI: 0.11-0.95, P =0.04),[18,41,45–47] work condition and environment (satisfied vs dissatisfied: OR: 0.19, 95%CI: 0.15-0.23, P<0.00001),[18,41,46,47] level of attention by leaders (satisfied vs dissatisfied: OR: 0.20, 95%CI: 0.15-0.26, P<0.00001),[18,46,47] the competence of my manager in making decisions (satisfied vs dissatisfied: OR: 0.18, 95%CI: 0.10-0.32, P<0.00001),[18,46,47] and motivation and salary system (satisfied vs dissatisfied: OR: 0.21, 95%CI: 0.11-0.38, P < 0.00001)[44,46,47] were significantly associated with TI of PHWs.

Figure 4 Forest plots of job satisfaction factors

All the other 28 exposures were analyzed for their associations with TI of PHWs under a narrative approach. In the demographic factors group, PHWs who work in remote region,[40] with lower income[17,46,51] and social status[41,46,47] were found to have high risks of TI significantly. No significant associations were found between TI and the nation.[45,46] Besides, the associations between TI and major in clinical medicine are inconclusive.[45,46]

Among job characteristic factors, seven were significantly associated with high risks of TI, including lower individual income levels in the local,[18,41] more severe emotional exhaustion,[41,45] more severe flattening of affect,[45] more participation in public health service,[50] longer working hours,[46] no career planning,[46] lack of insurance.[45] No significant

associations were found between TI and qualified to practice,[18] re-employ after retirement,[47] turnover experience,[46] career identity,[46] influence on family life,[49] patient trust.[46] Besides, the associations between TI and living condition is inconclusive.[46,47]

Regarding job satisfaction factors, PHWs who unsatisfied with work stability,[18,46] the chance to try my own methods of doing the job,[18] the chance to do something that makes use of my abilities,[18,46] work support,[41,47] policies practice, [18,44,46] and income fairness[44,46] were found to have high risks of TI significantly. However, no statistical significant association was found between TI and the satisfaction of the scientific research atmosphere or learning and the training opportunity. [45–47]

Discussion

This systematic review presents an overall prevalence of TI (30.4%) among Chinese PHWs whichindicated that three of ten PHWs intent to turnover. However, this finding is almost two times higher than some of the high-income countries. A study conducted in England showed that only 11.8% of primary care doctors had high turnover intention.[52] A survey including 23,159 nurses from 10 European countries showed that showed that 9% of all these nurses intended to leave their profession, varied from 5 to 17% among countries[53] Another survey preformed among 2263 physicians in American reported that 18.4% of them intended to leave the practice. [54] A study cinducted in Canada reported 17.2% of registered nurses intended to leave the current nursing position. [16] Meanwhile, the prevalence of TI was lower than some low and middle-income countries, such as Ghana, [19] Iraqi, [55] South Africa, [21] and the Philippines. [56]

The subgroup analysis indicated that the variation of prevalence of TI among regions. The possible explanations for this variation might be the difference in the level of social and economic development and the workplace. In east China, there is a higher amount of urban hospitals than other regions, providing more jobs, higher pay and better work environment. It attract lots of PHWs move away from primary care practice.[57] As the rural PHWs, they usually settled down in rural areas, lacking access to urban hospitals compare to peers in the urban community.

This study extracted a broad scope of 47 related factors and determined their associations with TI of PHWs, identifying a total of 31 demographic, job characteristic and job satisfaction risk factors. Five demographic risk factors were determined to have significant associations with TI of PHWs, which showed that PHWs had high risks of TI were those who were male, younger, had a higher education, unmarried, work in the remote region. Some of these findings are in lines with studies done in South Africa, Philippines, Canada, Saudi Arabia, Ghana and Netherlands.[16,19–21,24,56] However, Bonenberger et al. [19] and Labrague et al.[56] showed that the association between gender and TI of PHWs was not statistically significant.

According to job characteristic factors, we concluded that PHWs who had shorter work seniority, higher work stress, longer working hours presented significantly high risks of TI. All of these

findings are consistent with prior studies. Nevertheless, some findings are inconsistent with prior studies. Income was found to be significant statistically in the review, which is consistent with Almalki et al.,[20] but Labrague et al.[56] reported an insignificant association between income and TI. Occupation, level of the medical institution was not statistically significant with TI in the review, in accord with Warmelink et al.[24] and Labrague et al.[56] However, some studies reported showed the opposite results. [16,19]In addition, there are seven factors identified in the review were never or rarely reported in other countries, including title, social status, participation in public health service, insurance, career planning, emotional exhaustion or flattening of affect and authorized personnel, which were found to have significant associations with high risk of TI among PHWs in China.

There is a significant inverse association between job satisfaction and TI. In this review, we found that the low overall job satisfaction reported significantly higher risks of TI among PHWs, which is in line with Bonenberger et al.,[19] Warmelink et al.[24] and Delobelle et al.[21] Furthermore, most of the job satisfaction factors are also significant associated with TI of PHWs. However, these specific job satisfaction factors were rarely reported in previous studies.

Notably, compared with previous studies focused on the family factor[16,20], our study did not find relevant evidence on family factors in China such as: community satisfaction, numbers of the dependent family member, family commitments.

To our knowledge, this is the first systematic review (including meta-analysis) to determine potential risk factors of TI among Chinese PHWs. Our findings present an overview of the current evidence from Mainland China. One strength of this review is it estimated the prevalence of TI among Chinese PHWs based on a large sample size with a total of 16 cross-sectional studies and 37 672 participants. Another strength is that it determines the associations of a broad scope of potential risk factors. Limitations exist in this systematic review. Significant heterogeneity among the individual studies was found when performing the subgroup analysis and part of meta-analysis due to the lack of relevant studies. There is still needed to collect more relevant studies to make more in-depth analyses in the future.

Conclusion

The analysis highlights recognition on the problem of the turnover intention among PHWs in China. There is a significant association between demographic factors, job characteristic factors, job satisfaction factors and turnover intention. So the comprehensive measures from these aspects should be taken towards retaining PHWs. Moreover, PHWs in community or the east require special attention.

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Contributors

Rongxin He and Ying Mao conceived this research project. Jinlin Liu and Rongxin He developed the search strategy and Rongxin He searched the databases. Jinlin Liu, Bin Zhu, Zhangning and Rongxin He selected the studies. Rongxin He designed and executed the analyses, interpreted the findings, wrote the first draft, revised subsequent drafts, and prepared the manuscript. Ying Mao and Zhang Wei-Hong revised drafts of the manuscript.

Competing interests

The authors declare that they have no competing interests.

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Table 1 Characteristics of 16 included studies

Authors	Location	Participants	Number (Qualified rate %)	Assessment tools	Prevalence, N (%)	Ref. No.
Xu,2012	Anhui	City community	1109(92.96%)	Dichotomous question	224 persons (20.2%)	5
Gu,2012	Shanghai,	City community	127(86.99%)	Dichotomous question	69 persons (56.69%)	7
Yao,2011	Guangdong	City community	335(95.7%)	Dichotomous question	178 persons (52.0%)	13
Lu,2018	Shandong	Rural area (village)	1037(98.57%)	The Self-made 10items 5-point	498 persons (48.02%)	15
				Likert Turnover intention Scale	(Score of > 32 out of 50 means	
					turnover intention)	
Ou,2018	Guangdong	City community and Rural area	1252(87.43%)	Frah Turnover intention Scale	227 persons (18. 13%)	17
					(Score of $>$ 3 out of 5)	
Xu,2015	Guizhou	Rural area (township)	704(96.6%)	Dichotomous question	247 persons (35.10%)	19
Liu,2019	Not Stated	City community and Rural area	16157(100.00%)	Dichotomous question	1858 persons (11.50%)	33
Zhang,2013	Shaanxi	Rural area (township)	425(99.53%)	Dichotomous question	34 persons (8.00%)	39
Liu,2017	Shanghai	City community and Rural area	3295(86.70%)	Dichotomous question	520 persons (15.80%)	49
Shen,2018	8 central provinces 1	Rural area (village)	1669 (100.00%)	Dichotomous question	568 persons (34.03%)	54
Zhou,2016	Wuhan	City community and Rural area	755 (83.90%)	Michael & Spector Turnover	278 persons (36.86%)	55
				intention Scale	(Score of $>$ 3 out of 5)	
Zhang,2015	Shandong, Anhui, Shanxi	Rural area (township)	167(100.00%)	Dichotomous question	49 persons (29. 34%)	63
Wan,2013	Yunnan	Rural area (township & county)	493(94.80%)	Dichotomous question	101 persons (29. 34%)	70
Fang,2014	Hubei	Rural area (village)	1889(97.88%)	Dichotomous question	695 persons (36.8%)	76
Sun,2013	5 provinces ²	City community	3212(99.32%)	Dichotomous question	1243 persons (38.7%)	79
Liu JL,2019	11 western provinces ³	Rural area (township & county)	5046(90.4%0%)	Dichotomous question	1468 persons (29.1%)	86

¹⁸ provinces: Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan

²⁵ provinces: Zhejiang, Guangdong, Guizhou, Hebei, and Hubei

³11 provinces: Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang, and Yunnan

Table 2 Prevalence of turnover intention among PHWs in China

Variables	Characteristic	Included studies	Prevalence (95%CI)	Q test (I ²)
Overall	,	16	0.304[0.240, 0.367]	99.5%
By region	East	5	0.376[0.231, 0.521]	99.3%
	Central	4	0.319[0.239, 0.399]	97.6%
	West	4	0.232[0.119, 0.345]	98.8%
By participants	Work in village	3	0.395[0.321, 0.470]	96.3%
	Work in township	5	0.234[0.144, 0.342]	98.4%
	Work in community	4	0.412[0.274, 0.551]	98.7%
By sample size	<1037	8	0.355[0.232, 0.478]	99.7%
	≥1037	8	0.255[0.174, 0.337]	98.8%
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

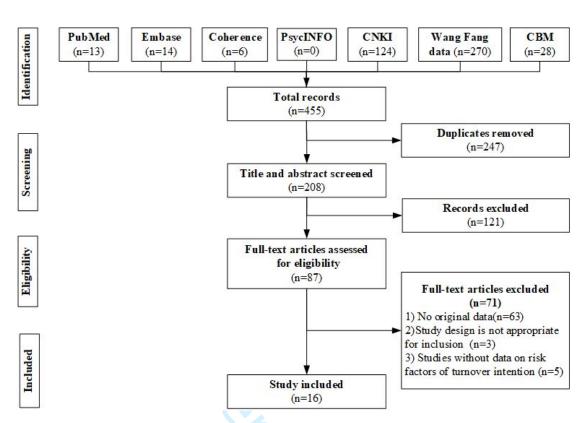


Figure 1 Flow diagram of the study selection



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2						
3		Male	Female	Odds Rat	io Odds Ratio	
4	Gender			Weight M-H, Random		L
5	Fang 2014	483 130:		10.4% 1.04 [0.8		
6	Liu 2017 Liu 2019	122 74 691 438		9.8% 1.04 [0.8		
7	Liu JL 2019	465 161:		10.2% 1.72 [1.4 12.2% 0.98 [0.8	No. 1 State	
	Lu 2018	250 72		7.7% 1.88 [1.3		
8	Ou 2018	75 38:		7.8% 1.15 [0.8		
9	Shen 2018	436 122- 356 87-		9.5% 1.31 [1.0 11.5% 1.12 [0.9		
10	Sun 2013 Wan 2013	356 87- 23 10-		11.5% 1.12 [0.9 4.2% 1.13 [0.6		
11	Xu 2012	18 26:		3.4% 1.58 [0.8		
12	Xu 2015	103 28		7.6% 1.08 [0.7		
13	Yao 2011	51 9i 6 1i		4.6% 1.29 [0.7		
14	Zhou 2016	6 1	261 714	1.1% 2.08 [0.6	22, 0.89]	
	Total (95% CI)	12007	7 14080	100.0% 1.23 [1.0	98, 1.40]	
15	Total events	3079	3597			
16	Heterogeneity: Tau ^a			1004); I² = 66%	0.01 0.1 1	10 100
17	Test for overall effec	ι. 2 = 3.13 (F = 0.0	102)		Favours [experimental] Favours [	control]
18	Ago	Younger (<35)	Older (≥35)	Odds Ra		
19	Age	1/1. (7/1/2/1/2/1/2/1/2/1/2/1/2/1/2/1/2/1/2/1/	and the second sec	Weight M-H, Random	n, 95% Cl M-H, Random, 95% C 61, 3.441 •	
20	Liu 2017 Liu 2019	27 31 685 464		9	39, 1.70]	
	Sun 2013	663 162			04, 1.38]	
21	Xu 2012	31 39		. 이는	40, 4.96]	
22	Xu 2015 Xoo 2011	152 38 103 19		한 - 알카카카카락사람	29, 2.37]	
23	Yao 2011 Zhang 2013	103 19 27 31		21 - ^~~2000,000 ·······························	80, 1.95] 61, 3.44]	
24		0.00				
25	Total (95% CI)	786		100.0% 1.47 [1.3	24, 1.74]	
26	Total events Heterogeneity: Tau ² =	1688 - 0.02: Chill - 12.5	1951 5 df = 6 (P = 0.04)	12-560	<u> </u>	
	Test for overall effect			1 - 30%	0.01 0.1 1	10 100
27					Favours [experimental] Favours	[control]
28	Education	Low-education Events To		on Odds otal Weight M-H, Rand		% CI
29	Fang 2014	681 18			[0.56, 2.09]	
30	Liu 2017	252 14			[0.94, 1.38] 🗾	
31	Liu 2019	1172 108			[0.46, 0.57]	
32	Ou 2018 Shen 2018	121 6 452 13			[0.72, 1.30]	
33	Sun 2013				[0.83, 1.12]	
34	Xu 2012				[0.25, 0.98]	
	Xu 2015 Zhann 2012		12 44		[0.30, 0.74]	_
35	Zhang 2013 Zhou 2016		83 3 75 112 :		· [0.33, 3.92] · [0.46, 0.86]	
36		0.55	1979 - 1979 - 19			
37	Total (95% CI)	203		925 100.0% 0.78	[0.60, 1.02]	
38	Total events Heterogeneity: Tau²	3886 - 0.14: Chiž - 97	1822 11 df = 9 /P < 0.00	001\!!= 01%	p	
39	Test for overall effect			001),1 = 91%	0.01 0.1 1	10 1
40				1240672000	Favours [experimental] Favou	irs (control)
	Marital status	Unmarried	Married	Odds Ratio Weight M-H, Fixed, 95%	Odds Ratio Cl M-H, Fixed, 95% Cl	
41	Liu 2017	17 128	17 293	1.5% 2.49 [1.23, 5.0		
42	Liu JL 2019	403 1316		63.2% 1.10 [0.96, 1.2		
43	Ou 2018	40 217	184 1012	8.7% 1.02 [0.70, 1.4		
44	Wan 2013	28 139	72 339	5.5% 0.94 [0.57, 1.5		
45	Xu 2012 Xu 2015	13 202 75 200	35 690 160 470	2.4% 1.29 [0.67, 2.4 9.8% 1.16 [0.82, 1.6		
46	Zhou 2016	90 203	173 515	8.9% 1.57 [1.13, 2.1		
	T-4-1/052/ 00		70.10		22. 2017	
47	Total (95% CI) Total events	2405 666	7049 1 1706	1.16 [1.04, 1.2	al 🔺	
48	Heterogeneity: Chi ²					
49	Test for overall effec				0.01 0.1 1 10 Favours [experimental] Favours [contro	100
50						-1
51						
			Figure 2 Fo	rest plats of den	nographic factors	

Figure 2 Forest plots of demographic factors

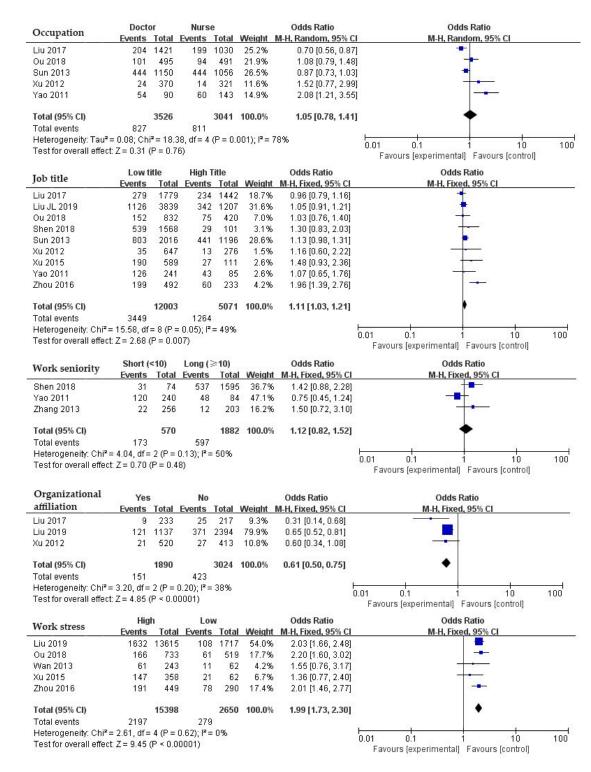


Figure 3 Forest plots of job characteristic factors

100

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Overall job satisfaction	Satisfie Events	ed Total	Dissatis Events	fied Total	Weight	Odds Ratio M-H, Random, 95% Cl	Odds Ratio M-H, Random, 95% Cl
Gu 2012 Lu 2018 Zhou 2016	18 68 61	48 287 322	14 85 76	16 187 103	23.9% 38.6% 37.5%	0.09 (0.02, 0.42) 0.37 (0.25, 0.55) 0.08 (0.05, 0.14)	
Total (95% CI) Total events Heterogeneity: Tau ² =					<b>100.0%</b> 1001); I ² =	0.15 [0.04, 0.51] 91%	
Test for overall effect: Promotion and							Favours (experimental) Favours (control)
individual development space		Total	Dissatis Events	Total		Odds Ratio M-H, Random, 95% Cl	Odds Ratio M-H, Random, 95% Cl
Fang 2014 Wan 2013 Xu 2015	194 9 20	694 93 144	209 50 135	341 128 245	48.2% 20.5% 31.2%	0.25 [0.19, 0.32] 0.17 [0.08, 0.36] 0.13 [0.08, 0.22]	<b>±</b>
<b>Total (95% Cl)</b> Total events Heterogeneity: Tau ² =					<b>100.0%</b> ); I ² = 569	0.19 [0.12, 0.29] %	• 0.01 0.1 1 10
Test for overall effect: Interpersonal	Z = 7.60 (F Satisfie		0001) Dissatis	fied		Odds Ratio	Favours [experimental] Favours [control] Odds Ratio
relationship	Events	Total	Events	Total		M-H, Fixed, 95% Cl	M-H, Fixed, 95% Cl
Fang 2014 Wan 2013 Xu 2015	407 48 156	1338 287 498	107 7 9	154 16 14	85.3% 7.1% 7.7%	0.19 [0.13, 0.28] 0.26 [0.09, 0.73] 0.25 [0.08, 0.77]	
Total (95% CI) Total events	611	2123	123	184	100.0%	0.20 [0.15, 0.28]	•
Heterogeneity: Chi ² = Test for overall effect:	0.45, df = 1 Z = 9.62 (F	♀ < 0.0	0.80); I² = 0001)			Dotate Pretie	Favours [experimental] Favours [control]
Keep busy and fulfilling	Satisfie Events	Total	Dissatis Events	Total		Odds Ratio M-H, Random, 95% Cl	Odds Ratio M-H, Random, 95% Cl
Fang 2014 Lu 2018	3	1324 66	89 311	144 867	38.0% 15.2%	0.29 [0.20, 0.41] 0.09 [0.03, 0.27]	
Wan 2013 Xu 2015	29 53	217 254	7 49	14 75	16.0% 30.8%	0.15 [0.05, 0.47] 0.14 [0.08, 0.25]	
Total (95% CI) Total events	505	1861	456	1100	100.0%	0.17 [0.10, 0.30]	•
Heterogeneity: Tau ² = Test for overall effect:	0.18; Chi ^a		D, df = 3 (F	9 = 0.05	); I² = 61 ⁰	%	0.01 0.1 1 10
Individual value	Satisfie	ed	Dissatis			Odds Ratio	Favours (experimental) Favours (control) Odds Ratio
embodiment Fang 2014		1125	123	185	39.2%	M-H, Random, 95% Cl 0.21 [0.15, 0.30]	M-H, Random, 95% Cl
Lu 2018 Wan 2013	75 48	489 287	161 7	241 16	38.5% 22.3%	0.09 [0.06, 0.13] 0.26 [0.09, 0.73]	
Total (95% CI)		1901	8550 million	442	100.0%	0.16 [0.08, 0.32]	•
Total events Heterogeneity: Tau ² =				(P = 0.0	101); I² = 8	35%	0.01 0.1 1 10
Test for overall effect:				fied		Odde Dati-	Favours [experimental] Favours [control]
Income satisfaction	Satisfie Events	Total	55.00 7 C N	Total		Odds Ratio M-H, Random, 95% CI	Odds Ratio M-H, Random, 95% Cl
Fang 2014 Lu 2018	18 20	113 140	500 270	1051 721	21.4% 21.5%	0.21 [0.12, 0.35] 0.28 [0.17, 0.46]	
Shen 2018 Wan 2013	107 2	195 37	143 70	330 244	22.0% 15.9%	1.59 [1.11, 2.27] 0.14 [0.03, 0.61]	
Xu 2015	5	37	196	469	19.1%	0.22 [0.08, 0.57]	
Total (95% CI) Total events	152	522	1179		100.0%	0.33 [0.11, 0.95]	
Heterogeneity: Tau ² = Test for overall effect:				(P < 0.0	10001); I ^z	= 94%	0.01 0.1 1 10 Favours [experimental] Favours [control]
Work condition and environment	Satisfie		Dissatis		Moinht	Odds Ratio	Odds Ratio
Fang 2014	240	929	231	364	52.8%	M-H, Fixed, 95% Cl 0.20 [0.15, 0.26]	M-H, Fixed, 95% Cl
Lu 2018 Wan 2013	29 9	257 97	174 24	378 85	26.8% 5.0%	0.15 [0.10, 0.23] 0.26 [0.11, 0.60] 0.10 [0.11, 0.20]	
Xu 2015 Total (95% Cl)	34	154 1437	91	150 977	15.4%	0.18 [0.11, 0.30] <b>0.19 [0.15, 0.23]</b>	•
Total events Heterogeneity: Chi ² =	312		520 0.59); I² =		100.070	i i i i i i i i i i i i i i i i i i i	
Test for overall effect:	Z = 16.62	(P < 0.	00001)			Ö.	Favours [experimental] Favours [control]
Attention by leaders	Satisfie Events	Total		Total		Odds Ratio M-H, Fixed, 95% Cl	Odds Ratio M-H, Fixed, 95% Cl
Fang 2014 Wan 2013 Xu 2015	376 14 53	1247 136 254	103 18 59	155 44 100	58.3% 11.1% 30.5%	0.22 [0.15, 0.31] 0.17 [0.07, 0.38] 0.18 [0.11, 0.30]	
Total (95% CI)		1637	39		100.0%	0.18 [0.11, 0.30]	•
Total events Heterogeneity: Chi ² = Test for overall effect:	443 0.55, df = 3	2 (P =				L	01 0.1 1 10 Favours [experimental] Favours [control]
The competence of m manager in making	Satisfie		Dissatis		144-1-1-1	Odds Ratio	Odds Ratio
decisions Fang 2014	Events 429	1380	82	106	37.0%	M-H, Random, 95% Cl 0.13 [0.08, 0.21]	M-H, Random, 95% Cl
Wan 2013 Xu 2015	23 42	124 233	16 82	44 132	26.6% 36.4%	0.40 [0.19, 0.85] 0.13 [0.08, 0.22]	
Total (95% CI) Total events Heterogeneity: Tau ² =	494	<b>1737</b> *= 6.65	180 5, df = 2 (F		<b>100.0%</b> ); I ² = 709	0.18 [0.10, 0.32] %	
Test for overall effect:		♀ < 0.0				Odds Ratio	0.01 0.1 1 10 Favours (experimental) Favours (control) Odds Ratio
Motivation and salary system Wan 2013	Satisfie Events 7				Weight 25.0%	Odds Ratio <u>M-H, Random, 95% Cl</u> 0.16 [0.07, 0.36]	Odds Ratio M-H, Random, 95% Cl
Xu 2015 Zhou 2016	13 133	107 489	49 146 109	297 202	32.3% 42.7%	0.14 [0.08, 0.27] 0.32 [0.23, 0.45]	
Total (95% CI)		685		637	100.0%	0.21 [0.11, 0.38]	n/site/about/guidelines,xl

Heterogèneity: Tau"= 0.19; Chi = 6.40, df = 2 (P=0.04); F=69% Heterogèneity: Tau"= 0.19; Chi = 6.40, df = 2 (P=0.04); F=69% Testfor overall effect: Z = 5.15 (P < 0.00001) Favours [experimental] Favours [control]

Figure 4 Forest plots of job satisfaction factors

to peet terien only

#### **Table S1 Search strategy**

#### Database 1: PubMed

Sequence	Query
#1	Search (Chinese[MeSH Terms]) OR Chinese[Title/Abstract]
#2	Search (China[MeSH Terms]) OR China[Title/Abstract]
#3	#1 OR #2
	Search (((Chinese[MeSH Terms]) OR Chinese[Title/Abstract]))OR ((China[MeSH Terms]) OR
	China[Title/Abstract])))
#4	Search (Health worker[MeSH Terms]) OR Health worker[Title/Abstract]
#5	Search (Health officer[MeSH Terms]) OR Health officer[Title/Abstract]
#6	Search (Health Manpower[MeSH Terms]) OR Health Manpower[Title/Abstract]
#7	Search (Health Personnel[MeSH Terms]) OR Health Personnel[Title/Abstract]
#8	Search (Medical Personnel[MeSH Terms]) OR Medical Personnel[Title/Abstract]
#9	Search (Medical worker[MeSH Terms]) OR Medical worker[Title/Abstract]
#10	Search (Medical staff[MeSH Terms]) OR Medical staff[Title/Abstract]
#11	Search (Doctor[MeSH Terms]) OR Doctor[Title/Abstract]
#12	Search (Physician[MeSH Terms]) OR Physician[Title/Abstract]
#13	Search (Nurse[MeSH Terms]) OR Nurse [Title/Abstract]
#14	#4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #11 OR #12 OR #13
	Search ((((((((Health worker[MeSH Terms]) OR Health worker[Title/Abstract])) OR ((Health officer[MeSH
	Terms]) OR Health officer[Title/Abstract])) OR ((Health Manpower[MeSH Terms]) OR Health
	Manpower[Title/Abstract])) OR ((Health Personnel[MeSH Terms]) OR Health Personnel[Title/Abstract])) OR
	((Medical Personnel[MeSH Terms]) OR Medical Personnel[Title/Abstract])) OR ((Medical worker[MeSH
	Terms]) OR Medical worker[Title/Abstract])) OR ((Medical staff[MeSH Terms]) OR Medical
	staff[Title/Abstract])) OR ((Doctor[MeSH Terms]) OR Doctor[Title/Abstract])) OR ((Physician[MeSH Terms])
	OR Physician[Title/Abstract])) OR ((Nurse[MeSH Terms]) OR Nurse [Title/Abstract])
#15	Search (Rural[MeSH Terms]) OR Rural[Title/Abstract]
#16	Search (Countryside[MeSH Terms]) OR Countryside[Title/Abstract]
#17	Search (Community[MeSH Terms]) OR Community[Title/Abstract]
#18	Search (District[MeSH Terms]) OR District[Title/Abstract]
#19	Search (Basic[MeSH Terms]) OR Basic[Title/Abstract]
#20	Search (Fundamental[MeSH Terms]) OR Fundamental[Title/Abstract]
#21	Search (Primary[MeSH Terms]) OR Primary[Title/Abstract]
#22	Search (Grass roots[MeSH Terms]) OR Grass roots[Title/Abstract]
#23	#7 OR #8 OR #9 OR #11 OR #12 OR #13 OR #14
	Search ((((Primary[MeSH Terms]) OR Primary[Title/Abstract]) OR Grass roots[MeSH Terms]) OR Grass
	roots[Title/Abstract]) OR (((Community[MeSH Terms]) OR Community[Title/Abstract]) OR
	((((((((Rural[MeSH Terms]) OR Rural[Title/Abstract]) OR Countryside[MeSH Terms]) OR
	Countryside[Title/Abstract]) OR District[MeSH Terms]) OR District[Title/Abstract]) OR Basic[MeSH Terms])
	OR Basic[Title/Abstract]) OR Fundamental[MeSH Terms]) OR Fundamental[Title/Abstract]))

#24	Search(Turnover Intention[MeSH Terms]) OR Turnover Intention[Title/Abstract]
#25	Search (Departure Intention[MeSH Terms]) OR Departure Intention[Title/Abstract]
#26	Search (Demission Intention[MeSH Terms]) OR Demission Intention[Title/Abstract]
#27	Search(Leave Intention[MeSH Terms]) OR Leave Intention[Title/Abstract]
#28	Search intent to leave[Title/Abstract]
#29	#18 OR #19 OR #20
	Search (((((((Turnover Intention[MeSH Terms]) OR Turnover Intention[Title/Abstract])) OR ((Departure
	Intention[MeSH Terms]) OR Departure Intention[Title/Abstract])) OR ((Demission Intention[MeSH Terms])
	OR Demission Intention[Title/Abstract])) OR ((Leave Intention[MeSH Terms]) OR Leave
	Intention[Title/Abstract])) OR intent to leave[Title/Abstract]
#30	#3 AND #10AND #17AND #21
	Search (((((((Turnover Intention[MeSH Terms]) OR Turnover Intention[Title/Abstract])) OR ((Departure
	Intention[MeSH Terms]) OR Departure Intention[Title/Abstract])) OR ((Demission Intention[MeSH Terms])
	OR Demission Intention[Title/Abstract])) OR ((Leave Intention[MeSH Terms]) OR Leave
	Intention[Title/Abstract])) OR intent to leave[Title/Abstract])) AND (((((((Primary[MeSH Terms]) OR
	Primary[Title/Abstract]) OR Grass roots[MeSH Terms]) OR Grass roots[Title/Abstract]) OR
	(((Community[MeSH Terms]) OR Community[Title/Abstract]) OR (((((((((Rural[MeSH Terms]) OR
	Rural[Title/Abstract]) OR Countryside[MeSH Terms]) OR Countryside[Title/Abstract]) OR District[MeSH
	Terms]) OR District[Title/Abstract]) OR Basic[MeSH Terms]) OR Basic[Title/Abstract]) OR
	fundamental[MeSH Terms]) OR fundamental[Title/Abstract])))) AND (((((((((((((((Health worker[MeSH
	Terms]) OR Health worker[Title/Abstract])) OR ((Health officer[MeSH Terms]) OR Health
	worker[Title/Abstract])) OR ((Health Manpower[MeSH Terms]) OR Health Manpower[Title/Abstract])) OR
	((Health Personnel[MeSH Terms]) OR Health Personnel[Title/Abstract])) OR ((Medical Personnel[MeSH
	Terms]) OR Medical Personnel[Title/Abstract])) OR ((Medical worker[MeSH Terms]) OR Medical
	worker[Title/Abstract])) OR ((Medical staff[MeSH Terms]) OR Medical staff[Title/Abstract])) OR
	((Doctor[MeSH Terms]) OR Doctor[Title/Abstract])) OR ((Physician[MeSH Terms]) OR
	Physician[Title/Abstract])) OR ((Nurse[MeSH Terms]) OR Nurse [Title/Abstract]))) AND (((((Chinese[MeSH
	Terms]) OR Chinese[Title/Abstract]))OR ((China[MeSH Terms]) OR China[Title/Abstract]))))))

#### **Database 2: EMBASE**

Sequence	Query
#1	'China'/exp
#2	'China':ti,ab
#3	#1 OR #2
#4	'Turnover Intention' OR 'Departure Intention' OR 'Demission Intention' OR 'Leave Intention'/exp
#5	'Turnover Intention' OR ' Departure Intention' OR 'Demission Intention' OR 'Leave Intention' OR 'intent to
	leave':ti,ab
#6	#4 OR #5
#7	'Primary' OR 'Grass roots' OR 'Community' OR 'Countryside' OR 'District' OR 'Basic' OR 'Rural' OR
	'Fundamental':ti,ab
#8	'Health worker' OR 'Health officer' OR 'Health Manpower' OR 'Health Personnel' OR 'Medical Personnel' OR
	'Medical worker' OR 'Medical staff ' OR 'Doctor' OR 'Physician' OR 'Nurse':ti,ab

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#9	#3 AND #6 AND #7 AND #8
atabase	3: Cochrane Library
Sequence	Query
#1	china:ti,ab,kw (Word variations have been searched)
#2	chinese:ti,ab,kw(Word variations have been searched)
#3	#1 or #2
#4	(turnover intention):ti,ab,kw OR (departure Intention):ti,ab,kw OR (demission Intention):ti,ab,kw OR (leave
	Intention):ti,ab,kw OR (intent to leave):ti,ab,kw(Word variations have been searched)
#5	(primary):ti,ab,kw OR (community):ti,ab,kw OR (rural):ti,ab,kw OR (basic):ti,ab,kw OR
	(countryside):ti,ab,kw(Word variations have been searched)
#6	(health worker):ti,ab,kw OR (health manpower):ti,ab,kw OR (health personnel):ti,ab,kw OR (health
	officer):ti,ab,kw(Word variations have been searched)
<b>#7</b>	(medical worker):ti,ab,kw OR (medical staff):ti,ab,kw OR (doctor):ti,ab,kw OR (physician):ti,ab,kw OR
	(nurse):ti,ab,kw(Word variations have been searched)
#8	#5 or #6
#9	#3 and #4 and #5 and #8

#### Database 4: PsycINFO

Sequence	Query
#1	Title: china OR Abstract: china OR Title: chinese OR Abstract: chinese
#2	Title: turnover intention OR Abstract: turnover intention OR Title: Departure Intention OR Abstract: Departure
	Intention OR Title: Demission Intention OR Abstract: Demission Intention OR Title: Leave Intention OR
	Abstract: Leave Intention OR Abstract: intent to leave
#3	Title: Health worker OR Abstract: Health worker OR Title: Health officer OR Abstract: Health officer OR Title:
	Health Manpower OR Abstract: Health Manpower OR Title: Health Personnel OR Abstract: Health Personnel
	OR Title: Medical Personnel OR Abstract: Medical Personnel OR Title: Medical worker OR Abstract: Medical
	worker OR Title: Medical staff OR Abstract: Medical staff OR Title: Doctor OR Abstract: Doctor OR Title:
	Physician OR Abstract: Physician OR Title: Nurse OR Abstract: Nurse
#4	Title: Rural OR Abstract: Rural OR Title: Countryside OR Abstract: Countryside OR Title: Community OR
	Abstract: Community OR Title: District OR Abstract: District OR Title: Basic OR Abstract: Basic OR Title:
	Fundamental OR Abstract: Fundamental OR Title: Primary OR Abstract: Primary OR Title: Grass roots OR
	Abstract: Grass roots
#5	#1 AND #2 AND #3 AND #4

#### Database 5: CAJD (CNKI)

SU=('医生'+'医务人员'+'护士'+'卫生人员')AND SU=('离职意愿'+'离职倾向'+'离职意向'+'留职意愿'+'工作意愿'+'留职意向 ')AND SU=('基层'+'社区'+'农村'+'乡镇卫生院'+'卫生服务中心')

#### Database 6: CSPD (WANFANG Data)

(题名或关键词:(社区)+题名或关键词:(农村)+题名或关键词:(基层)+题名或关键词:(乡镇卫生院)+题名或关键词:(卫生服 务中心))*(题名或关键词:(离职意愿)+题名或关键词:(离职倾向)+题名或关键词:(离职意向))+题名或关键词:(留职意愿))+ 题名或关键词:(工作意愿))+题名或关键词:(留职意向))*(题名或关键词:(医生)+题名或关键词:(护士)+题名或关键词:(医 务人员)+题名或关键词:(卫生人员))

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((((("社区"[标题:智能]) OR "基层"[标题:智能]) OR "次村"[标题:智能]) OR "乡镇卫生院"[标题:智能]) OR "卫生服务中心 "[标题:智能]) AND ((((("离职意愿"[标题:智能]) OR "离职倾向"[标题:智能]) OR "离职意向"[标题:智能]) OR "留职意愿 "[标题:智能]) OR "工作意愿"[标题:智能]) OR "留职意向"[标题:智能] AND (((("医生"[标题:智能]) OR "护士"[标题:智能]) OR "卫生人员"[标题:智能]) OR "医务人员"[标题:智能])

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#### Table S2 47 factors related to TI

Group	Category	Exposure
A	Demographic	A1-gender, A2-age, A3-education, A4-region, A5-marital status, A6-nation, A7-major,
В	Job characteristic	B1-occupation, B2-job title, B3-work seniority, B4-qualified to practice, B5-income, B6-medical institution, B7-organizational affiliation, B8- re-employ after retirement,
		B9-turnover experience, B10-individual income levels in the local, B11-work stress, B12-emotional exhaustion, B13-flattening of affect, B14-public health service, B15-
		working hours, B16-career planning, B17-career identity, B18-Social status B19-influence family life, B20-living condition, B21-lack of insurance, B22-patient trust.
С	Job satisfaction	C1-learning and training opportunities, C2-promotion and individual development space, C3-interpersonal relationship, C4-work conditions and environment, C5-individual
		value embodiment, C6-scientific research atmosphere, C7-level of attention by leaders, C8-income satisfaction, C9-keep busy and fulfilling, C10-the competence of my
		manager in making decisions, C11-work stability, C12-policies practice, C13-the chance to try my own methods of doing the job, C14-the chance to do something that
		makes use of my abilities, C15-job satisfaction, C16-work support, C17-income fairness, C18-motivation and salary system ,.
		makes use of my abilities, C15-job satisfaction, C16-work support, C17-income fairness, C18-motivation and salary system ,.

A 41	Representativeness	6l <b>:</b>	N	Ascertainment of	Comparability of subjects in different	Assessment of	Statistical test is	Total
Authors	of the sample	Sample size	Non-respondents	the exposure	outcome groups (control for confounding)	the outcome	appropriate	score
Xu,2012	1	1	0	1	1	1	1	6
Gu,2012	0	1	0	1	1	1	1	5
Yao,2011	0	1	0	1	0	1	1	4
Lu,2018	1	1	0	1	0	1	1	5
Ou,2018	1	1	0	1	1	1	1	6
Xu,2015	0	1	0	1	1	1	1	5
Liu,2019	1	1	0	1	1	1	1	6
Zhang,2013	0	1	0	1	1.	1	1	5
Liu,2017	1	1	0	1	0	1	1	5
Shen,2018	1	1	0	1	i	1	1	6
Zhou,2016	0	1	0	1	0	1	1	4
Zhang,2015	0	1	0	1		1	1	5
Wan,2013	0	1	0	1	0	1	1	4
Fang,2014	1	1	0	1	1	1	1	6
Sun,2013	1	1	0	1	1	1	1	6
Liu JL,2019	1	1	0	1	1	1	1	6

# Table S3 Quality scores assessing risk of bias using a modified Newcastle-Ottawa scale

# Table S4 Meta-analyses on 19 factors

F	No. of studies in	Communities modul	Q test		Statistical	Pooled OR	Z test	Egger	
Exposure	Meta-analyses	Comparison model	I ²	<i>P</i> -value	model	OR (95%CI)	<i>P</i> -value	P> t	
Demographic factors									
Gender	13	Male vs. female	66%	0.0004	Random-effect	1.23 [1.08, 1.40]	0.002	0.240	
Age	7	Younger (<35) vs. older (≥35)	56%	0.04	Random-effect	1.47 [1.24, 1.74]	< 0.00001	0.368	
		Low-education (junior college or below)							
Education	10	vs. high-education(bachelor degree or	91%	< 0.00001	Random-effect	0.78 [0.60,1.02]	0.07	0.325	
		above)							
Marital status	7	Unmarried vs. married	37%	0.15	Fixed-effect	1.16 [1.04, 1.29]	0.007	0.095	
Job characteristic factors									
Occupation	5	Doctor vs. nurse	78%	0.001	Random-effect	1.05 [0.78, 1.41]	0.76	0.221	
	0	Low-title (no title or junior title) vs. high-	49%	0.05			0.007	0.000	
Job title	9	title (middle title or senior title)	49%	0.05	Fixed-effect	1.11 [1.03, 1.21]	0.007	0.223	
Work seniority	3	Short (<10) vs. long (≥10)	50%	0.13	Fixed-effect	1.12 [1.82, 1.52]	0.48	0.117	
Organizational affiliation	4	Authorized personnel vs. others	38%	0.20	Fixed-effect	0.85 [0.73, 1.00]	< 0.00001	0.400	
Work stress	5	High vs. low	0%	0.62	Fixed-effect	3.14 [2.73, 3.61]	< 0.00001	0.169	
Job satisfaction factors									
Overall job satisfaction	3	Satisfied vs. dissatisfied	91%	< 0.0001	Random-effect	0.15 [0.04, 0.51]	0.002	0.561	
Promotion and individual	2		5 ( 0 (	0.10	D 1 00 /	0 10 50 10 0 001	- 0.00001	0.1/0	
development space	3	Satisfied vs. dissatisfied	56%	0.10	Random-effect	0.19 [0.12, 0.29]	< 0.00001	0.160	
Interpersonal relationship	3	Satisfied vs. dissatisfied	0%	0.80	Fixed-effect	0.20 [0.15, 0.28]	< 0.00001	0.522	
Keep busy and fulfilling	4	Satisfied vs. dissatisfied	61%	0.05	Random-effect	0.39 [0.33, 0.47]	< 0.00001	0.162	
Individual value embodiment	3	Satisfied vs. dissatisfied	85%	0.001	Random-effect	0.16 [0.08, 0.32]	< 0.00001	0.291	

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Income satisfaction	5	Satisfied vs. dissatisfied	94%	< 0.00001	Random-effect	0.33 [0.11, 0.95]	0.04	0.216
Work condition and environment	5	Satisfied vs. dissatisfied	0%	0.59	Fixed-effect	0.19 [0.15, 0.23]	< 0.00001	0.153
Attention by leaders	3	Satisfied vs. dissatisfied	0%	0.76	Fixed-effect	0.20 [0.15, 0.26]	< 0.00001	0.120
The competence of my manager in making decisions	3	Satisfied vs. dissatisfied	70%	0.04	Random-effect	0.18 [0.10, 0.32]	< 0.00001	0.210
Motivation and salary system	3	Satisfied vs. dissatisfied	69%	0.04	Random-effect	0.21 [0.11, 0.38]	< 0.00001	0.161

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# Appendix

# **1.** Distribution of factors in 16 included studies (1 = Yes, 0 = No)

Exposure	16	inclu	ided s	tudies	s (Ref.	No.)											To
Exposure	5	7	13	15	17	19	33	39	49	54	55	63	70	76	79	86	
A1	1	0	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1.
A2	1	1	1	1	1	1	1	1	0	1	1	0	1	0	1	1	1.
A3	1	0	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1.
A4	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	3
A5	1	0	0	0	1	1	0	1	0	0	1	0	1	0	0	1	7
A6	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
A7	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
B1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	1	0	5
B2	1	0	1	0	1	1	1	0	1	1	1	0	1	0	1	1	1
B3	1	0	1	0	1	0	0	1	0	1	0	0	1	1	1	0	8
B4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
B5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
<b>B6</b>	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	3
<b>B7</b>	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
<b>B8</b>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>B9</b>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
B10	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
B11	0	0	0	0	1	1	1	0	0	0	1	0	1	0	0	0	4
B12	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
B13	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
B14	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
B15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
B16	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
B17	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
B18	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	3
B19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
B20	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
B21	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
B22	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
C1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	
C2	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	3
C3	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	4
C4	0	0	0	1	0	1	0	0	0	0	1	0	1	1	0	0	4
C5	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	3
C6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
<b>C7</b>	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	3
C8	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	0	4

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Total	8	2	8	11	9	19	6	4	6	11	12	1	32	17	9	7
C18	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0
C17	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
C16	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
C15	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0
C14	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
C13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
C12	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
C11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
C10	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0
С9	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0

## 2. Data extraction according to each factor

#### * TI: Turnover Intention; Non-TI: Non- Turnover Intention

#### A1-Gender

Author	Group	TI	Non-TI	Results
Sun, 2013	male	356	518	No significant difference ( $\chi^2$ test).
	female	888	1450	
Liu JL, 2019	male	465	1150	No significant difference ( $\chi^2$ test).
	female	1003	2428	
Fang, 2014	male	483	819	No significant difference ( $\chi^2$ test).
	female	212	375	
Xu, 2012	male	18	244	Significant difference ( $\chi^2$ =10.040, P<0.01).
	female	30	641	
Yao, 2011	male	51	39	No significant difference ( $\chi^2$ test).
	female	115	117	
Lu, 2018	male	250	473	Significant difference (χ ² =18.574, P<0.001)
	female	69	245	
Ou, 2018	male	75	308	No significant difference ( $\chi^2$ test).
	female	152	717	
Xu, 2015	male	103	182	No significant difference ( $\chi^2$ test).
	female	144	275	
Liu, 2019	male	691	3697	Significant difference ( $\chi^2$ =109.55, P<0.001)
	female	116	1067	-
Liu, 2017	male	122	624	No significant difference ( $\chi^2$ test).
	female	395	2093	4
Shen, 2018	male	436	788	Significant difference ( $\chi^2$ =5.160, P=0.023).
	female	132	313	
Wan,2013	male	23	81	No significant difference ( $\chi^2$ test).
	female	78	311	
Zhou, 2016	male	6	5	No significant difference ( $\chi^2$ test).
	female	261	453	
12-Age				
Author	Group	TI	Non-TI	Results
Sun, 2013	$\leq$ 24	166	229	Significant difference ( $\chi^2$ =11.73, P=0.019);
	25-34	497	732	25-34, OR=0.740, 95%CI=0.549-0.996;
	35-44	368	589	≥55, OR=0.518, 95%CI=0.296-0.905
	45-54	159	290	
	≥ 55	54	128	
Liu JL, 2019	< 30	606	1318	Significant difference ( $\chi^2$ test , P<0.001);

< 30, OR=1.21, 95%CI=1.01-1.45;

31-40

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### BMJ Open

	≥41	328	1022	31-40, OR=1.29, 95%CI=1.08-1.54
Xu, 2012	≤25	5	125	Significant difference ( $\chi^2$ =25.786, P=0.001
	25-34	26	270	
	35-44	6	240	
	45-54	9	168	
	≥ 55	2	72	
Xu, 2015	< 25	21	40	No significant difference ( $\chi^2$ test)
	25-34	131	195	
	35-44	69	143	
	$\geq$ 45	21	63	
Zhang, 2013	< 25	15	78	Significant difference (χ ² =10.553, P=0.032
	25-29	9	130	
	30-34	3	76	
	35-39	5	61	
	$\geq$ 40	2	46	
Gu, 2012	< 29	19	12	Significant difference ( $\chi^2$ =10.177, P=0.017
	30-39	30	9	
	40-49	8	12	
	> 50	15	17	
Yao, 2011	< 25	37	32	No significant difference ( $\chi^2$ test)
	25-34	66	57	
	35-44	37	43	
	45-55	19	16	
	>55	7	9	
Lu, 2018	≤30	11	24	Significant difference (χ ² =9.298, P=0.026).
	31-40	142	261	
	41-50	104	250	
	51-60	42	117	
	>60	20	66	
Ou, 2018	Mean	34.69 ± 7.29	36.06 ±	Significant difference ( $\chi^2$ =2.530, P=0.012).
,			8.0	
Liu, 2019	< 25	84	498	Significant difference ( $\chi^2$ test, P<0.001)
,,	25-34	601	3466	- <del>,</del> , , , , , , , , , , , , , , , , , ,
	35-44	606	4884	
	45-54	497	4857	
	55-59	55	587	
	$\geq$ 60	15	77	
Shen, 2018	18-29	20	22	Significant difference (χ ² =13.724, P=0.017
	30-39	140	241	
	40-49	223	406	
	50-59	110	218	
	50 57	110	210	

	$\geq 70$	8	24	
Zhou,2016	$\leq 28$	143	179	Significant difference ( $\chi^2$ =37.40, P<0.01).
	29-35	75	101	
	$\geq$ 36	48	186	
Wan, 2013	< 25	20	107	Significant difference ( $\chi^2$ =9.433, P=0.009).
	25-44	76	234	
	≥ 45	5	51	
Liu, 2017	< 25	15	78	Significant difference ( $\chi^2$ =10.553, P=0.032)
	25-29	9	130	
	30-34	3	76	
	35-39	5	61	
	≥40	2	46	

### A3-Education

Author	Group	ТІ	Non-TI	Results
Sun, 2013	Secondary technical	239	409	No significant difference ( $\chi^2$ test)
	school and below			
	Junior college	544	846	
	Bachelor	445	698	
	Master and above	16	15	
Zhou, 2016	Secondary technical	22	60	Significant difference ( $\chi^2$ =10.07, P=0.01).
	school and below			
	Junior college	134	259	
	Bachelor and above	112	144	
Liu JL, 2019	Low	16	68	Significant difference ( $\chi^2$ test , P=0.008);
	Medium	1021	2582	Medium, OR=1.46, 95%CI=0.83-2.58;
	High	431	928	High, OR=1.72, 95%CI=0.96-3.09
Fang, 2014	Secondary technical	577	987	No significant difference ( $\chi^2$ test)
	school and below			
	Junior college	104	181	
	Bachelor	8	13	
	Master and above	6	13	
Xu, 2012	Secondary technical	352	14	Significant difference ( $\chi^2$ test , P=0.052)
	school and below			
	Junior college	399	22	
	Bachelor	124	12	
Yao, 2011	Secondary technical	30	42	Significant difference ( $\chi^2$ =3.767, P=0.035
	school and below	135	112	
	Junior college and			
	above			

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Ou, 2018	Secondary technical	121	610	No significant difference ( $\chi^2$ test)
	school and Junior	104	400	
	college			
	Bachelor	2	15	
	Master and above			
Zhang, 2013	Secondary technical	7	119	No significant difference ( $\chi^2$ test)
	school and below			
	Junior college	24	233	
	Bachelor and above	3	39	
Liu,2017	Secondary technical	45	283	Significant difference ( $\chi^2$ =5.047, P=0.080).
	school and below			
	Junior college	207	956	
	Bachelor and above	268	1502	
Xu, 2015	Secondary technical	60	152	Significant difference ( $\chi^2$ =18.689, P=0.005)
	school and below			
	Junior college	142	258	
	Bachelor and above	44	42	
Wan, 2013	Secondary technical	24	113	No significant difference ( $\chi^2$ test)
	school and below			
	Junior college and	77	276	
	above			
Shen,2018	Middle school and	48	96	No significant difference ( $\chi^2$ test)
	below			
	High school	38	93	
	Secondary technical			
	school	366	695	
	Junior college	108	193	
	Bachelor and above	8	24	
Liu, 2019	Middle school and	18	231	Significant difference (χ ² =190.53, P<0.001)
	below			Secondary technical school, OR=9.19,
	Secondary technical	397	4721	95%CI=1.27-66.26.
	school			
	Junior college	757	5850	
	Bachelor	655	3488	
	Master	27	77	
	Doctor	4	2	
14- Region				
Author	Group	TI	Non-TI	Results
Sun, 2013	Hubei	307	168	No significant difference ( $\chi^2$ test)
	Guizhou	254	381	

Shen, 2018	Clinical medicine	442	803	No significant difference ( $\chi^2$ test)
Author	Group	TI	Non-TI	Results
7- Major				
	wintofity	JI	105	
Shen, 2018	Ethnic Han Minority	517 51	998 103	No significant difference ( $\chi^2$ test)
Sh 2010				
Wan, 2013	Ethnic Han Others	60 41	254 138	No significant difference ( $\chi^2$ test)
Author	Group	TI 60	Non-TI	Results
6- Nation	<u> </u>			
	divorce	0	4	
	married	17	276	
Liu, 2017	unmarried	17	111	Significant difference ( $\chi^2$ =7.091, P=0.008)
	others	6	13	4
	married	173	342	
Zhou, 2016	unmarried	90	113	Significant difference ( $\chi^2=7.45$ , P=0.05)
	divorce	1	12	•
	married	72	267	
Wan, 2013	unmarried	28	111	No significant difference ( $\chi^2$ test)
	others	9	20	
	married	160	310	
Xu, 2015	unmarried	75	125	No significant difference ( $\chi^2$ test)
	divorce	3	20	
	married	184	828	
Ou, 2018	unmarried	40	177	No significant difference ( $\chi^2$ test)
	others	0	41	
	married	35	655	
Xu, 2012	unmarried	13	189	Significant difference ( $\chi^2$ =17.447, P=0.002)
	married	1065	2665	
Liu JL, 2019	unmarried	403	913	No significant difference ( $\chi^2$ test)
Author	Group	TI	Non-TI	Results
5- Marital st	tatus			
	ofball region	139	930	
	Urban region	139	930	
Liu, 2017	Remote village Normal village	215	847 988	Significant difference ( $\chi^2$ =10.414, P=0.005)
Liu, 2017		166	847	Significant difference (2-10 414 D=0.005)
	Zhejiang	229	303	

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	Clinical Chinese			
	medicine	12	36	
	Public health	28	38	
	Nursing	2	3	
	Pharmacy	9	31	
	Other medical			
	specialties	18	47	
	Other non-medical			
	specialties			
Wan, 2013	Clinical medicine	44	118	Significant difference ( $\chi^2$ =8.597, P=0.014).
	Nursing	41	168	
	Others	16	106	

### **B1-** Occupation

Author	Group	TI	Non-TI	Results
Sun, 2013	Doctor	444	706	Significant difference ( $\chi^2$ =12.305, P=0.006);
	Nurse	444	612	Medical technician, OR=0.796, 95%CI=0.645-
	Medical technician	231	455	0.982.
	Public health	125	195	
	worker			
Xu, 2012	Doctor	24	346	No significant difference ( $\chi^2$ test)
	Nurse	14	307	
	Public health	6	76	
	Administrative staff	1	48	
	Medical technician	3	98	
	worker			
Yao, 2011	Doctor	67	109	Significant difference ( $\chi^2$ =18.558, P=0.026).
	Public health	12	2	
	worker			
	Pharmacist	12	16	
	Nurse	60	83	
	Medical technician	7	4	
	Administrative staff	12	8	
Ou, 2018	Doctor	101	394	Significant difference ( $\chi^2$ =15.028, P=0.002).
	Nurse	94	397	Medical technician, , OR=0.397, 95%CI=0.22
	Public health	17	64	0.717
	worker			
	Medical technician	15	170	
Liu, 2017	Doctor	204	1217	Significant difference ( $\chi^2=20.673$ , P<0.001)
	Nurse	199	831	
	Medical technician	104	556	
	Administrative staff	13	158	

Author	Group	TI	Non-TI	Results
Sun, 2013	No title	110	219	Significant difference ( $\chi^2$ =12.305, P=0.016)
	Junior title	693	994	
	Middle title	388	651	
	Senior title	53	104	
Wan, 2013	No title	42	200	No significant difference ( $\chi^2$ test)
	Junior and Middle	57	175	
	title			
	Senior title	2	17	
Liu JL, 2019	Medical assistant	491	1213	No significant difference ( $\chi^2$ test)
	Resident physician	635	1500	
	Attending physician	262	646	
	Associate chief	58	166	
	physician			
	Chief physician	22	53	
Xu, 2012	No title	6	108	No significant difference ( $\chi^2$ test)
	Junior title	29	504	
	Middle title	11	223	
	Senior title	2	40	
Yao, 2011	No title	25	15	No significant difference ( $\chi^2$ test)
	Junior title	101	100	
	Middle title	36	34	
	Senior title	7	8	
Ou, 2018	Junior title	152	680	No significant difference ( $\chi^2$ test)
	Middle title	67	306	
	Senior title	8	39	
Xu, 2015	No title	102	226	No significant difference ( $\chi^2$ test)
	Junior title	88	173	
	Middle title	22	64	
	Senior title	5	20	
Liu, 2019	Intern	229	1752	No significant difference ( $\chi^2$ test)
	Junior title doctor	746	6010	
	Middle title doctor	466	3589	
	Senior title doctor	417	3018	
Shen,2018	No title	320	646	No significant difference ( $\chi^2$ test)
	Junior title	219	383	
	Middle title	27	69	
	Senior title	2	3	
Zhou,2016	No title	19	14	Significant difference ( $\chi^2$ =22.04, P<0.01).
	Junior title	180	279	,
	Middle title	58	154	

### B2- Job title

	Senior title	2	19	
Liu, 2017	No title	9	80	No significant difference ( $\chi^2$ test)
	Junior title	270	1420	
	Middle title	229	1138	
	Senior title	5	70	
B3- Work seni	iority			
Author	Group	TI	Non-TI	Results
Sun, 2013	$\leq 1$ year	113	168	Significant difference ( $\chi^2$ =14.639, P=0.012)
	2–5 years	259	381	
	6–10 years	238	332	
	11–15 years	167	241	
	16–20 years	197	303	
	$\geq$ 20 years	270	543	
Wan, 2013	< 5 years	40	180	No significant difference ( $\chi^2$ test)
	5-19 years	53	148	
	$\geq$ 20 years	8	64	
Fang,2014	< 5 year	30	75	No significant difference ( $\chi^2$ test)
	5-15 years	193	287	
	15-25 years	196	336	
	$\geq$ 25 years	276	496	
Xu, 2012	< 3 years	20	288	Significant difference ( $\chi^2$ =16.816, P=0.002)
	3-5 years	14	315	
	$\geq$ 6 years	13	259	
Yao, 2011	<3 year	56	60	No significant difference ( $\chi^2$ test)
	3–5 years	39	39	
	6–9 years	25	21	
	$\geq$ 10 years	48	36	
Ou, 2018	Mean	9.51 ± 7.13	9.71 ± 7.	No significant difference ( $\chi^2$ test)
			77	
Zhang, 2013	$\leq$ 5 year	18	157	Significant difference ( $\chi^2$ =4.149, P=0.042).
	5–9 years	4	77	
	10-14 years	8	76	
	15-19 years	2	60	
	$\geq$ 20 years	2	55	
Shen,2018	0–9 years	31	43	Significant difference ( $\chi^2$ =13.599, P=0.018)
	10-19 years	160	310	
	20–29 years	212	358	
	30–39 years	98	194	
	40-49 years	63	179	

### **B4-** Qualified to practice

Group	TI	Non-TI	Results
Yes	528	925	No significant difference ( $\chi^2$ test)
No	167	269	
	Yes	Yes 528	Yes 528 925

### **B5-** Income

Author	Group	TI	Non-TI	Results
Liu JL, 2019	< 163.4	134	302	Significant difference ( $\chi^2$ test, P<0.001);
	163.5-326.7	618	1324	326.8-490.1, OR=1.26, 95%CI=1.02-1.55
	326.8-490.1	539	1310	
	≥ 490.2	177	624	
Fang,2014	The upper layer	0	4	Significant difference (χ ² =42.385, P<0.001)
	Between upper and	15	42	
	middle			
	Middle level	134	354	
	Between middle	320	540	
	and lower			
	The lower layer	222	250	
Lu,2018	The lower layer	216	415	Significant difference ( $\chi^2$ =10.952, P=0.012).
	Middle level	94	272	
	The upper layer	9	31	
Liu, 2019	< 1000RMB	41	79	Significant difference (χ ² =129.56, P<0.001);
	1001-3000 RMB	776	4874	5001-8000 RMB, OR=6.67, 95%CI=1.66-26.75
	3001-5000 RMB	932	8347	
	5001-8000 RMB	104	1046	
	8001-10000 RMB	0	17	
	$\geq$ 10001 RMB	5	6	
Wan, 2013	≤3000	94	334	Significant difference ( $\chi^2$ =4.340, P=0.037).
	>3000	7	58	

### **B6-** Medical institution

Author	Group	TI	Non-TI	Results
Liu JL, 2019	Township hospital	480	1027	Significant difference ( $\chi^2$ test, P<0.001);
	Center for Disease	131	485	CDC, OR=0.74, 95%CI=0.58-0.94;
	Control and			TCMH, OR=1.15, 95%CI=0.94-1.41.
	Prevention			
	Maternity and child	210	584	
	health hospital			
		249	490	

	Traditional Chinese			
	medical hospital	398	992	
	County general			
	hospital			
Yao, 2011	Community center	139	108	Significant difference ( $\chi^2$ =7.436, P=0.007).
	Community station	31	49	
Wan, 2013	County	94	334	Significant difference ( $\chi^2$ =4.340, P=0.037).
	Town	7	58	

### **B7-** Organizational affiliation

Author	Group	TI	Non-TI	Results
Xu, 2012	Establishment	21	499	No significant difference ( $\chi^2$ test)
	strength			
	Temporary	24	342	
	employment			
	Others	3	44	
Liu, 2019	Establishment	121	1016	Significant difference ( $\chi^2$ =48.24, P<0.001).
	strength			
	Long-term	214	1798	
	employment			
	Temporary	371	2023	
	employment			
	Others	56	381	
Liu,2017	Establishment	9	224	Significant difference ( $\chi^2$ =11.995, P<0.001).
	strength			
	Temporary	25	192	
	employment			

### **B8-** Re-employ after retirement

B8- Re-emp	loy after retirem	ent		2/
Author	Group	TI	Non-TI	Results
Xu, 2015	Yes	26	48	No significant difference ( $\chi^2$ test)
	No	200	371	

### **B9-** Turnover experience

Author	Group	ΤI	Non-TI	Results
Wan, 2013	No	55	224	No significant difference ( $\chi^2$ test)
	Yes	46	168	

### B10- Individual income levels in the local

Author	Group	TI	Non-TI	Results
Fang,2014	The upper layer	0	4	Significant difference (χ ² =42.385, P<0.001)
	Between upper and	15	42	
	middle			
	Middle level	134	354	
	Between middle	320	540	
	and lower			
	The lower layer	222	250	
Lu,2018	The lower layer	216	415	Significant difference (χ ² =10.952, P=0.012)
	Middle level	94	272	
	The upper layer	9	31	

### **B11-** Work stress

Author	Group	TI	Non-TI	Results
Ou, 2018	High	166	567	Significant difference ( $\chi^2=24.291$ , P<0.001);
	Low	61	458	Yes, OR=2.179, 95%CI=1.572-3.019.
Wan, 2013	High	61	182	Significant difference ( $\chi^2=2.271$ , P=0.040).
	Not too bad	29	159	
	Low	11	51	
Xu, 2015	High	147	211	Significant difference ( $\chi^2$ =16.715, P=0.002).
	Not too bad	77	204	
	Low	21	41	
Liu, 2019	Very high	849	3458	Significant difference (χ ² =424.24, P<0.001);
	High	783	8525	High, OR=0.41, 95%CI=0.25-0.65
	Not too bad	118	777	
	Low	89	1418	
	Very low	19	191	O,
Zhou, 2016	Very high	75	42	Significant difference (χ ² =50.40, P<0.01).
	High	116	216	
	Low	78	212	

### **B12-** Emotional Exhaustion

Author	Group	ΤI	Non-TI	Results
Shen, 2018	Severe	288	299	Significant difference ( $\chi^2 = 105.750$ , P<0.001)
	Moderate	162	349	Severe, OR=2.436, 95%CI=1.695-3.500
	None	118	453	
Lu, 2018	Bad	215	147	Significant difference ( $\chi^2 = 400.485$ , P<0.001)
	Not too bad	63	211	
	Good	41	360	

B13- Flatten	ing of affect			
Author	Group	TI	Non-TI	Results
Shen, 2018	Severe	128	138	Significant difference ( $\chi^2 = 105.750$ , P<0.001)
	Moderate	332	648	Severe, OR=1.626, 95%CI=1.064-2.485;
	None	108	315	Moderate, OR=1.486, 95%CI=1.069-2.066.

### **B14-** Public health service

Author	Group	TI	Non-TI	Results
Zhang, 2015	More participation	38	66	Significant difference ( $\chi^2$ =6.89, P<0.01).
	Less participation	11	52	

### B15- Working hours

Author	Group	TI	Non-TI	Results
Wan, 2013	$\leq 40$	26	131	Significant difference ( $\chi^2=12.033$ , P=0.002).
	41-59	40	187	
	$\geq 60$	35	73	

### **B16-** Career planning

Author	Group	TI	Non-TI	Results
Wan, 2013	No	14	55	Significant difference ( $\chi^2=2.553$ , P=0.012).
	In-between	68	231	
	Yes	14	110	

### B17- Career identity (be pound of this job)

Author	Group	TI	Non-TI	Results
Wan, 2013	No	11	45	No significant difference ( $\chi^2$ test)
	In-between	47	166	
	Yes	46	181	

### **B18-** Social status

Author	Group	ΤI	Non-TI	Results
Lu, 2018	High	171	521	Significant difference ( $\chi^2$ =50.815, P<0.001).
	Low	148	187	
Xu,2015	Dissatisfied	21	9	Significant difference (χ ² =217.296, P=0.002)
	Not too bad	79	108	
	Satisfied	146	328	
Wan, 2013	Dissatisfied	7	18	No significant difference ( $\chi^2$ test)
	Not too bad	54	187	

Satisfied	40	187	

### **B19-** Influence family life

Author	Group	TI	Non-TI	Results
Sun, 2013	Yse	108	150	No significant difference ( $\chi^2$ test)
	No	1136	1818	

### **B20-** Living condition

Author	Group	TI	Non-TI	Results
Xu, 2015	Dissatisfied	126	176	Significant difference (χ ² =26.907, P<0.001).
	Not too bad	97	213	
	Satisfied	23	67	
Wan, 2013	Dissatisfied	7	56	No significant difference ( $\chi^2$ test)
	Not too bad	56	223	
	Satisfied	38	113	

### **B21-** Lack of insurance

Author	Group	TI	Non-TI	Results
Shen, 2018	Yes	473	965	Significant difference ( $\chi^2$ =5.228, P=0.022);
	No	95	236	Yes, OR=1.769, 95%CI=1.291-2.423.
B22- Patient	trust		1	

### **B22-** Patient trust

Author	Group	TI	Non-TI	Results
Wan, 2013	No	5	8	No significant difference ( $\chi^2$ test)
	In-between	45	162	
	Yes	51	222	

### C1- Learning and training opportunity

Author	Group	TI	Non-TI	Results
Xu, 2015	Satisfied	7	35	Significant difference (χ ² =22.697, P<0.001)
	Not too bad	100	243	
	Dissatisfied	140	178	
Shen, 2018	Yse	236	394	Significant difference ( $\chi^2$ =5.297, P=0.021).
	No	332	707	
Wan, 2013	Dissatisfied	50	89	Significant difference ( $\chi^2$ =5.549, P<0.001).
	Not too bad	45	226	
	Satisfied	6	76	

### **C2-** Promotion and individual development space

Author	Group	ΤI	Non-TI	Results
Fang, 2014	Dissatisfied	209	132	Significant difference ( $\chi^2 = 113.797$ , P<0.001)
	Not too bad	292	562	Not too bad, OR=0.655, 95%CI=0.475-0.905
	Satisfied	194	500	
Wan, 2013	Dissatisfied	50	78	Significant difference ( $\chi^2 = 5.743$ , P<0.001).
	Not too bad	42	230	
	Satisfied	9	84	
Xu, 2015	Dissatisfied	135	110	Significant difference ( $\chi^2 = 84.791$ , P<0.001).
	Not too bad	92	220	
	Satisfied	20	124	

### C3- Interpersonal relationship

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	107	47	Significant difference ( $\chi^2 = 107.351$ , P<0.001).
	Not too bad	181	216	
	Satisfied	407	931	
Wan, 2013	Dissatisfied	7	9	Significant difference ( $\chi^2 = 2.684$ , P=0.007).
	Not too bad	46	144	
	Satisfied	48	239	
Xu, 2015	Dissatisfied	9	5	Significant difference ( $\chi^2 = 21.398$ , P<0.001).
	Not too bad	82	109	
	Satisfied	156	342	

### C4- Work conditions and environment

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	231	133	Significant difference ( $\chi^2 = 159.456$ , P<0.001);
	Not too bad	224	372	Not too bad, OR=1.604, 95%CI=1.172-2.194;
	Satisfied	240	689	Dissatisfied, OR=2.406, 95%CI=1.686-3.435.
Lu,2018	Dissatisfied	174	204	Significant difference ( $\chi^2 = 168.223$ , P<0.001).
	Not too bad	116	286	
	Satisfied	29	228	
Xu, 2015	Dissatisfied	91	59	Significant difference ( $\chi^2 = 84.959$ , P<0.001)
	Not too bad	122	243	
	Satisfied	34	120	
Wan, 2013	Dissatisfied	24	61	Significant difference ( $\chi^2=25.4$ , P<0.001).
	Not too bad	68	243	
	Satisfied	9	88	
Zhou,2016	Good	92	290	Significant difference ( $\chi^2$ =54.16, P<0.01)
	Bad	177	175	

### C5- Individual value embodiment

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	123	62	Significant difference ( $\chi^2 = 97.266$ , P<0.001)
	Not too bad	236	343	
	Satisfied	336	789	
Lu,2018	Dissatisfied	161	217	Significant difference ( $\chi^2 = 286.382$ , P<0.001)
	Not too bad	83	319	
	Satisfied	75	182	
Wan, 2013	Dissatisfied	7	9	No significant difference ( $\chi^2$ test)
	Not too bad	46	144	
	Satisfied	48	239	

### C6- Scientific research atmosphere

Author	Group	TI	Non-TI	Results
Sun, 2013	Yse	22	49	No significant difference ( $\chi^2$ test)
	No	1222	1919	

### C7- Level of attention by leaders

5	5			
Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	103	52	Significant difference (χ ² =94.244, P<0.001)
	Not too bad	216	271	
Sa	Satisfied	376	871	
Xu,2015	Dissatisfied	59	41	Significant difference ( $\chi^2 = 51.405$ , P<0.001)
	Not too bad	135	212	
S	Satisfied	53	201	
Wan, 2013	Dissatisfied	18	26	Significant difference ( $\chi^2$ =4.346, P<0.001)
	Not too bad	69	244	
	Satisfied	14	122	

### **C8-** Income satisfaction

Author	Group	TI	Non-TI	Results
Fang, 2014	Satisfactory	18	95	Significant difference ( $\chi^2 = 121.542$ , P<0.001)
	Not too bad	177	548	Satisfactory, OR=0.284, 95%CI=0.161-0.501;
	Dissatisfactory	500	551	Not too bad, OR=0.536, 95%CI=0.418-0.689.
Lu,2018	Satisfactory	20	120	Significant difference ( $\chi^2 = 18.128$ , P<0.001).
	Not too bad	29	147	
	Dissatisfactory	270	451	
Xu, 2015	Dissatisfied	196	273	Significant difference ( $\chi^2$ =38.497, P<0.001).

	Not too bad	45	150	
	Satisfied	5	32	
Wan, 2013	Dissatisfied	70	174	Significant difference ( $\chi^2 = 4.608$ , P<0.001).
	Not too bad	29	183	
	Satisfied	2	35	
Shen, 2018	0-19%	12	7	Significant difference ( $\chi^2 = 121.542$ , P<0.001
	20-39%	131	180	0-19%, OR=20.738, 95%CI=3.815-121.717;
	40-59%	893	578	20-39%, OR=6.101, 95%CI=1.573-23.665;
	60-79%	339	148	40-59%, OR=5.567, 95%CI=1.490-21.469;
	80-99%	75	59	60-79%, OR=4.457, 95%CI=1.148-17.299.
	100%	32	29	

### C9- Keep busy and fulfilling

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	89	55	Significant difference ( $\chi^2 = 63.259$ , P<0.001)
	Not too bad	186	235	
	Satisfied	420	904	
Wan, 2013	Dissatisfied	7	7	Significant difference ( $\chi^2 = 3.827$ , P<0.001)
	Not too bad	65	197	
	Satisfied	29	188	
Lu,2018	Dissatisfied	311	556	Significant difference ( $\chi^2 = 127.627$ , P<0.001)
	Not too bad	5	99	
	Satisfied	3	63	
Xu, 2015	Dissatisfied	49	26	Significant difference ( $\chi^2 = 60.244$ , P<0.001)
	Not too bad	144	227	
	Satisfied	53	201	
Shen, 2013	Severe deficiency	338	497	Significant difference (χ ² =34.028, P<0.001)
	Moderate	86	269	Severe deficiency, OR=2.436, 95%CI=1.695
	deficiency			3.500.
	Little deficiency	144	335	
	and none			

### C10- The competence of my manager in making decisions

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	82	24	Significant difference ( $\chi^2 = 107.944$ , P<0.001);
	Not too bad	184	219	Dissatisfied, OR=2.017, 95%CI=1.068-3.807
	Satisfied	429	951	
Xu,2015	Dissatisfied	82	50	Significant difference ( $\chi^2 = 81.415$ , P<0.001)
	Not too bad	123	212	
	Satisfied	42	191	

Wan, 2013	Dissatisfied	16	28	No significant difference ( $\chi^2$ test)	
	Not too bad	62	263		
	Satisfied	23	101		

### C11- Work stability

Author	Group	ΤI	Non-TI	Results
Fang, 2014	Dissatisfied	110	30	Significant difference ( $\chi^2 = 148.266$ , P<0.001)
	Not too bad	225	286	Dissatisfied, OR=1.955, 95%CI=1.107-3.454
	Satisfied	360	878	
Wan, 2013	Dissatisfied	12	12	Significant difference ( $\chi^2 = 3.984$ , P<0.001)
	Not too bad	63	208	
	Satisfied	26	172	

### C12- Policies practice

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	148	67	Significant difference ( $\chi^2 = 145.606$ , P<0.001)
	Not too bad	261	357	Dissatisfied, OR=1.735, 95%CI=1.121-2.687
	Satisfied	286	770	
Zhou, 2016	Useful	93	282	Significant difference ( $\chi^2$ =45.22, P<0.01)
	Useless	152	162	
	Negative effect	21	20	
Wan, 2013	Dissatisfied	18	28	Significant difference ( $\chi^2$ =4.907, P<0.001).
	Not too bad	74	249	
	Satisfied	9	115	

### C13- The chance to try my own methods of doing the job

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	79	52	Significant difference ( $\chi^2$ =46.986, P<0.001)
	Not too bad	277	410	Dissatisfied, OR=0.560, 95%CI=0.335-0.936
	Satisfied	339	732	

### C14- The chance to do something that makes use of my abilities

Author	Group	TI	Non-TI	Results
Fang, 2014	Dissatisfied	68	27	Significant difference ( $\chi^2 = 84.353$ , P<0.001)
	Not too bad	213	251	
	Satisfied	414	916	
Wan, 2013	Dissatisfied	10	17	Significant difference ( $\chi^2$ =3.596, P=0.001).
	Not too bad	72	235	
	Satisfied	19	140	

### C15- Job satisfaction

Author	Group	TI	Non-TI	Results
Gu, 2012	Dissatisfied	14	2	Significant difference ( $\chi^2 = 16.928$ , P<0.001)
	Not too bad	40	18	
	Satisfied	18	30	
Lu,2018	Dissatisfied	85	102	Significant difference ( $\chi^2 = 51.182$ , P<0.001)
	Not too bad	166	397	
	Satisfied	68	219	
Zhou, 2016	Dissatisfied	76	27	Significant difference ( $\chi^2 = 109.40$ , P<0.01)
	Not too bad	134	181	
	Satisfied	61	261	

### C16- Work support

Author	Group	TI	Non-TI	Results
Xu, 2015	Dissatisfied	175	200	Significant difference ( $\chi^2 = 67.704$ , P<0.001)
	Not too bad	61	176	
	Satisfied	8	75	
Lu, 2018	Dissatisfied	308	458	Significant difference ( $\chi^2 = 234.402$ , P<0.001).
	Not too bad	10	140	
	Satisfied	1	120	

### C17- Income fairness

C17- Income	fairness		0		
Author	Group	ΤI	Non-TI	Results	
Zhou, 2016	Unfair	163	132	Significant difference ( $\chi^2$ =76.83, P<0.01).	
	Unclear	13	17		
	Fair	133	356		
Wan, 2013	Dissatisfied	1	4	Significant difference ( $\chi^2 = 3.912$ , P<0.001).	
	Not too bad	76	209		
	Satisfied	24	179		

### C18- Motivation and Salary System

Author	Group	TI	Non-TI	Results	
Xu, 2015	Dissatisfied	146	151	Significant difference ( $\chi^2 = 56.593$ , P<0.001)	
	Not too bad	85	209		
	Satisfied	13	94		
Zhou, 2016	Dissatisfied	109	93	Significant difference ( $\chi^2 = 56.55$ , P<0.001)	
	Not clear	29	19		
	Satisfied	133	356		

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Wan, 2013	Dissatisfied	49	89	Significant difference ( $\chi^2$ =5.363, P<0.00
	Not too bad	45	221	
	Satisfied	7	82	



## PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
Rationale	3	Describe the rationale for the review in the context of what is already known.	3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	Not applicable
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	4
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4-5
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	4
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	5
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	5
3 Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ² ) for each meta-analysis. For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml	5

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### **PRISMA 2009 Checklist**

	1	Page 1 of 2		
Section/topic	#	Checklist item	Reported on page #	
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	Not applicable	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	4	
RESULTS	_			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	5-6	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	6	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	7	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	7-8	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	7	
Risk of bias across studies			Not applicable	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	7	
DISCUSSION	1			
Summary of evidence	Summary of evidence 24 Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).		9-10	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).		
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	10	
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	10	

42 From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. 43 doi:10.1371/journal.pmed1000097

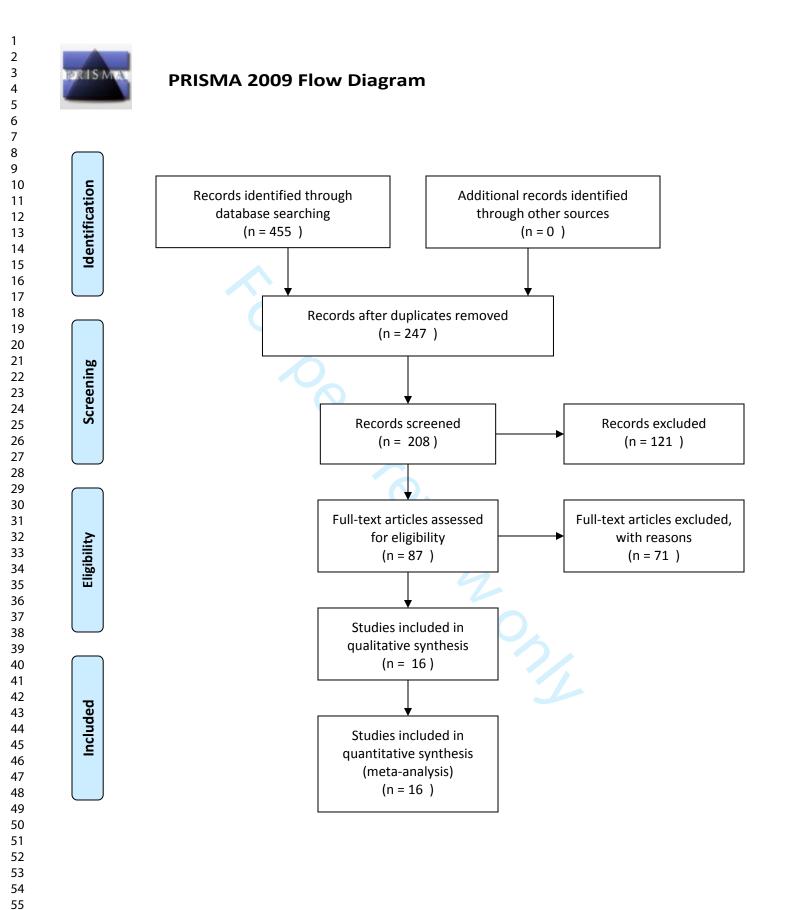
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### Turnover intention among primary health workers in China: a systematic review and meta-analysis

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### Turnover intention among primary health workers in China: a systematic review and meta-analysis

Rongxin He^{1,2}, Jinlin Liu^{1,2,5}, Zhang Wei-Hong³, Bin Zhu^{1,2,4}, Ning Zhang^{1,2}, Ying Mao^{1,2*}

- ¹ School of Public Policy and Administration, Xi'an Jiaotong University, 28 Xianning West Road, Xi'an 710049, China; herongxin@stu.xjtu.edu.cn (R.H.); zhangningati@stu.xjtu.edu.cn (N.Z.)
- ² Research Center for the Belt and Road Health Policy and Health Technology Assessment, Xi'an Jiaotong University, 28 Xianning West Road, Xi'an 710049, China
- ³ International Centre for Reproductive Health (ICRH), Ghent University, Ghent, Belgium; WeiHong,Zhang@UGent.be (Z.W.)
- ⁴ Department of Public Policy, City University of Hong Kong, Hong Kong, 999077, China; binzhu2c@my.cityu.edu.hk (B.Z.)

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- ⁵ Walter H. Shorenstein Asia-Pacific Research Center, Stanford University, Stanford, California 94305, USA; liujinlin_xjtu@163.com (J.L.)
- * Correspondence: Ying Mao. Email: mao_ying@mail.xjtu.edu.cn; Tel.: +86-029-8266-5482

### Abstract

**Objectives** To analyse the prevalence and determinants of turnover intention among primary health workers (PHWs) in China to provide evidence for improving retention measures.

Design Systemic review and meta-analysis.

**Data sources** Four English language databases (PubMed, EMBASE, Cochrane Library, PsycINFO) and three Chinese databases (CNKI, CSPD, CBM) were searched up to October 2019.

**Eligibility criteria** Eligible studies were observational or descriptive studies conducted in mainland China. The prevalence of turnover intention among health workers and related factors had to be explicitly reported in each included study.

**Data extraction and synthesis** Data were extracted by one author and reviewed independently by two other authors. For each factor analysed by a meta-analysis, the factor was required to be the same across different studies, and at least three studies had to include it. The quality of studies was assessed using the Newcastle–Ottawa scale and heterogeneity was evaluated using the I² statistic.

**Results:** We identified 16 cross-sectional studies investigating a total of 37,672 primary health workers. The prevalence of turnover intention was 30.4%. Subgroup analysis revealed that the highest prevalence was observed in the community primary health care institutions and the eastern provinces of China. Meta-analyses indicated that 21 factors were significantly associated with turnover intention, including demographic factors (gender, age, education, marital status), job characteristic factors (title, work seniority, remuneration, social status, organizational affiliation, work stress) and job satisfaction factors (learning and training opportunity, interpersonal relationship, work condition and environment and so on).

**Conclusion:** This study highlights the problem of turnover intention among PHWs in China. Efforts should be made to improve conditions in both work-related areas and areas outside of work. Policymakers should continue to improve reward systems, the construction of infrastructure, and promotion systems and pay more attention to PHWs' lives outside of work and meet their living needs.

### Strengths and limitations of this study

1) This systematic review provides supplemental evidence from China to global studies on the turnover intention of primary health workers.

2) Meta-analysis and narrative analysis are performed to identify the risk factors for turnover intention among primary health workers.

3) Due to the limitation and shortage of the current studies, significant heterogeneity among the individual studies evident after the subgroup analysis and part of the meta-analysis are performed.

### Introduction

Primary health care (PHC) addresses the majority of a person's health needs throughout their lifetime. The declaration of Astana declared that strengthening PHC is the most inclusive, effective and efficient approach to enhance people's physical and mental health and social well-being.[1] Primary health workers (PHWs) are direct providers of PHC, and their quantity directly determines the quantity, quality and outcomes of PHC.[2] These services should be provided with compassion, respect and dignity by health professionals who are well-trained, skilled, motivated and committed.[1] However, primary health institutions are facing significant labour shortages worldwide,[3] not only in low- and middle-income countries[2,4,5] but also indeveloped countries.[6,7] In China, PHC services including basic medical and public health services, are provided by community health centres and stations in urban areas and by township health centres and village clinics in rural areas.[8] These four types of PHC institutions constitute the essential part of China's three-tertiary health care delivery network. PHWs working inside include doctors, nurses, public health workers and administrative staff, most of them have to play multiple roles. Currently, PHC institutions are all facing the problem of staff turnover, aggravating the shortage of the health workforce[9], which has become one of the significant obstacles to strengthening China's primary healthcare services.[10]

Turnover, a behavior of actually leaving, was an important value in human resources management and maintenance of the current workforce[11]. Turnover intention (TI) is defined as the probability that an employee will leave his or her job within a specific period; [12] TI is considered to one of the best predictors of turnover behaviour.[13–16] Previous studies have explored the factors that influence the turnover intentions of PHWs. A variety of factors have been identified, such as demographic factors, [7, 17–22] job satisfaction,[18,20,22–25] work stress,[13,18,25] burnout, [23,26] quality of work-life, [21] interpersonal communication, [27] and violence from patients.[28] While these factors have been definitely linked with TI, some researchers have focused on factors outside of work. Han et al. [29] found that key factors of community integration influence overseas-trained doctors' decision to stay in or leave a rural community in Australia; Stewart et al.[17] reported that community satisfaction is a crucial predictor of intent to leave among rural and remote registered nurses in Canada; and Chao et al. and Lu et al. [12,13] demonstrated that there is a significant correlation between work-family conflict and the TI of PHWs in Taiwan and Guangdong.

In China, many empirical studies have been conducted. However, there is no consistent conclusion on the prevalence and determinates of TI among PHWs in China. Furthermore, most of them were published in Chinese, only a few studies on TI and risk factors for PHWs have been published in international journals, and no related systematic reviews have been found in either Chinese or

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English. Therefore, this study aims to examine the prevalence of TI and identify the related factors among PHWs in China by conducting a systemic review and meta-analysis.

### Method Literature search

This systematic review and meta-analysis were performed following the PRISMA guidelines.[30,31] A systematic search of the literature was conducted up to October 2019 using four English language databases (PubMed, EMBASE, Cochrane Library, PsycINFO) and three Chinese databases (CNKI, CSPD and CBM). No limits were applied for language and publication dates of coverage. The search strategy was based on a combination of "(Turnover Intention, or Departure Intention, or Demission Intention, or Leave Intention, or intent to leave), AND (Primary, Community, Rural, Countryside, District, Basic, Fundamental or Grassroots), AND (Health worker, Health officer, Health Manpower, Health Personnel, Medical Personnel, Medical worker, Medical staff, Doctor, Physician, or Nurse) and (China, or Chinese)". References of the retrieved studies were also checked and screened. The full search strategy can be found in the Supplementary Tables S1.

### Study eligibility

Eligible studies were published studies that reported the prevalence and related determinants of TI among Chinese PHWs. The eligibility criteria included the following: (1) types of studies: original cross-sectional studies (those presenting non-original data, such as reviews, editorials, opinion papers, or letters to the editor, were excluded); (2) types of participants: Chinese PHWs; (3) types of risk factor: demographic factors, job characteristic factors and job satisfaction factors. (4) types of outcome measures: the prevalence of TI and related factors reported in the study.

Eligibility assessment was conducted to screen the titles, abstracts and full texts of the identified studies by two reviewers independently. Disagreements on which studies should be included or excluded were resolved by full group consensus.

### Data extraction

A piloted form referred to the Cochrane Effective Practice and Organization of Care Review Group (EPOC) data collection checklist,[32] was used to extract relevant data from the included full-text studies. The following data were extracted: author, publication year, location where the study was carried out, participants, sample size, number of cases, assessment tools, prevalence of TI and related factors. Data extraction was conducted by one author and reviewed independently by two other authors, with disagreements resolved by discussion until consensus was reached. The interrater reliability for title screening between two authors was 96.15%, and for abstract screening was 94.74%. The full inter-rater reliability result can be found in the Supplementary Tables S2.

### Quality assessment

The quality of studies was assessed using a modified Newcastle-Ottawa Scale[33], as recommended by the Cochrane Collaboration[34]. Studies received scores based on the design-specific sources of

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bias, methods for selecting participants, exposure measures, outcome variables and methods to control confounders[35]. The total score was 7 points, and all the included studies were grouped according to their scores, which were categorized as good (6–7), moderate (3–5) and poor (1–2). Specifically, a study with a sample size of less than 1000 was regarded as having poor representativeness of the sample (score = 0, otherwise = 1); a cross-sectional study with a response rate lower than 80% or without reporting a response rate was considered a poor-quality study (score = 0, otherwise = 1). Meanwhile, if statistical methods used in the study was exact, we considered statistical test to be appropriate (score = 1, otherwise = 0), even if there was no further multivariate analysis. Three authors independently scored all included studied, with disagreements resolved by discussion until consensus was reached.

### Data synthesis and statistical analysis

The primary outcome in this review was the difference in the prevalence or relative risk of TI among different groups. The prevalence of TI was estimated as the total number of TI cases divided by the total number of PHWs participating in the study. It was assessed via single-arm analysis. We compared the difference in TI between PHWs from different regions and institutions by subgroup analyses. The secondary outcome of this study was the association between factors and TI among PHWs in the form of the odds ratio. Each factor analysed by a meta-analysis, required related variables in the questionnaire to be the same in different studies, which meant that it was feasible to merge the factor into two groups; meanwhile, at least three studies related to each factor had to be included in the meta-analysis. When the meta-analysis was performed, the significance of the pooled odds ratio (OR) was determined by the Z-test. Heterogeneity was estimated by the Q statistic and evaluated using the I² statistic.[36] A fixed-effect model was used to compute the summary risk estimate if there was no heterogeneity among the studies, whereas a random-effects model was used when heterogeneity existed ( $I^2 \ge 50\%$ ).[37] Publication bias was evaluated using Egger's test. All statistical analyses were performed using Stata V13.0 and RevMan V5.3. A two-tailed p value of <0.05 was considered to be statistically significant. We referred to the Meta-analysis of Observational Studies in Epidemiology (MOOSE) guideline.[38] If it was infeasible to make a quantitative synthesis and conduct a meta-analysis, a narrative approach and descriptive statistics were used by grouping studies that reported the same factors, and to compare their associations with the TI of PHWs.

### Patient and public involvement

Patients and the public were not involved in this study.

### Results

A total of 455 records were identified through our initial database search (PubMed: 13, Embase: 14, Coherence: 6, PsycINFO: 0, CNKI: 124, WAN FANG Data: 270, CBM: 28). After duplicate records

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were removed, 208 records were screened based on title and abstract. Eighty-seven articles were included in the full-text review. Among these, 63 articles were eliminated due to a lack of original data. Three articles were eliminated due to the inappropriate study designs. Five articles were excluded because of missing data on risk factors for TI. Ultimately, 16 studies were included in this study. No additional studies were obtained after the references of all 16 retrieved articles were checked. The study selection process is shown in Figure 1.

### Figure 1 Flow diagram of the study selection

### **Study characteristics**

Table 1 presents the main characteristics of all 16 studies. These studies were all cross-sectional and performed in 24 provinces of China between 2011 and 2019. The selected studies included 37,672 participants, with a median sample size of 1073 (range 127–16,157). Five studies were conducted in eastern China,[39–43] four in central provinces,[19,44–46] and four in the western region.[18,47–49] Four studies were conducted in urban areas,[39,40,44,50] eight in rural areas,[18,19,42,46–49,51] and four in both areas.[41,43,45,52] Thirteen studies used a dichotomous question to measure TI (Do you want to leave your job? Yes/No), and three studies used scales. All studies reported the prevalence and related factors of TI among PHWs.

Authors	Location	Research sites	Sample size rate %)	(Qualified	TI assessment tool	Prevalence of TI, N (%)	Ref. No
Xu,2012	Anhui	City community	1109(92.96%)		Dichotomous question	224 persons (20.2%)	5
Gu,2012	Shanghai,	City community	127(86.99%)		Dichotomous question	69 persons (56.69%)	7
Yao,2011	Guangdong	City community	335(95.7%)		Dichotomous question	178 persons (52.0%)	13
Lu,2018	Shandong	Rural area (village)	1037(98.57%)		The Self-made 10items 5-point Likert Turnover intention Scale	498 persons (48.02%) (Score of > 32 out of 50 means turnover intention)	15
Ou,2018	Guangdong	City community and Rural area	1252(87.43%)		Frah Turnover intention Scale	227 persons (18. 13%) (Score of > 3 out of 5)	17
Xu,2015	Guizhou	Rural area (township)	704(96.6%)		Dichotomous question	247 persons (35.10%)	19
Liu,2019	Not Stated	City community and Rural area	16157(100.00 <mark>%)</mark>		Dichotomous question	1858 persons (11.50%)	33
Zhang,2013	Shaanxi	Rural area (township)	425(99.53%)		Dichotomous question	34 persons (8.00%)	39
Liu,2017	Shanghai	City community and Rural area	3295(86.70%)		Dichotomous question	520 persons (15.80%)	49
Shen,2018	8 central provinces*	Rural area (village)	1669 (100.00%)		Dichotomous question	568 persons (34.03%)	54
Zhou,2016	Wuhan	City community and Rural area	755 (83.90%)		Michael & Spector Turnover intention Scale	278 persons (36.86%) (Score of > 3 out of 5)	55
Zhang,2015	Shandong, Anhui, Shanxi	Rural area (township)	167(100.00%)		Dichotomous question	49 persons (29. 34%)	63
Wan,2013	Yunnan	Rural area (township & county)	493(94.80%)		Dichotomous question	101 persons (29. 34%)	70
Fang,2014	Hubei	Rural area (village)	1889(97.88%)		Dichotomous question	695 persons (36.8%)	76
Sun,2013	5 provinces*	City community	3212(99.32%)		Dichotomous question	1243 persons (38.7%)	79
Liu JL,2019	11 western provinces*	Rural area (township & county)	5046(90.4%0%)		Dichotomous question	1468 persons (29.1%)	86

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*8 provinces: Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan, 5 provinces: Zhejiang, Guangdong, Guizhou, Hebei, and Hubei; 11 provinces: Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang, and Yunnan.

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Forty-seven factors were extracted from 16 included studies (Supplementary Tables S3). It included three groups: 7 demographic factors, 22 job characteristic factors, and 18 job satisfaction factors. The average quality score of the 16 included studies was 5.25 of 7 points, indicating a moderate research quality, according to the modified Newcastle-Ottawa scale (Supplementary Tables S4). All studies were of the medium and high quality.

### Prevalence of turnover intention among PHWs

Table 2 shows the prevalence of turnover intention among PHWs in China. The pooled prevalence was 30.4%. The highest prevalence was 54.3% reported by Gu et al.[39], whereas Zhang reported the lowest prevalence of 8.0%.[49] The subgroup analysis by region showed that, the highest prevalence was observed in the eastern China (37.6%), followed by central regions (31.9%). andwestern regions (23.2%). According to work setting, the highest prevalence occurred among PHWs working in the community), followed by rural PHWs working in townships and villages. With respect to sample size, the prevalence of TI was higher in studies having a sample size<1037 (35.5%) than in those with a sample size  $\geq 1037$  (25.5%). High heterogeneity was observed across the included studies due to the inconsistent research sites, regions and objects.

Table 2 Prevalence	of turnover	r intention among	PHWs in China
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Variables	Characteristic	Included studies	Prevalence (95%CI)	Q test (I ² )
Overall		16	0.304[0.240, 0.367]	99.5%
By region	East	5	0.376[0.231, 0.521]	99.3%
	Central	4	0.319[0.239, 0.399]	97.6%
	West	4	0.232[0.119, 0.345]	98.8%
By research site	Work in village	3	0.395[0.321, 0.470]	96.3%
	Work in township	5	0.234[0.144, 0.342]	98.4%
	Work in community	4	0.412[0.274, 0.551]	98.7%
By sample size	<1037	8	0.355[0.232, 0.478]	99.7%
	≥1037	8	0.255[0.174, 0.337]	98.8%

### Factors related to turnover intention among PHWs

All studies reported demographic factors or job characteristic factors and determined their associations with the TI of PHWs. Moreover, six studies explored the effects of job satisfaction factors, [19,42,45–48] and ninetheen factors were feasible for inclusion in the meta-analyses. Egger's linear regression tests on a natural logarithm scale of OR found no evidence of publication bias for the studies included in meta-analyses (Supplementary Tables S5).

### Demographic factors and turnover intention

The meta-analysis of demographic factors was based on 15 cross-sectional studies (Figure 2). Gender (male vs. female: OR:1.23),[18,19,48,50,52,40-47] age (younger vs. older: OR: 1.47),[40,41,44,48-50,52] and marriage status (unmarried vs. married, OR: 1.16)[18,41,4345,47,48] were significantly associated with TI in PHWs, which showed that the PHWs with higher risks of TI were male, were younger, had a higher education, were unmarried, and worked in the remote region. But education (low-education vs. high-education: OR:0.78).[18,19,41,43–46,48–50] was not statistically significant.

### Figure 2 Forest plots of demographic factors

### Job characteristic factors and turnover intention

Job characteristic factors were examined in nine studies (Figure 3). Job title (low-title vs. high-title: OR: 1.11),[18,40,41,43–46,48,50] work seniority (short vs. long: OR: 1.17),[40,46,49,50] organizational affiliation (strength vs. others: OR: 0.85),[41,44,52] and work stress (high vs. low: OR: 3.14)[43,45,47,48,52] were significantly associated with the TI of PHWs, which presented that the PHWs with higher risks of TI were those with shorter work seniority, higher work stress, and longer working hours. However, occupation (doctor vs. nurse: OR:1.05)[40,41,43,44,50] was not statistically significant.

Figure 3 Forest plots of job characteristic factors

### Job satisfaction factors and turnover intention

Six studies explored the association between job satisfaction factors and turnover intention (Figure 4). Overall job satisfaction (satisfied vs. dissatisfied: OR: 0.15),[39,42,45] promotion and individual development space (satisfied vs. dissatisfied: OR: 0.19),[19,47,48] interpersonal relationships (satisfied vs dissatisfied: OR: 0.20),[19,47,48] keep busy and fulfilling (satisfied vs dissatisfied: OR: 0.39),[19,42,47,48] sense of accomplishment (satisfied vs dissatisfied: OR: 0.16),[19,42,47] income satisfaction (satisfied vs dissatisfied: OR: 0.33),[19,42,46–48] work condition and environment (satisfied vs dissatisfied: OR: 0.19),[19,42,47,48] level of attention by leaders (satisfied vs dissatisfied: OR: 0.20),[19,47,48] the competence of my manager in making decisions (satisfied vs dissatisfied: OR: 0.18),[19,47,48] and motivation and salary system (satisfied vs dissatisfied: OR: 0.21)[45,47,48] were significantly associated with the TI of PHWs. The results showed that PHWs who dissatisfied their job had significantly higher risks of TI.

### Figure 4 Forest plots of job satisfaction factors

The remaining twenty-eight exposures were analysed for their associations with the TI of PHWs under a narrative approach. In the demographic factors group, PHWs who work in remote regions[41] and who have lower remuneration [18,47,52] and social status[42,47,48] were found to have significantly higher risks of TI. No significant associations were found between TI and the nation.[46,47] In addition, the associations between TI and major in clinical medicine are inconclusive.[46,47]

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Among job characteristic factors, seven were significantly associated with high risks of TI, including lower individual remuneration levels at the local level,[19,42] more severe emotional exhaustion,[42,46] more severe flattening of affect,[46] more participation in public health service,[51] longer working hours,[47] no career planning,[47] and lack of insurance.[46] No significant associations were found between TI and qualified to practice,[19] re-employ after retirement,[48] turnover experience,[47] career identity,[47] influence on family life,[50] patient trust.[47] In addition, the associations between TI and living condition is inconclusive.[47,48] Regarding job satisfaction factors, PHWs who are unsatisfied with work stability,[19,47] the chance to try their own methods of performing their job,[19] the chance to do something that makes use of their abilities,[19,47] work support,[42,48] policies practice,[19,45,47] and income fairness[45,47] were found to have significantly high risks of TI. However, no statistically significant associations were found between TI and the satisfaction with the scientific research atmosphere or learning and training opportunity.[46–48]

### Discussion

### **Principal findings**

This systematic review presents an overall prevalence of TI (30.4%) among Chinese PHWs which indicated that three of ten PHWs have TI. However, this finding is almost two times higher than that of some high-income countries. A study conducted in England showed that only 11.8% of primary care doctors had high turnover intention.[53] A survey including 23,159 nurses from 10 European countries showed that 9% of all these nurses intended to leave their profession, varying from 5% to 17% among countries[54] Another survey performed among 2,263 physicians in America reported that 18.4% of them intended to leave their practice.[55] A study conducted in Canada reported that 17.2% of registered nurses intended to leave their current nursing position.[17] Meanwhile, the prevalence of TI was lower than in some low- and middle-income countries, such as Ghana,[20] Iraq, [56] South Africa,[22] and the Philippines.[57]

The subgroup analysis indicated the variation in the prevalence of TI among regions. The possible explanations for this variation might be the difference in the level of social and economic development and the workplace. In East China, there are more urban hospitals than in other regions, providing more jobs, higher pay and a better work environment. It attracts many PHWs to move away from primary care practice.[58] As rural PHWs, they usually settled down in rural areas, lacking access to urban hospitals compared to peers in the urban community.

This study extracted a broad scope of fourty-seven related factors and determined their associations with the TI of PHWs, identifying a total of thirty-one demographic, job characteristic and job satisfaction risk factors.

Five demographic risk factors were determined to have significant associations with the TI of PHWs, which showed that the PHWs who were male, were younger, had a higher education, were

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unmarried, and worked in the remote region with high risks of TI. Some of these findings are in line with studies performed in South Africa, the Philippines, Canada, Saudi Arabia, Ghana and the Netherlands.[17,20–22,25,57] However, Bonenberger et al.[20] and Labrague et al.[57] showed that the association between gender and the TI of PHWs was not statistically significant. It can be concluded that different types of PHWs have unique characteristics of TI. Accordingly, we can sum up the high-risk population among PHWs. For example, the turnover intentions of an unmarried young practitioner who received full medical training could be expected to be higher than a married older practitioner with limited training. The policymakers and medical institutions managers should formulate or adjust retention measures based on these characteristics.

According to job characteristic factors, we concluded that PHWs who less shorter work seniority, higher work stress, and longer working hours had significantly higher risks of TI. All of these findings are consistent with prior studies. Nevertheless, some findings are inconsistent with prior studies. Remuneration was found to be statistically significant in the review, which is consistent with Almalki et al. [21] but Labrague et al. [57] reported an insignificant association between remuneration and TI. Occupation, and level of the medical institution were not significantly associated with TI in the review, in accordance with Warmelink et al.[25] and Labrague et al.[57] However, some studies reported the opposite results.[17,20] In addition, seven factors identified in the review were never or rarely reported in other countries, including title, social status, participation in public health service, insurance, career planning, emotional exhaustion or flattening of affect and authorized personnel, which were found to have significant associations with a high risk of TI among PHWs in China. Among these factors, "emotional exhaustion" and "flattening of affect" are measures of mental health status. In recent years, the mental health status of the health workforce has deteriorated due to increasing work stress and violence.[59,60] Some studies also found that mental health has significant associations with job satisfaction and job burnout.[18,26,61] In the context of COVID-19, all PHWs have been mobilized to fight the epidemic, which will undoubtedly have a negative impact on their mental health status. [62,63] The risk of TIs caused by mental health problems cannot be ignored.

There is a significant inverse association between job satisfaction and TI. In this review, we found that low overall job satisfaction reported significantly higher risks of TI among PHWs, which is in line with Bonenberger et al.,[20] Warmelink et al.[25] and Delobelle et al.[22] Furthermore, most of the job satisfaction factors are also significantly associated with the TI of PHWs. However, these specific job satisfaction factors have rarely been reported in previous studies.

Notably, compared with previous studies focused on the family factors,[17,21] our study did not find relevant evidence on family factors in China such as: community satisfaction, numbers of dependent family members, or family commitments.

### Limitations and strengths

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To our knowledge, this is the first systematic review (including meta-analysis) to determine potential risk factors for TI among Chinese PHWs. Our findings present an overview of the current evidence from mainland China. One strength of this review is that it estimated the prevalence of TI among Chinese PHWs based on a large sample size with a total of 16 cross-sectional studies and 37,672 participants. Another strength is that it determines the associations of a broad scope of potential risk factors. Limitations exist in this systematic review. Significant heterogeneity among the individual studies was found when the subgroup analysis and the part of meta-analysis were performed. The main reason is the heterogeneity between different studies in research region and research site. Due to the limitation and shortage of the current studies, it is hard to conduct a further study.

### **Literature Gaps**

Therefore, it can be concluded that there are many facets of the TIs among PHWs that need to be explored. First, the differences in TI by occupation within the different regions or institutions need to be explored. Second, there is insufficient research on the interaction effects of demographics and other factors. More research is needed to better represent and understand how two or more determinants work together to impact the TIs of PHWs. Third, the impact of family factors on TIs requires more attention. Last but not least, the relationship between public health services and the TIs of PHWs in the context of the COVID-19 is a worthy research issue.

### Conclusion

The analysis highlights the problem of turnover intentions among PHWs in China. There is a significant association between demographic factors, job characteristic factors, job satisfaction factors and turnover intentions. Policymakers should take into account all aspects of human needs that influence PHWs' intentions to stay. As illustrated by the Global Strategy on Human Resources for Health, it is particularly important to find pragmatic solutions to overcome deeply entrenched rigidities in public sector rules and practices that hinder the adoption of adequate reward systems, working conditions and career structures for health workers, with appropriate levels of flexibility and autonomy. [64] Therefore, efforts can be made to improve factors both at work and outside of work. In terms of work factors, policymakers should continue to improve reward systems, the construction of infrastructure, and promotion systems. Outside of work, authorities should pay more attention to PHWs' lives and meet their living needs to increase their willingness to work and live in communities, towns and villages. We also suggest that particular attention be given to PHWs working in the community or the eastern region of China to reduce their turnover intentions by implementing evidence-based health workforce policies.

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### Contributors

Rongxin He and Ying Mao conceived this research project. Jinlin Liu and Rongxin He developed the search strategy and Rongxin He searched the databases. Jinlin Liu, Bin Zhu, Zhangning and Rongxin He selected the studies. Rongxin He designed and executed the analyses, interpreted the findings, wrote the first draft, revised subsequent drafts, and prepared the manuscript. Ying Mao and Zhang Wei-Hong revised drafts of the manuscript.

### **Competing interests**

The authors declare that they have no competing interests.

### Data availability

All data relevant to the study are included in the article or uploaded as supplementary information. No additional data are available from the authors.

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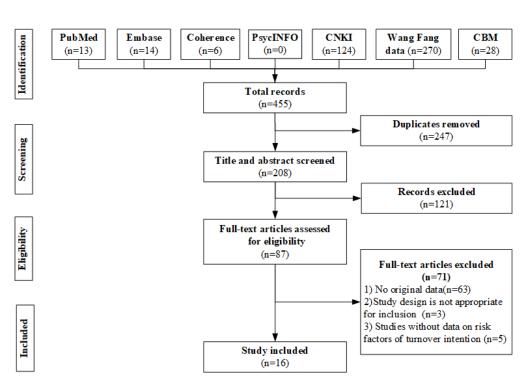


Figure 1 Flow diagram of the study selection

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Gender	Male Events		Fema Events		Moinht	Odds Ratio M-H, Random, 95% CI	Odds Ratio M-H, Random, 95% Cl
Fang 2014	483	1302	212	587	10.4%		M-H, Randolli, 95% Cl
						1.04 [0.85, 1.28]	L
Liu 2017	122	746	395	2488	9.8%	1.04 [0.83, 1.29]	
Liu 2019	691	4388	116	1183	10.2%	1.72 [1.40, 2.12]	
Liu JL 2019	465	1615	1003	3431	12.2%	0.98 [0.86, 1.12]	1
Lu 2018	250	723	69	314	7.7%	1.88 [1.38, 2.55]	-
Ou 2018	75	383	152	869	7.8%	1.15 [0.84, 1.56]	
Shen 2018	436	1224	132	445	9.5%	1.31 [1.04, 1.66]	-
Sun 2013	356	874	888	2338	11.5%	1.12 [0.96, 1.32]	+
Wan 2013	23	104	78	389	4.2%		
						1.13 [0.67, 1.91]	
Xu 2012	18	262	30	671	3.4%	1.58 [0.86, 2.88]	
Xu 2015	103	285	144	419	7.6%	1.08 [0.79, 1.48]	T
Yao 2011	51	90	117	232	4.6%	1.29 [0.79, 2.10]	
Zhou 2016	6	11	261	714	1.1%	2.08 [0.63, 6.89]	
Total (95% CI)		12007		14090	100.0%	1.23 [1.08, 1.40]	•
		12007		14000	100.070	1.25 [ 1.06, 1.40]	•
Total events	3079		3597			£	
Heterogeneity: Tau ²	= 0.03; Chi ^a	²= 35.21	, df = 12 i	(P = 0.0	004); I ² =	66%	0.01 0.1 1 10
Test for overall effec	t: Z = 3.13 (F	P = 0.002	2)				Favours [experimental] Favours [control]
	Younger (	<35)	Older (	≥35)		Odds Ratio	Odds Ratio
Age	Events		Events		Weight	M-H, Random, 95% C	
_iu 2017	27	311	7	114	3.4%	1.45 [0.61, 3.44	
_iu 2017	685	4649		11578	31.8%		
						1.53 [1.39, 1.70	
3un 2013	663	1624	581	1588		1.20 [1.04, 1.38	
(u 2012	31	395	15	480	5.9%	2.64 [1.40, 4.96	
(u 2015	152	387	105	389	16.6%	1.75 [1.29, 2.37]	]  -•-
rao 2011	103	192	63	131	10.2%	1.25 [0.80, 1.95	ן <b>∔</b> ∙−
Zhang 2013	27	311	7	114	3.4%	1.45 [0.61, 3.44	i ——
Fotal (95% CI)		7869		14394	100.0%	1.47 [1.24, 1.74]	. ♦
Fotal events	1688		1951				
Fotal events Heterogeneity: Tau² = Fest for overall effect:	0.02; Chi² =		df = 6 (P :	= 0.04);	I² = 56%		0.01 0.1 1 10 Favours (experimental) Favours (control)
Heterogeneity: Tau² =	: 0.02; Chi ² : Z = 4.50 (P Low-edu	< 0.0000	df = 6 (P = D1) High-e	ducatio	n	Odds Ratio	Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau ² = Fest for overall effect: Education	0.02; Chi² = Z = 4.50 (P Low-edu Events	< 0.0000 Ication Total	df = 6 (P = D1) High-e Events	ducatio s To	n (tal Wei)	ght M-H, Random, 95%	Favours [experimental] Favours [control] Odds Ratio 6 Cl M-H, Random, 95% Cl
Heterogeneity: Tau ² = Fest for overall effect: Education Fang 2014	: 0.02; Chi ^z : Z = 4.50 (P Low-edu Events 681	< 0.0000 cation <u>Total</u> 1849	df = 6 (P : D1) High-ea <u>Events</u> 1 1-	ducatio s To 4	n <u>Ital Wei</u> j 40 7	the M-H, Random, 95% 4% 1.08 [0.56, 2	Favours (experimental) Favours (control) Odds Ratio 6 Cl M-H, Random, 95% Cl .09]
Heterogeneity: Tau ² = Fest for overall effect: Education Fang 2014 Liu 2017	: 0.02; Chi [≠] : Z = 4.50 (P Low-edu Events 681 252	< 0.0000 ication <u>Total</u> 1849 1491	df = 6 (P = D1) High-er <u>Events</u> 1 26	ducatio <u>s To</u> 4 3 17	n <u>Ital Wei</u> 40 7 70 12	nt M-H, Random, 95% 4% 1.08 [0.56, 2 4% 1.14 [0.94, 1	Favours (experimental) Favours (control) Odds Ratio (C M-H, Random, 95% Cl .09) .38]
Heterogeneity: Tau [#] = Fest for overall effect: Education Fang 2014 Liu 2017 Liu 2019	: 0.02; Chi [≠] = Z = 4.50 (P Low-edu Events 681 252 1172	< 0.0000 cation <u>Total</u> 1849 1491 10802	df = 6 (P = D1) High-en <u>Events</u> 1 261 58	ducatio <u>s To</u> 4 3 17 3 35	n <u>Ital Wei</u> 40 7. 70 12. 167 12.	<b>ht <u>M-H, Random, 959</u></b> 4% 1.08 (0.56, 2 4% 1.14 (0.94, 1 9% 0.51 (0.46, 0	Favours (experimental) Favours (control) Odds Ratio 6 CI M-H, Random, 95% CI .09] .38] .57]
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Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Shun 2013 Xiu 2015 Zhang 2013 Zhou 2016 Total events Heterogeneity: Tau [≠]	2002; Chi ² = Z = 4.50 (P Low-edu Events 681 252 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ²	< 0.0000 tration Total 1849 1491 10802 610 1336 2038 787 612 383 475 20383 * = 97.01,	df = 6 (P = )1) High-ec <u>Events</u> 1 1. 268 1 208 1 208 1 101 4 46 1 111 4 46 1 111 1 46 1 111 1 46 1 111 1 46 1 111 1 46 1 111 1 1111 1 1111 1 1111 1 1111 1 1111 1 1111 1 1111 1 1111 1	ducatio <u>s To</u> 4 3 17 3 36 3 36 3 3 3 3 1 11 2 1 4 3 2 2 79 2	n tal Weij 40 7. 70 12. 67 12. 67 12. 33 11. 33 11. 33 11. 34 12. 36 9. 42 3. 56 11. 25 100.	MH, Random, 959           4%         1.08 (0.56, 2)           4%         1.04 (1.034, 1)           9%         0.51 (0.46, 0)           4%         1.41 (0.34, 1)           9%         0.51 (0.46, 0)           4%         0.41 (0.34, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.66, 1)	Favours (experimental) Favours (control) Odds Ratio CI M-H, Random, 95% CI 009 381 577 301 231 121 981 
Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Shun 2013 Xiu 2012 Xiu 2012 Xiu 2015 Zhang 2013 Zhou 2016 Total (95% CI) Total events	2002; Chi ² = Z = 4.50 (P Low-edu Events 681 252 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ²	< 0.0000 tration Total 1849 1491 10802 610 1336 2038 787 612 383 475 20383 * = 97.01,	df = 6 (P = )1) High-ec <u>Events</u> 1 1. 268 1 208 1 208 1 101 4 46 1 111 4 46 1 111 1 46 1 111 1 46 1 111 1 46 1 111 1 46 1 111 1 1111 1 1111 1 1111 1 1111 1 1111 1 1111 1 1111 1 1111 1	ducatio <u>s To</u> 4 3 17 3 36 3 36 3 3 3 3 1 11 2 1 4 3 2 2 79 2	n tal Weij 40 7. 70 12. 67 12. 67 12. 33 11. 33 11. 33 11. 34 12. 36 9. 42 3. 56 11. 25 100.	MH, Random, 959           4%         1.08 (0.56, 2)           4%         1.04 (1.034, 1)           9%         0.51 (0.46, 0)           4%         1.41 (0.34, 1)           9%         0.51 (0.46, 0)           4%         0.41 (0.34, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.66, 1)	Favours [experimental] Favours [control] Odds Ratio 6 Cl M-H, Random, 95% Cl 09] 38] 57] 30] 23] 4 98] 92] 92] 92] 92] 92] 92] 92] 92
Heterogeneity: Tau [#] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Sun 2013 Xu 2012 Xu 2012 Zhang 2013 Zhou 2016 Total (95% CI) Total events Heterogeneity: Tau [#] Test for overall effec	0.02; Chi ² Z = 4.50 (P Z = 4.50 (P <u>Events</u> 681 252 1172 121 452 783 36 202 31 156 = 0.14; Chi ² t Z = 1.80 (F <u>Unmarr</u>	< 0.0000 cation Total 1849 1491 10802 610 1336 2038 787 612 383 475 20383 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01, 2-97.01,	df = 6 (P = )1) High-ec <u>Events</u> 1 1. 266 688 1 100 1 100 1 110 1 46 1 11 1 46 1 11 1 46 1 11 1 46 1 11 1 46 1 11 1 11	ducatio <u>s</u> To 4 3 17 3 36 3 5 3 5 3 1 11 2 1 4 3 2 2 79 2 2 2 2 3 79 2 1 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	n tal Weir 40 7. 70 12. 67 12. 133 11. 133 11. 133 11. 134 12. 36 7. 86 90. 42 3. 56 11. 15 100. 125 100. 18 =	M.H., Random, 959           4%         1.08 (0.56, 2)           4%         1.41 (10.94, 1)           9%         0.51 [0.46, 0)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0]           4%         0.96 [0.83, 1]           7%         0.96 [0.83, 1]           0.50 [0.25, 0]         0.50 [0.25, 0]           0%         0.47 [0.30, 0]           5%         1.14 [0.33, 3]           2%         0.63 [0.46, 0]           0%         0.78 [0.60, 1]           91%         Odds Ratio	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] = Test for overall effect Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Sun 2013 Xu 2012 Xu 2012 Zhang 2013 Zhang 2013 Zhang 2013 Zhang 2013 Total events Heterogeneity: Tau [∓] Test for overall effec Marital status	0.02; Chi [≇] = Z = 4.50 (P Low-edu <u>Events</u> 681 252 1272 121 452 783 36 202 31 156 3886 = 0.14; Chi [#] t Z = 1.80 (F Unmarr Events	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>787</li> <li>612</li> <li>383</li> <li>475</li> <li>20383</li> <li>20384</li> <li>20385</li> <li>20385</li></ul>	df = 6 (P = 1) High-ee Events 266 3 266 4 68 1 10 3 46 1 11 4 4 1 11 4 4 1 11 4 4 1 11 4 4 1 11 4 4 1 12 4 4 1 12 1 1	ducatio s To 4 3 17 3 5 3 5 3 5 3 1 1 11 2 1 4 3 2 2 79 2 2 3 79 2 1 1 1 1 1 1 1 1 1 1 1 1 1	n tal Weij 40 7. 70 12. 67 12. 67 12. 13 11. 13 11. 13 11. 13 7. 13 7. 13 7. 14 12. 36 7. 86 9. 42 3. 56 11. 25 100. 001); I ^z =	M.H., Random, 959           4%         1.08 (0.56, 2)           4%         1.41 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.41 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.41 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 [0.60, 1.           91%            Odds Ratio           LH, Fixed, 95% CI	Favours (experimental) Favours (control) Odds Ratio Odds Ratio 009 
Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Shen 2018 Zhang 2013 Zhou 2015 Zhang 2013 Zhou 2016 Total events Heterogeneity: Tau [≠] Test for overall effec Marital status Liu 2017	:0.02; Chi ² = Z = 4.50 (P <u>Events</u> 681 252 1172 121 452 783 36 202 203 31 156 = 0.14; Chi ² t Z = 1.80 (F <u>Unmarr</u> <u>Events</u> 177 177 178 178 178 178 178 178	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>787</li> <li>612</li> <li>383</li> <li>475</li> <li>20383</li> <li>2 = 97.01</li> <li>2 = 0.07)</li> <li>ied</li> <li>Total E</li> <li>128</li> </ul>	df = 6 (P : 1) High-ee Events 268 100 110 100 111 182: 182: 182: 182: Marriec 2vents 1 17	ducatio s <u>s To</u> 4 3 17, 3 36, 5 5 5 3 5 5 5 1 1 1 1 1 1 1 1 2 2 2 7 9 7 9 7 9 7 9 7 9 2 2 2 2 3	n tal Weij 40 7. 70 12. 67 12. 67 12. 133 11. 133 11. 133 11. 133 11. 133 11. 136 7. 86 9. 42 3. 256 11. 156 100. 001); I [≠] = <u>Veight N</u> 1.5%	M.H. Random. 959           4%         1.08 (0.56, 2.4)           4%         1.4 (1.04, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.96 (0.74, 1)           7%         0.96 (0.25, 0)           0%         0.47 (0.30, 0)           5%         1.14 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.60, 1.           91%         0           Odds Ratio         1.14, Fixed, 95% CI           2.49 (1.23, 5.04)         2.49 (1.23, 5.04)	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
leterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Sun 2013 Xu 2012 Xu 2012 Zhang 2013 Zhang 2013 Zhang 2013 Zhang 2013 Thotal events Heterogeneity: Tau [∓] Test for overall effec Marital status	0.02; Chi [≇] = Z = 4.50 (P Low-edu <u>Events</u> 681 252 1272 121 452 783 36 202 31 156 3886 = 0.14; Chi [#] t Z = 1.80 (F Unmarr Events	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>787</li> <li>612</li> <li>383</li> <li>475</li> <li>20383</li> <li>20384</li> <li>20385</li> <li>20385</li></ul>	df = 6 (P : 1) High-ee Events 268 100 110 100 111 182: 182: 182: 182: Marriec 2vents 1 17	ducatio s <u>s To</u> 4 3 17, 3 36, 5 5 5 3 5 5 5 1 1 1 1 1 1 1 1 2 2 2 7 9 7 9 7 9 7 9 7 9 2 2 2 2 3	n tal Weij 40 7. 70 12. 67 12. 67 12. 13 11. 13 11. 13 11. 13 7. 13 7. 13 7. 14 12. 36 7. 86 9. 42 3. 56 11. 25 100. 001); I ^z =	M.H., Random, 959           4%         1.08 (0.56, 2)           4%         1.41 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.41 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.41 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 [0.60, 1.           91%            Odds Ratio           LH, Fixed, 95% CI	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Shen 2018 Zhang 2013 Zhou 2015 Zhang 2013 Zhou 2016 Total events Heterogeneity: Tau [≠] Test for overall effec Marital status Liu 2017	:0.02; Chi ² = Z = 4.50 (P <u>Events</u> 681 252 1172 121 452 783 36 202 203 31 156 = 0.14; Chi ² t Z = 1.80 (F <u>Unmarr</u> <u>Events</u> 177 177 178 178 178 178 178 178	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>787</li> <li>612</li> <li>383</li> <li>475</li> <li>20383</li> <li>2 = 97.01</li> <li>2 = 0.07)</li> <li>ied</li> <li>Total E</li> <li>128</li> </ul>	df = 6 (P = ) High-ee <u>Events</u> 266 1 10 1 10 1 10 1 11 1822 , df = 9 (P Marriec 2vents 1 17 1065 3	ducatio s <u>s To</u> 4 3 17, 3 36, 5 5 5 3 5 5 5 1 1 1 1 1 1 1 1 2 2 2 7 9 7 9 7 9 7 9 7 9 2 2 2 2 3	n tal Weij 40 7. 70 12. 67 12. 67 12. 133 11. 133 11. 133 11. 133 11. 133 11. 136 7. 86 9. 42 3. 256 11. 156 100. 001); I [≠] = <u>Veight N</u> 1.5%	M.H. Random. 959           4%         1.08 (0.56, 2.4)           4%         1.4 (1.04, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.96 (0.74, 1)           7%         0.96 (0.25, 0)           0%         0.47 (0.30, 0)           5%         1.14 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.60, 1.           91%         0           Odds Ratio         1.14, Fixed, 95% CI           2.49 (1.23, 5.04)         2.49 (1.23, 5.04)	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Sun 2013 Xu 2012 Xu 2012 Zhang 2013 Zhou 2016 Total events Heterogeneity: Tau [≠] Test for overall effec Marital status Liu 2017 Liu JL 2019 Ou 2018	0.02; Chi [≇] = Z = 4.50 (P Low-edu <u>Events</u> 681 262 1172 121 452 783 38 6 202 31 156 3886 = 0.14; Chi [™] t Z = 1.80 (f Unmarr Events 17 403 40	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>20388</li> <li>787</li> <li>612</li> <li>383</li> <li>475</li> <li>20383</li> <li>297.01,</li> <li>= 0.07)</li> <li>ied</li> <li>Total E</li> <li>1316</li> <li>217</li> </ul>	df = 6 (P = 1) High-ec Events 268 688 100 111 466 112 467 118 182 df = 9 (P Marriec Events 1 17 1065 3 184 1 184 1	ducatio <u>s</u> To 4 3 3 5 5 5 5 7 9 7 9 7 9 7 9 7 9 7 9 2 2 7 9 2 2 7 9 2 7 9 2 7 9 2 7 9 2 7 9 2 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 9 7 7 7 7 7 7 7 7 7 7 7 7 7	n tal Weie tal Weie tal Veie tal 12. tal 11. tal 11. tal 11. tal 11. tal 11. tal 11. tal 11. tal 11. tal 12. tal 11. tal 12. tal 11. tal 12. tal 11. tal 12. tal 11. tal 12. tal 13. tal 14. tal 12. tal 14. tal 1	MH, Random, 959           4%         1.08 (0.56, 2)           4%         1.4 (0.84, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.84, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.96 (0.74, 1)           7%         0.96 (0.25, 0)           6%         0.47 (0.30, 0)           5%         1.14 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.60, 1)           91%         0           Odds Ratio           LH, Fixeed, 95% CI           2.49 (1.23, 5.04)           1.10 (0.96, 1.27)           1.02 (0.70, 1.48)	Favours [experimental] Favours [control] Odds Ratio CI M.H. Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Shan 2013 Xu 2015 Zhang 2013 Zhou 2016 Total events Heterogeneity: Tau [≠] Test for overall effec Marital status Liu 2017 Liu 2017 Liu 2018 Ou 2018 Wan 2013	:0.02; Chi ² Z = 4.50 (P Z = 4.50 (P Events 681 252 1172 121 452 783 36 202 203 31 156 3886 = 0.14; Chi ² t Z = 1.80 (f Unmarr Events 177 403 40 28	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>787</li> <li>612</li> <li>383</li> <li>476</li> <li>20383</li> <li>476</li> <li>476</li> <li>478</li> <li>476</li> <li>428</li> <li>439</li> </ul>	df = 6 (P : ) High-et 269 1 269 269 269 269 269 269 111 269 269 269 269 269 269 269 269	ducatio <u>s</u> To <u>s</u>	n tal Wein 40 7. 70 12. i67 12. i21 11. i33 11. i35 11. i35 11. i35 10. i31 11. i35 10. i35 10. i	M.H. Random. 959           4%         1.08 (0.56, 2)           4%         1.4 (10.4, 1)           9%         0.51 [0.46, 0]           9%         0.51 [0.46, 0]           9%         0.51 [0.46, 0]           9%         0.51 [0.46, 0]           9%         0.51 [0.46, 0]           9%         0.51 [0.46, 0]           9%         0.51 [0.46, 0]           9%         0.50 [0.25, 0]           0.50 [0.25, 0]         0.63 [0.46, 0]           0%         0.63 [0.46, 0]           0%         0.78 [0.60, 1.           91%         0.78 [0.60, 1.           91%         2.49 [1.23, 5.04]           1.10 [0.96, 1.27]         1.02 [0.70, 1.48]           0.94 [0.57, 1.53]         3.54	Favours [experimental] Favours [control] Odds Ratio CI M.H. Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] = Test for overall effect: Education Fang 2014 Liu 2017 Liu 2019 Ou 2018 Shen 2018 Shen 2018 Shen 2013 Xu 2012 Zhang 2013 Zhou 2016 Total (95% CI) Total events Heterogeneity: Tau [≠] Test for overall effec Marital status Liu 2017 Liu 2019 Ou 2018 Wan 2013 Xu 2012	0.02; Chi ² = Z = 4.50 (P <u>Events</u> 681 252 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ² t Z = 1.80 (f <u>Unmarr</u> <u>Events</u> 17 403 40 28 31	<ul> <li>&lt; 0.0000</li> <li>ccation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>787</li> <li>612</li> <li>20383</li> <li>475</li> <li>20383</li> <li>20383</li> <li>475</li> <li>20383</li> <li>20384</li> <li>20384</li> <li>20384</li> <li>20385</li> <li>20383</li> <li>20384</li> <li>20384<td>df = 6 (P- - Fundament - Fund</td><td>ducatio           s         To           3         17           3         1           3         5           6         3           1         1           1         1           2         1           4         3           2         2           79         2           i         10           1         1           2         2           2         2           2         2           3         2           2         2           3         3           0         0.000           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           2         2           3         3           3         3           6         90</td><td>n tal Weii 40 7. 70 12. 67 12. 67 12. 13 11. 13 11. 74 12. 36 7. 86 9.0 42 3. 256 11. 156 100. 001); I[≠] = Veight N 1.5% 5.2% 5.5% 5.5% 5.24%</td><td>M.H. Random. 959           4%         1.08 (0.56, 2)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         0.97 [0.72, 1]           5%         0.63 [0.46, 0]           5%         1.14 [0.33, 3]           2%         0.63 [0.46, 0]           0%         0.78 [0.60, 1.           91 %         0           Odds Ratio           LH, Fixed, 95% CI           2.49 [1.23, 5.04]           1.10 [0.96, 1.27]           1.02 [0.70, 1.48]           0.94 [0.57, 1.53]           1.29 [0.67, 2.48]</td><td>Favours [experimental] Favours [control] Odds Ratio CI M.H. Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio</td></li></ul>	df = 6 (P- - Fundament - Fund	ducatio           s         To           3         17           3         1           3         5           6         3           1         1           1         1           2         1           4         3           2         2           79         2           i         10           1         1           2         2           2         2           2         2           3         2           2         2           3         3           0         0.000           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           2         2           3         3           3         3           6         90	n tal Weii 40 7. 70 12. 67 12. 67 12. 13 11. 13 11. 74 12. 36 7. 86 9.0 42 3. 256 11. 156 100. 001); I [≠] = Veight N 1.5% 5.2% 5.5% 5.5% 5.24%	M.H. Random. 959           4%         1.08 (0.56, 2)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         1.41 (0.94, 1)           9%         0.51 [0.46, 0)           4%         0.97 [0.72, 1]           5%         0.63 [0.46, 0]           5%         1.14 [0.33, 3]           2%         0.63 [0.46, 0]           0%         0.78 [0.60, 1.           91 %         0           Odds Ratio           LH, Fixed, 95% CI           2.49 [1.23, 5.04]           1.10 [0.96, 1.27]           1.02 [0.70, 1.48]           0.94 [0.57, 1.53]           1.29 [0.67, 2.48]	Favours [experimental] Favours [control] Odds Ratio CI M.H. Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
leterogeneity: Tau [≠] fest for overall effect:           Education           Fang 2014           Liu 2017           Liu 2018           Shen 2018           Sun 2013           Xu 2015           Zhang 2013           Zhou 2016           Total (95% CI)           Total events           Heterogeneity: Tau [≠] Test for overall effect           Marital status           Liu 2017           Liu 2017           Liu 2018           Wan 2013           Xu 2015	:0.02; Chi ² = 4.50 (P Z = 4.50 (P Events 681 252 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ^p t Z = 1.80 (f Unmarr Events 17 400 40 28 13 75	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>20383</li> <li>475</li> <li>20383</li> <li>297.01,</li> <li>20383</li> <li>217</li> <li>1316</li> <li>217</li> <li>139</li> <li>202</li> <li>2002</li> <li>2002</li> </ul>	df = 6 (P- High-ee (P- 1) High-ee (P-	ducatio           s         To           s         17           d         3           d         5           d         5           d         5           d         1           2         1           1         11           2         1           3         2           79         2           2         2           2         2           10         22.3           10         22.3           10         12           012         339           690         6470	n tal Weie 40 7.70 12. 107 12. 107 12. 107 12. 107 12. 107 12. 108 11. 108 7. 108 7. 108 7. 109 7	MH, Random, 959           4%         1.08 (0.56, 2)           4%         1.4 (0.84, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.84, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.77, 2)           13%         0.96 (0.74, 1)           7%         0.96 (0.25, 0)           6%         0.47 (0.30, 0)           5%         1.14 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.60, 1)           91%         0           Odds Ratio         1.14 (0.96, 1, 27)           1.10 (0.96, 1.27)         1.23, 5.04)           1.10 (0.96, 1.27)         1.29 (0.67, 2.48)           1.29 (0.67, 2.48)         1.29 (0.67, 2.48)	Favours [experimental] Favours [control] Odds Ratio CI M.H. Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
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Heterogeneity: Tau [≠] =           Fest for overall effect:           Education           Fang 2014           Liu 2017           Liu 2018           Shen 2018           Shen 2018           Sun 2013           Xu 2012           Xu 2015           Zhang 2013           Zhou 2016           Total events           Heterogeneity: Tau ² Test for overall effect           Marital status           Liu 2017           Liu 2018           Wan 2013           Xu 2012           Xu 2013           Dia 2018           Wan 2013           Xu 2015           Dia 2018           Wan 2013           Xu 2012           Xu 2013           Xu 2014	:0.02; Chi ² = 4.50 (P Z = 4.50 (P Events 681 252 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ^p t Z = 1.80 (f Unmarr Events 17 400 40 28 13 75	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>10802</li> <li>610</li> <li>2038</li> <li>20383</li> <li>475</li> <li>20383</li> <li>297.011</li> <li>2037</li> <li>20383</li> <li>20393</li> </ul>	df = 6 (P: 11) High-ee Eventh 1 Eventh 1 26: 1 20: 1 20: 1 20: 1 20: 1 10: 1 10: 1 20: 1 20: 1 10: 1 10: 1 20: 1 20: 1 10: 1 10:	ducatio         s         To           s         To         3         7           d         3         17         3         3           d         1         11         12         1           d         2         1         12         1           d         3         2         2         2           79         22         2         2         2           2         79         293         3730         1           012         233         339         690         470           515         5         5         5         5	n tal Weiei 40 7. 770 12: 170 12: 171 12: 173 12: 173 12: 173 12: 174 12: 186 9: 174 12: 186 9: 174 12: 186 9: 195 11: 195 11: 195 11: 195 12: 195 12: 19	MH, Random, 957           4%         1.08 (0.56, 2)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 [0.60, 1.           91%         0           Odds Ratio           LH, Fixed, 95% CI           2.49 [1.23, 5.04]           1.10 [0.36, 1.27]           1.02 [0.70, 1.48]           0.94 (0.57, 1.53)           1.29 [0.67, 2.48]           1.16 [0.82, 1.64]           1.57 [1.13, 2.19]	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] =           Test for overall effect:           Education           Fang 2014           Liu 2017           Liu 2018           Shen 2018           Shen 2018           Xu 2015           Zhang 2013           Zhou 2016           Total (95% CI)           Total events           Heterogeneity: Tau [≠] Test for overall effect           Marital status           Liu 2017           Liu 2017           Liu 2018           Wan 2013           Xu 2015           Zhou 2016           Total events	:0.02; Chi ² : Z = 4.50 (P Events 681 252 1172 121 452 783 36 202 203 31 156 3886 e 0.14; Chi ² t Z = 1.80 (f Unmarr Events 13 403 40 28 13 75 5 90	<ul> <li>&lt; 0.0000</li> <li>cation</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>1491</li> <li>10802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>20383</li> <li>475</li> <li>20383</li> <li>297.01,</li> <li>20383</li> <li>217</li> <li>1316</li> <li>217</li> <li>139</li> <li>202</li> <li>2002</li> <li>2002</li> </ul>	df = 6 (P- High-ee Events Events - 1. - 2. - 688 - 1. - 2. - 688 - 688 - 688 - 688 - 688 - 688 - 688 - 688 - 688 - 1. - 2. - 688 - 1. - 1. - 2. - 688 - 688 - 1. - 1. - 2. - 688 - 688 - 1. - 1. - 2. - 2. 2. - 2. - 2. 	ducatio           s         To           s         17           d         3           d         5           d         5           d         5           d         1           2         1           1         11           2         1           3         2           79         2           2         2           2         2           10         22.3           10         22.3           10         12           012         339           690         6470	n tal Weiei 40 7. 770 12: 170 12: 171 12: 173 12: 173 12: 173 12: 174 12: 186 9: 174 12: 186 9: 174 12: 186 9: 195 11: 195 11: 195 11: 195 12: 195 12: 19	MH, Random, 959           4%         1.08 (0.56, 2)           4%         1.4 (0.84, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.84, 1)           9%         0.51 (0.46, 0)           4%         1.4 (0.77, 2)           13%         0.96 (0.74, 1)           7%         0.96 (0.25, 0)           6%         0.47 (0.30, 0)           5%         1.14 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 (0.60, 1)           91%         0           Odds Ratio         1.14 (0.96, 1, 27)           1.10 (0.96, 1.27)         1.23, 5.04)           1.10 (0.96, 1.27)         1.29 (0.67, 2.48)           1.29 (0.67, 2.48)         1.29 (0.67, 2.48)	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] =           Test for overall effect:           Education           Fang 2014           Liu 2017           Liu 2018           Shen 2018           Sun 2013           Xu 2012           Xu 2015           Zhang 2013           Zhou 2016           Total (95% CI)           Total events           Heterogeneity: Tau ² Test for overall effect           Marital status           Liu 2017           Liu Ju 2018           Wan 2013           Xu 2015           Zhou 2016           Total (95% CI)           Total events	:0.02; Chi ² : Z = 4.50 (P Events 681 252 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ² t Z = 1.80 (f Unmarr Events 13 40 28 40 28 31 156	<ul> <li>&lt; 0.0000</li> <li>Total 1849</li> <li>1849</li> <li>1849</li> <li>1849</li> <li>1849</li> <li>1849</li> <li>1849</li> <li>1849</li> <li>1849</li> <li>10802</li> <li>610</li> <li>1336</li> <li>20383</li> <li>475</li> <li>20383</li> <li>475</li> <li>20383</li> <li>20405</li> </ul>	df = 6 (P- 11) High-ee <u>Event</u> 12 13 14 16 10 10 10 10 10 10 10 10 10 10	ducatio         s         To           s         To         3           d         3         3           d         3         3           d         3         3           d         3         3           d         3         3           d         3         2           d         3         2           d         2         2           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         - <tr tr="">          d         -</tr>	n tal Weiei 40 7. 770 12: 170 12: 171 12: 173 12: 173 12: 173 12: 174 12: 186 9: 174 12: 186 9: 174 12: 186 9: 195 11: 195 11: 195 11: 195 12: 195 12: 19	MH, Random, 957           4%         1.08 (0.56, 2)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 [0.60, 1.           91%         0           Odds Ratio           LH, Fixed, 95% CI           2.49 [1.23, 5.04]           1.10 [0.36, 1.27]           1.02 [0.70, 1.48]           0.94 (0.57, 1.53)           1.29 [0.67, 2.48]           1.16 [0.82, 1.64]           1.57 [1.13, 2.19]	Favours [experimental] Favours [control] Odds Ratio CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 12] 98] 0.01 0.1 10 Favours [experimental] Favours [control] Odds Ratio
Heterogeneity: Tau [≠] =           Test for overall effect:           Education           Fang 2014           Liu 2017           Liu 2018           Shen 2018           Shen 2018           Sun 2013           Xu 2015           Zhang 2013           Zhou 2016           Total events           Heterogeneity: Tau [≠] Test for overall effect           Marital status           Liu 2017           Liu 2017           Liu 2017           Liu 2018           Wan 2013           Xu 2015           Zhou 2016           Total events	0.02; Chi [≠] = Z = 4.50 (P Low-edu <u>Events</u> 681 262 1172 121 452 783 36 202 31 156 3886 = 0.14; Chi ^p t Z = 1.80 (C Unmarr <u>Events</u> 17 40 28 13 75 90 8666 = 9.51, df=	<ul> <li>&lt; 0.0000</li> <li>Total</li> <li>1849</li> <li>1491</li> <li>1802</li> <li>610</li> <li>1336</li> <li>2038</li> <li>475</li> <li>20383</li> <li>475</li> <li>2037</li> <li>217</li> <li>139</li> <li>2010</li> <li>203</li> <li>2405</li> <li>6 (P = 0:</li> </ul>	df = 6 (P: 11) High-ee Eventh 1 2666 100 100 100 100 100 100 100	ducatio         s         To           s         To         3           d         3         3           d         3         3           d         3         3           d         3         3           d         3         3           d         3         2           d         3         2           d         2         2           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         -           d         -         - <tr tr="">          d         -</tr>	n tal Weiei 40 7. 770 12: 170 12: 171 12: 173 12: 173 12: 173 12: 174 12: 186 9: 174 12: 186 9: 174 12: 186 9: 195 11: 195 11: 195 11: 195 12: 195 12: 19	MH, Random, 957           4%         1.08 (0.56, 2)           4%         1.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.4 (0.94, 1)           9%         0.51 (0.46, 0)           4%         0.47 (0.30, 0)           5%         0.47 (0.33, 3)           2%         0.63 (0.46, 0)           0%         0.78 [0.60, 1.           91%         0           Odds Ratio           LH, Fixed, 95% CI           2.49 [1.23, 5.04]           1.10 [0.36, 1.27]           1.02 [0.70, 1.48]           0.94 (0.57, 1.53)           1.29 [0.67, 2.48]           1.16 [0.82, 1.64]           1.57 [1.13, 2.19]	Favours [experimental] Favours [control] Odds Ratio 4 CI M-H, Random, 95% CI 09] 38] 57] 30] 23] 4 CI M-H, Random, 95% CI 4 CI M-H, Random, 95% CI 4 CI M-H, Random, 95% CI 4 CI M-H, Fixed, 95% CI M-H, Fixed, 95\% CI M-H, Fixed, 95\% CI M-H, Fixed, 95\% CI M, Fixed, 95\% CI M-H, Fixed,

Figure 2 Forest plots of demographic factors

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Occupation	Docto Events	or Total	Nurse Events	-	Weight	Odds Ratio M-H, Random, 95% C	Odds Ratio M-H. Random, 95% Cl
Liu 2017	204	1421		1030	25.2%	0.70 (0.56, 0.87	
Ou 2018	101	495	94	491	21.9%	1.08 [0.79, 1.48	
Sun 2013	444	1150		1056	26.5%	0.87 [0.73, 1.03	
Xu 2012	24	370	14	321	11.6%	1.52 [0.77, 2.99	
Yao 2011	54	90	60	143	14.9%	2.08 [1.21, 3.55	
100 2011	54	50	00	145	14.570	2.00 [1.21, 3.33	
Total (95% CI)		3526		3041	100.0%	1.05 [0.78, 1.41	ı 🔶
Total events	827		811				
Heterogeneity: Tau ² =	: 0.08; Chi	i² = 18.3	8, df = 4	(P = 0.0)	001); I² = 7	78%	0.01 0.1 1 10 10
Test for overall effect:	Z=0.31 (	(P = 0.78	6)				Favours [experimental] Favours [control]
	Lowt	itle	High 1	Fitle		Odds Ratio	Odds Ratio
Job title	Events	Total	Events	Total	Weight	M-H, Fixed, 95% Cl	M-H, Fixed, 95% Cl
Liu 2017	279	1779	234	1442	18.7%	0.96 [0.79, 1.16]	+
Liu JL 2019	1126	3839	342	1207	31.6%	1.05 [0.91, 1.21]	<b>+</b>
Ou 2018	152	832	75	420	7.0%	1.03 [0.76, 1.40]	+
Shen 2018	539	1568	29	101	3.1%	1.30 [0.83, 2.03]	+
Sun 2013	803	2016	441	1196	28.6%	1.13 [0.98, 1.31]	+
Xu 2012	35	647	13			1.16 [0.60, 2.22]	- <del> </del>
Xu 2015	190	589	27		2.6%	1.48 [0.93, 2.36]	<u>↓</u>
Yao 2011	126	241	43			1.07 [0.65, 1.76]	
Zhou 2016	199	492	60			1.96 [1.39, 2.76]	
	.55	402	00	200	1.2.70	1.00 [1.00] 2.70]	
Total (95% CI)		12003			100.0%	1.11 [1.03, 1.21]	P.
Total events	3449		1264				
Heterogeneity: Chi ² =				= 49%			0.01 0.1 1 10 100
Test for overall effect:	Z = 2.68 (	(P = 0.00	D7)				Favours [experimental] Favours [control]
	Short (	<10)	Long (	>10)		Odds Ratio	Odds Ratio
Work seniority	Events				Weight	M-H, Fixed, 95% Cl	M-H, Fixed, 95% Cl
Shen 2018	31	74	537	1595			+
Yao 2011	120	240	48	84			
					47.1%	0.75 [0.45, 1.24]	
Yao 2011 Zhang 2013	120	240 256	48	84 203	47.1% 16.2%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10]	
Yao 2011 Zhang 2013 Total (95% Cl)	120 22	240	48 12	84 203	47.1%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10]	• •
Yao 2011 Zhang 2013 <b>Total (95% CI)</b> Total events	120 22 173	240 256 <b>570</b>	48 12 597	84 203 <b>1882</b>	47.1% 16.2%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10]	
Yao 2011 Zhang 2013 <b>Total (95% CI)</b> Total events Heterogeneity: Chi ² =	120 22 173 : 4.04, df=	240 256 <b>570</b> = 2 (P = 0	48 12 597 D.13); I⁼=	84 203 <b>1882</b>	47.1% 16.2%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10]	
Yao 2011 Zhang 2013 <b>Total (95% CI)</b> Total events Heterogeneity: Chi ² =	120 22 173 : 4.04, df=	240 256 <b>570</b> = 2 (P = 0	48 12 597 D.13); I⁼=	84 203 <b>1882</b>	47.1% 16.2%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10]	0.01 0.1 1 10 100 Favours [experimental] Favours [control]
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi ² = Test for overall effect:	120 22 173 : 4.04, df = : Z = 0.70	240 256 <b>570</b> = 2 (P = 0 (P = 0.48	48 12 597 D.13); F= 8)	84 203 <b>1882</b>	47.1% 16.2%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] <b>1.12 [0.82, 1.52]</b>	Favours [experimental] Favours [control]
Yao 2011 Zhang 2013 <b>Total (95% CI)</b> Total events Heterogeneity: Chi ² =	120 22 173 : 4.04, df= : Z= 0.70 Yes	240 256 <b>570</b> = 2 (P = 0 (P = 0.48	48 12 597 D.13); I ² = 8) <b>No</b>	84 203 <b>1882</b> 50%	47.1% 16.2% 100.0%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio	Favours [experimental] Favours [control] Odds Ratio
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi ² = Test for overall effect: Organizational affiliation	120 22 173 : 4.04, df= : Z= 0.70 Yes	240 256 <b>570</b> : 2 (P = 0 (P = 0.4) ; <u>Total</u>	48 12 597 0.13); I ² = 8) <b>No</b> <u>Events</u>	84 203 <b>1882</b> : 50% <u>Total</u>	47.1% 16.2% 100.0%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio M.H. Fixed, 95% Cl	Favours [experimental] Favours [control]
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational affiliation Liu 2017	120 22 173 4.04, df= Z = 0.70 Yes <u>Events</u> 9	240 256 <b>570</b> : 2 (P = 0 (P = 0.4) ; <u>Total</u> 233	48 12 597 0.13); I [*] = 8) <b>No</b> <u>Events</u> 25	84 203 <b>1882</b> : 50% <u>Total</u> 217	47.1% 16.2% 100.0% <u>Weight</u> 9.3%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio <u>M.H. Fixed, 95% C1</u> 0.31 [0.14, 0.68]	Favours [experimental] Favours [control] Odds Ratio
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Yao 2011 Zhang 2013 Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012	120 22 173 4.04, df= Z = 0.70 Yes <u>Events</u> 9 121	240 256 <b>570</b> = 2 (P = 0 (P = 0.4) (P = 0.4) <b>Total</b> 233 1137 520	48 12 597 0.13); I² = 8) <b>No</b> <u>Events</u> 25 371	84 203 <b>1882</b> 50% <u>Total</u> 217 2394 413	47.1% 16.2% 100.0% 9.3% 79.9% 10.8%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio M-H, Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08]	Favours [experimental] Favours [control] Odds Ratio
Yao 2011 Zhang 2013 Total events Heterogeneity: Chi¤ = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total (95% CI)	120 22 173 : 4.04, df= Z = 0.70 <b>Yes</b> <u><b>Fvents</b></u> 9 121 21	240 256 <b>570</b> : 2 (P = 0 (P = 0.4) (P = 0.4) <b>Total</b> 233 1137	48 12 597 0.13);   [≠] = 8) <b>No</b> <u>Events</u> 371 27	84 203 <b>1882</b> 50% <u>Total</u> 217 2394 413	47.1% 16.2% 100.0% <u>Weight</u> 9.3% 79.9%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio <u>M.H. Fixed, 95% C1</u> 0.31 [0.14, 0.68] 0.65 [0.52, 0.81]	Favours [experimental] Favours [control] Odds Ratio
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Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational Liu 2017 Liu 2019 Xu 2012 Total (95% CI) Total events Heterogeneity: Chi ^p =	120 22 173 : 4.04, df= : Z = 0.70 Yess <u>Events</u> 9 121 21 21 3.20, df=	240 256 570 = 2 (P = 0 (P = 0.4% 70 233 1137 520 1890 : 2 (P = 0	48 12 597 0.13); I [≠] = 8) <b>No</b> Events 25 371 27 423 0.20); I [≠] =	84 203 <b>1882</b> 50% <u>Total</u> 2394 413 <b>3024</b>	47.1% 16.2% 100.0% 9.3% 79.9% 10.8%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio <u>M.H. Fixed, 95% CI</u> 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75]	Favours [experimental] Favours [control]  Odds Ratio  M-H, Fixed, 95% C1  .01 0.1 1 0 001 0.1 1 0 000 0.0 0 0 0
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational Liu 2017 Liu 2019 Xu 2012 Total (95% CI) Total events Heterogeneity: Chi ^p =	120 22 173 : 4.04, df= : Z = 0.70 Yess <u>Events</u> 9 121 21 21 3.20, df=	240 256 570 = 2 (P = 0 (P = 0.4% 70 233 1137 520 1890 : 2 (P = 0	48 12 597 0.13); I [≠] = 8) <b>No</b> Events 25 371 27 423 0.20); I [≠] =	84 203 <b>1882</b> 50% <u>Total</u> 2394 413 <b>3024</b>	47.1% 16.2% 100.0% 9.3% 79.9% 10.8%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio <u>M.H. Fixed, 95% CI</u> 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total events Heterogeneity: Chi¤= Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total events Heterogeneity: Chi¤= Test for overall effect	120 22 173 4.04, df= Z = 0.70 <b>Yess</b> 9 121 21 151 3.20, df= Z = 4.85 <b>Hig</b>	240 256 570 = 2 (P = 0 (P = 0.4% 7 233 1137 520 1890 : 2 (P = 0 (P < 0.00)	48 12 597 0.13);  ² = 8) <b>No</b> Events 25 371 27 423 0.20);  ² = 0001) Lon	84 203 1882 50% 50% 217 2394 413 3024 : 38%	47.1% 16.2% 100.0% 9.3% 79.9% 10.8% 100.0%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio M.H. Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio
Yao 2011 Zhang 2013 Total events Heterogeneity: Chi¤= Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total events Heterogeneity: Chi¤= Test for overall effect: Work stress	120 22 173 4.04, df= Z = 0.70 9 121 21 21 3.20, df= Z = 4.85 Hig Events	240 256 570 (P = 0.4( Total 233 1137 520 1890 : 2 (P = 0 (P < 0.00 (P < 0.00	48 12 597 0.13);   ² = 8) No <u>Events</u> 25 371 27 423 0.20);   ² = 0001) Loo Events	84 203 1882 50% 50% <u>Total</u> 217 2394 413 <b>3024</b> 38% 38%	47.1% 16.2% 100.0% <u>Weight</u> 9.3% 79.9% 10.8% 100.0% <u>Weight</u>	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio <u>M-H, Fixed, 95% CI</u> 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio <u>M-H, Fixed, 95% CI</u>	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi [#] = Test for overall effect: Organizational <u>affiliation</u> Liu 2017 Liu 2019 Xu 2012 Total (95% CI) Total events Heterogeneity: Chi [#] = Test for overall effect: Work stress Liu 2019	120 22 173 4.04, df= Z = 0.70 <b>Yes</b> <b>Events</b> 9 121 21 3.20, df= Z = 4.85 <b>Hig</b> <b>Events</b> 1632	240 256 570 = 2 (P = 0 (P = 0.4% 70 1137 520 1890 : 2 (P = 0 (P < 0.00 (P < 0.00 (P < 10.00) 13615	48 12 597 0.13);  ² = 8) <b>No</b> Events 25 371 27 423 0.20);  ² = 0001) Lon Events 108	84 203 1882 50% 217 2394 413 3024 3024 3024 38% w <u>Total</u> 1717	47.1% 16.2% 100.0% <u>Weight</u> 9.3% 79.9% 10.8% 100.0% <u>Weight</u> 54.0%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] 0.04 S Ratio M-H. Fixed, 95% C1 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] 0.64 [0.50, 0.75] 0.64 [0.50, 0.75] 0.65 [0.54, 2.48]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio
Yao 2011 Zhang 2013 Total events Heterogeneity: Chi [#] = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total events Heterogeneity: Chi [#] = Test for overall effect: Work stress Liu 2019 Ou 2018	120 22 173 4.04, df= Z = 0.70 <b>Yes</b> <b>Events</b> 9 121 21 21 3.20, df= Z = 4.85 <b>Hig</b> <b>Events</b> 168	240 256 570 (P = 0.44) 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	48 12 597 0.13);  ² = 8) <b>No</b> Events 25 371 27 423 0.20);  ² = 0001) Loo Events 61	84 203 1882 50% 217 2394 413 3024 38% w 50% 1717 519	47.1% 16.2% 100.0% 9.3% 79.9% 10.8% 100.0% <u>Weightt</u> 54.0% 17.7%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio M.H. Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio M.H. Fixed, 95% CI 2.03 [1.66, 2.48] 2.20 [1.60, 3.02]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total events Heterogeneity: Chi ^p = Test for overall effect Work stress Liu 2018 Ou 2018 Wan 2013	120 22 173 4.04, df = Z = 0.70 9 9 121 21 151 3.20, df = Z = 4.85 1632 1632 166 61	240 256 570 (P = 0.4) ( $P = 0.4)$ 233 1137 520 <b>1890</b> (P < 0.0) ( $P < 0.0)$ ( $P < 0.0)$ ( $P = 0.0$	48 12 597 0.13);  ² = 8) No Events 25 371 27 423 0.20);  ² = 0001) Loo Events 108 61 11	84 203 1882 50% <u>Total</u> 217 2394 413 3024 : 38% * <b>Total</b> : 1717 519 62	47.1% 16.2% 100.0% 9.3% 79.9% 10.8% 100.0% Weight 54.0% 17.7% 4.2%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio M-H, Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio M-H, Fixed, 95% CI 2.03 [1.66, 2.48] 2.20 [1.60, 3.02] 1.55 [0.76, 3.17]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total events Heterogeneity: Chi ^p = Test for overall effect Work stress Liu 2018 Ou 2018 Wan 2013	120 22 173 4.04, df= Z = 0.70 9 121 21 151 3.20, df= Z = 4.85 Hig <u>Events</u> 1632 1666 61 147	240 256 570 (P = 0.44) 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	48 12 597 0.13);  ² = 8) No <u>Events</u> 25 371 27 423 0.20);  ² = 0001) Lon <u>Events</u> 108 61 11 21	84 203 1882 50% <u>Total</u> 217 2394 413 <b>3024</b> 3024 518 517 519 62 62	47.1% 16.2% 100.0% 100.0% 10.8% 100.0% 100.0% 100.0% 10.7% 4.2% 6.7%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] 0.40 S Ratio MH, Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio MH, Fixed, 95% CI 2.03 [1.66, 2.48] 2.20 [1.60, 3.02] 1.55 [0.76, 3.17]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi [#] = Test for overall effect: Organizational <u>affiliation</u> Liu 2017 Liu 2019 Xu 2012 Total (95% CI) Total events Heterogeneity: Chi [#] = Test for overall effect: Work stress Liu 2019 Ou 2018 Wan 2013 Xu 2015	120 22 173 4.04, df = Z = 0.70 9 9 121 21 151 3.20, df = Z = 4.85 1632 1632 166 61	240 256 570 (P = 0.4) ( $P = 0.4)$ 233 1137 520 <b>1890</b> (P < 0.0) ( $P < 0.0)$ ( $P < 0.0)$ ( $P = 0.0$	48 12 597 0.13);  ² = 8) No <u>Events</u> 25 371 27 423 0.20);  ² = 0001) Lon <u>Events</u> 108 61 118 108 118 108 108 108 108 10	84 203 1882 50% <u>Total</u> 217 2394 413 <b>3024</b> 3024 518 517 519 62 62	47.1% 16.2% 100.0% 100.0% 10.8% 100.0% 100.0% 100.0% 10.7% 4.2% 6.7%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] Odds Ratio M.H. Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio M.H. Fixed, 95% CI 2.03 [1.66, 2.48] 2.20 [1.60, 3.07] 1.38 [0.77, 2.40]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total events Heterogeneity. Chi ^p = Test for overall effect: Organizational affiliation Liu 2019 Xu 2012 Total events Heterogeneity. Chi ^p = Test for overall effect: Work stress Liu 2019 Ou 2018 Wan 2013 Xu 2015 Zhou 2016	120 22 173 4.04, df= Z = 0.70 9 121 21 151 3.20, df= Z = 4.85 Hig <u>Events</u> 1632 1666 61 147	240 256 <b>570</b> (P = 0.41 <b>701</b> <b>137</b> <b>520</b> <b>1890</b> <b>1380</b> <b>1387</b> <b>1387</b> <b>1387</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1389</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399</b> <b>1399110</b> <b>1399110</b> <b>110</b> <b>110110110110110</b>	48 597 0.13); F = 80 <b>No</b> <b>Events</b> 371 27 423 30.20); F = 0001) <b>Loo</b> 108 61 11 21 78	84 203 1882 5 50% 217 2394 413 3024 3024 38% W 519 62 62 62 62 290	47.1% 16.2% 100.0% 100.0% 10.8% 100.0% 100.0% 100.0% 10.8% 100.0% 17.4%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] 0.40 S Ratio MH, Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio MH, Fixed, 95% CI 2.03 [1.66, 2.48] 2.03 [1.66, 2.43] 1.55 [0.77, 2.40] 2.01 [1.46, 2.77]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneity: Chi ^p = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total (95% CI) Total events Heterogeneity: Chi ^p = Test for overall effect: Work stress Liu 2019 Ou 2018 Wan 2013 Xu 2015 Zhou 2016 Total (95% CI)	120 22 173 4.04, df= Z = 0.70 9 121 21 151 3.20, df= Z = 4.85 Hig <u>Events</u> 1632 1666 61 147 191	240 256 <b>570</b> (P = 0.4( <b>Total</b> 233 1137 520 <b>1890</b> 2 (P = 0.0( P < 0.0( P < 0.0( <b>13615</b> 733 243 358	48 12 597 0.13); F = 80 Noo Events 25 371 27 423 3.20); F = 100 61 111 121 78	84 203 1882 50% 50% 217 2394 413 3024 38% W 519 62 62 52 62 220 2650	47.1% 16.2% 100.0% 100.0% 10.8% 100.0% 100.0% 100.0% 10.7% 4.2% 6.7%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] 0.40 S Ratio M-H, Fixed, 95% CI 0.31 [0.14, 0.68] 0.66 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Codds Ratio M-H, Fixed, 95% CI 2.03 [1.66, 2.48] 2.03 [1.66, 2.43] 1.36 [0.77, 2.40] 2.01 [1.46, 2.77]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl
Yao 2011 Zhang 2013 Total 95% CI) Total events Heterogeneity: Chi [#] = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total events Heterogeneity: Chi [#] = Test for overall effect: Work stress Liu 2019 Ou 2018 Wan 2013 Xu 2015 Zhou 2016 Total events	120 22 173 4.04, df= 2 = 0.70 <b>Yes</b> 9 121 21 3.20, df= Z = 4.85 6 <b>Hig</b> <b>Events</b> 1632 166 61 147 191	$\begin{array}{c} 240\\ 256\\ \textbf{570}\\ \textbf{2} (P=0.4)\\ \textbf{3}\\ \textbf{1}\\ \textbf{2}\\ \textbf{3}\\ \textbf{1}\\ \textbf{3}\\ \textbf{1}\\ \textbf{3}\\ \textbf{5}\\ \textbf{2}\\ \textbf{0}\\ \textbf{P} < \textbf{0}.0\\ \textbf{1}\\ \textbf{1}\\ \textbf{3}\\ \textbf{6}\\ \textbf{8}\\ \textbf{3}\\ \textbf{5}\\ \textbf{8}\\ \textbf{4}\\ \textbf{4}\\ \textbf{1}\\ \textbf{5}\\ \textbf{3}\\ \textbf{3}\\ \textbf{5}\\ \textbf{8}\\ \textbf{8}\\ \textbf{6}\\ \textbf{8}\\ \textbf{1}\\ \textbf{5}\\ \textbf{3}\\ \textbf{5}\\ \textbf{6}\\ \textbf{8}\\ \textbf{1}\\ \textbf{5}\\ \textbf{3}\\ \textbf{5}\\ \textbf{6}\\ \textbf{8}\\ \textbf{6}\\ \textbf{6}\\ \textbf{7}\\ \textbf{3}\\ \textbf{1}\\ \textbf{5}\\ \textbf{6}\\ \textbf{6}\\ \textbf{7}\\ \textbf{7}\\ \textbf{3}\\ \textbf{6}\\ \textbf{6}\\ \textbf{8}\\ \textbf{7}\\ \textbf{7}\\ \textbf{3}\\ \textbf{6}\\ \textbf{6}\\ \textbf{8}\\ \textbf{7}\\ $	48 597 0.13); F = 80 No Events 25 371 27 423 3.120; F = 108 0001) Loo Events 108 61 111 218 80 80 80 80 80 80 80 80 80 8	84 203 1882 50% 50% 7017 2394 413 3024 338% w * 538% * 1777 519 62 262 290 2650	47.1% 16.2% 100.0% 100.0% 10.8% 100.0% 100.0% 100.0% 10.8% 100.0% 17.4%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] 0.40 S Ratio MH, Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio MH, Fixed, 95% CI 2.03 [1.66, 2.48] 2.03 [1.66, 2.43] 1.55 [0.77, 2.40] 2.01 [1.46, 2.77]	Favours [experimental] Favours [control]
Yao 2011 Zhang 2013 Total (95% CI) Total events Heterogeneily: Chi [#] = Test for overall effect: Organizational affiliation Liu 2017 Liu 2019 Xu 2012 Total (95% CI) Total eyents Heterogeneity: Chi [#] = Test for overall effect: Work stress Liu 2019 Ou 2018 Wan 2013 Xu 2015 Zhou 2016 Total (95% CI)	120 22 173 4.04, df= 2 = 0.70 <b>Yess</b> 9 9 121 21 151 3.20, df= 2 = 4.85 1632 1632 1632 1632 1632 1632 1632 1632	240 256 570 (P = 0 41 701 1137 520 1890 2 (P = 0 41 13815 733 743 358 449 15398	48 5977 0.13);   ² = <b>No</b> <b>Events</b> 80 4233 0.20);   ² = 0001) <b>Loo</b> 108 611 217 78 279 0.62);   ² =	84 203 1882 50% 50% 7017 2394 413 3024 338% w * 538% * 1777 519 62 262 290 2650	47.1% 16.2% 100.0% 100.0% 10.8% 100.0% 100.0% 100.0% 10.8% 100.0% 17.4%	0.75 [0.45, 1.24] 1.50 [0.72, 3.10] 1.12 [0.82, 1.52] 0.40 S Ratio MH, Fixed, 95% CI 0.31 [0.14, 0.68] 0.65 [0.52, 0.81] 0.60 [0.34, 1.08] 0.61 [0.50, 0.75] Odds Ratio MH, Fixed, 95% CI 2.03 [1.66, 2.48] 2.03 [1.66, 2.43] 1.55 [0.77, 2.40] 2.01 [1.46, 2.77]	Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl 0.01 0.1 1 10 100 Favours [experimental] Favours [control] Odds Ratio M-H, Fixed, 95% Cl

Figure 3 Forest plots of job characteristic factors

1							
2							
3							
-							
4							
5							
6	Overall job	Satisfied	Dissatisfie		Odds Ratio	Odds	Datie
7	Satisfaction	Events Total	Events T	otal Weight 16 23.9%	M-H, Random, 95% Cl 0.09 (0.02, 0.42)	M-H, Rande	
8	Lu 2018 Zhou 2016	68 287 61 322	85	187 38.6% 103 37.5%	0.37 [0.25, 0.55] 0.08 [0.05, 0.14]		
-	Total (95% CI)	657		306 100.0%	0.15 [0.04, 0.51]		
9	Total events Heterogeneity: Tau ^a	147	175 49. df = 2 (P	< 0.0001); I ² =			
10	Test for overall effect Promotion and	ct: Z = 3.05 (P = 0.0	002)			0.01 0.1 1 Favours (experimental)	10 100 Favours (control)
-	individual development space	Satisfied Events Total	Dissatisfie Events T	d otal Weight	Odds Ratio M-H, Random, 95% Cl	Odds M-H, Rando	
11	Fang 2014 Wan 2013	194 694 9 93	209	341 48.2% 128 20.5%	0.25 (0.19, 0.32) 0.17 (0.08, 0.36)	•	
12	Xu 2015	20 144	135	245 31.2%	0.13 [0.08, 0.22]		
	Total (95% CI) Total events	931 223	394	714 100.0%	0.19 [0.12, 0.29]	•	
13	Heterogeneity: Tau ^a Test for overall effec	*= 0.08; Chi*= 4.5 ct: Z = 7.60 (P < 0.0	3, df = 2 (P = 00001)	0.10); I ² = 569	6	0.01 0.1 1 Favours (experimental)	10 100 Favours Icontroll
14	Interpersonal relationship	Satisfied Events Total	Dissatisfie Events T	otal Weight	Odds Ratio M-H, Fixed, 95% Cl	Odds Rat	io
	Fang 2014 Wan 2013	407 1338 48 287	107	154 85.3% 16 7.1%	0.19 [0.13, 0.28] 0.26 [0.09, 0.73]		
15	Xu 2015	156 498	9	14 7.7%	0.25 [0.08, 0.77]		
16	Total (95% CI) Total events	2123 611	123	184 100.0%	0.20 [0.15, 0.28]	•	
17	Heterogeneity: Chi ^a Test for overall effec	= 0.45, df = 2 (P =	$0.80); P = 0^{4}$	6	H 0	1.01 0.1 1 Favours [experimental] Far	10 100
	Keep busy and fulfilling	Satisfied	Dissatisfie	d	Odds Ratio M-H, Random, 95% Cl	Odds	Ratio
18	Fang 2014	420 1324 3 66	89	144 38.0% 867 15.2%	0.29 [0.20, 0.41] 0.09 [0.03, 0.27]		(B, 93% C)
19	Wan 2013 Xu 2015	29 217 53 254	7	14 16.0% 75 30.8%	0.15 [0.05, 0.47] 0.14 [0.08, 0.25]		
	Total (95% CI)	53 254		100 100.0%	0.14 [0.08, 0.25]		
20	Total events Heterogeneity: Tau*	505	456				
21	Test for overall effec	ct: Z = 6.15 (P < 0.0	00001)			0.01 0.1 1 Favours (experimental) Odds	10 100 Favours (control)
	Sense of accomplishment Fang 2014	Events Total		otal Weight	Odds Ratio M-H, Random, 95% Cl	M-H, Rande	
22	Fang 2014 Lu 2018 Wan 2013	336 1125 75 489 48 287	161	185 39.2% 241 38.5% 16 22.3%	0.21 [0.15, 0.30] 0.09 [0.06, 0.13] 0.26 [0.09, 0.73]		
23	Total (95% CI)	40 207		442 100.0%	0.16 [0.08, 0.32]		
	Total events						
24	Haterogeneity Tau?	459 7 - 0.20: Chill - 12	291		5%		
24	Heterogeneity: Tau ^a Test for overall effec	e = 0.30; ChP = 13. ct: Z = 5.09 (P < 0.0	291 13, df= 2 (P 00001)	= 0.001); I ^e = 6		0.01 0.1 1 Favours (experimental)	10 100 Favours [control]
	Heterogeneity: Tau ^a Test for overall effection	*= 0.30; Chi* = 13. ct Z = 5.09 (P < 0.0 Satisfied Events Total	291 13, df = 2 (P 00001) Dissatisfic Events T	= 0.001); P = 8 ed otal Weight	Odds Ratio M-H, Random, 95% Cl	0.01 0.1 1 Favours [experimental] Odds M-H, Rando	Favours [control] Ratio
25	Heterogeneity: Tau ^a Test for overall effect Income satisfaction Fang 2014 Lu 2018	P = 0.30; ChP = 13. ct: Z = 5.09 (P < 0.0 Satisfied Events Total 18 113 20 140	291 13, df = 2 (P 00001) Dissatisfie Events T 500 1 270	= 0.001); P = 6 otal Weight 051 21.4% 721 21.5%	Odds Ratio M-H, Random, 95% Cl 0.21 [0.12, 0.35] 0.28 [0.17, 0.46]	0.01 0.1 i Favours [experimental] Odds <u>M-H, Rando</u>	Favours [control] Ratio
25 26	Heterogeneity: Tau* Test for overall effect Income satisfaction Fang 2014 Lu 2018 Shen 2018 Wan 2013	P = 0.30; ChP = 13, ct Z = 5.09 (P < 0.0 Satisfied 18 113 20 140 107 195 2 37	291 13, df = 2 (P 00001) Dissatisfie Events T 500 1 270 143 70	e 0.001); P = 8 otal Weight 051 21.4% 721 21.5% 330 22.0% 244 15.9%	Odds Ratio M-H, Random, 95% Cl 0.21 [0.12, 0.35] 0.28 [0.17, 0.46] 1.59 [1.11, 2.27] 0.14 [0.03, 0.61]	0.01 0.1 Favours [experimental] Odds M-H, Rande	Favours [control] Ratio
25	Heterogeneity: Tau* Test for overall effect Income satisfaction Fang 2014 Lu 2018 Shen 2018 Wan 2013 Xu 2015	P= 0.30; ChP = 13, ct: Z = 5.09 (P < 0.0 Satisfied 18 113 20 140 107 195 2 37 5 37	291 13, df = 2 (P 00001) Dissatisfie Events T 500 1 270 143 70 196	e 0.001); P = 8 otal Weight 051 21.4% 721 21.5% 330 22.0% 244 15.9% 469 19.1%	Odds Ratio M-H, Random, 95% Cl 0.21 (0.12, 0.35) 0.28 (0.17, 0.46) 1.59 (1.11, 2.27) 0.14 (0.03, 0.61) 0.22 (0.08, 0.57)	0.01 0.1 Favours (experimental) Favours (experimental) M-H, Rande	Favours [control] Ratio
25 26 27	Heterogeneity: Tau ² Test for overall effect Income satisfaction Fang 2014 Lu 2018 Shen 2018 Wan 2013 Xu 2015 Total (95% CI) Total events	P= 0.30; ChP = 13, ct: Z = 5.09 (P < 0.0 Satisfied <u>Events Total</u> 18 113 20 140 107 195 2 37 5 37 5 22 152	291 13, df = 2 (P 00001) Dissatisfie Events T 500 1 270 143 70 195 2 1179	e 0.001); P = 8 d otal Weight 051 21.4% 330 22.0% 244 15.9% 469 19.1% 815 100.0%	Odds Ratio <u>M.H. Randorn, 95% CI</u> 0.21 [0.12, 0.35] 0.28 [0.17, 0.46] 1.59 [1.11, 2.27] 0.14 [0.03, 0.61] 0.22 [0.08, 0.57] 0.33 [0.11, 0.95]	0.01 0.1 Odds Odds Odds MHR Rando	Favours (control) Ratio m. 95% Cl
25 26 27 28	Heterogeneity Tau' Test for overall effect Income satisfaction Fang 2014 Lu 2018 Shen 2018 Wan 2013 Xu 2015 Total events Heterogeneity Tau' Test for overall effec	** 0.30; ChP = 13. ct; Z = 5.09 (P < 0.1 Satisfied 18 113 20 140 10 195 2 37 5 37 5 22 **= 1.30; ChP = 62. ct; Z = 2.05 (P = 0.0	291 13, df = 2 (P 00001) Dissatisfie Events I 500 1 270 143 70 196 2 1179 70, df = 4 (P 04)	e 0.001); P = 6 d dal Weight 051 21.4% 721 21.5% 330 22.0% 469 19.1% 815 100.0% < 0.00001); P	Odds Ratio 0.21 [0.12, 0.35] 0.28 [0.17, 0.46] 1.59 [1.11, 2.27] 0.14 [0.03, 0.61] 0.22 [0.08, 0.57] 0.33 [0.11, 0.95] = 94%	Favours [experimenta]	Favous (sonirol) an. 95% CI  Favours (sonirol) Favours (sonirol)
25 26 27	Heterogeneity Tau' Testfor overall effect Income satisfaction Fang 2014 Lu 2018 Shen 2018 Wan 2013 Xu 2015 Total eyents Heterogeneity Tau' Test for overall effect Work condition and environment	** 0.30; ChP = 13. t; Z = 5.09 (P < 0.1 Satisfied 18 113 20 140 107 195 2 37 5 37 5 27 ** 1.30; ChP = 62. t; Z = 2.05 (P = 0.1 Satisfied Events Total	291 13, df = 2 (P 00001) Dissatisfie Events T 500 1 270 143 70 196 2 1179 70, df = 4 (P 04) Dissatisfie Events T	= 0.001); P = 0 otal <u>Weight</u> 051 21.4% 330 22.0% 244 15.9% 469 19.1% 815 100.0% < 0.00001); P d otal Weight	Odds Ratio <u>M-H, Random, 95% CI</u> 0.21 [0.17, 0.45] 0.28 [0.17, 0.46] 1.59 [1.11, 2.27] 0.14 [0.03, 0.61] 0.22 [0.08, 0.57] 0.33 [0.11, 0.95] = 94% Odds Ratio <u>M-H, Firced, 95% CI</u>	Got ot standard Stand	Favours (control)
25 26 27 28 29	Heterogeneity Tau' Test for overall effect Fang 2014 Lu 2018 Shen 2018 Wan 2013 Xu 2015 Total (95% CI) Total events Heterogeneity Tau' Test for overall effect Work condition and Fang 2014 Lu 2018	= 0.30, Chi ⁺ = 13, ct Z = 5.09 (P < 0.10) Satisfied 1 Events Total 18 113 20 140 107 195 2 37 5 37 5 37 5 22 = 1.30; Chi ⁺ = 62, ct Z = 2.05 (P = 0.10) Satisfied Events Total 240 929 29 257	291 13, df = 2 (P 00001) Dissatisfic <u>Events I</u> 270 143 70 195 2 1179 70, df = 4 (P 04) Dissatisfic <u>Events I</u> 231 174	= 0.001); P = 0 dal <u>Weight</u> 721 21.5% 7330 22.0% 244 15.9% 815 100.0% < 0.00001); P d d 100.00% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 10	Odds Ratio <u>MH, Random, 35% Cl</u> 0.21 [0.12, 0.33] 0.28 [0.17, 0.46] 1.59 [1.11, 2.27] 0.41 [0.03, 0.51] 0.22 [0.08, 0.57] 0.33 [0.11, 0.35] = 94% Odds Ratio <u>MH, Fixed, 95% Cl</u> 0.20 (0.15, 0.28) 0.15 [0.10, 0.23]	Goti Oti Starovis (experimenta) Favours (experimenta) MH, Rando MH, Rando Odds au Favours (experimenta) Favours (experimenta) Odds Rat	Favours (control)
25 26 27 28 29 30	Heterogeneity Tau' Test for overall effect Income satisfaction Fang 2014 Lu 2018 Shen 2018 Wan 2013 Total (95% C) Total events Heterogeneity Tau' Test for overall effec Work conclision and environment Fang 2014	² = 0.30, Ch ² = 13, tz Z = 5.09, 0 ² < 0.1 Satisfied <u>Events Total</u> 18 113 20 140 107 195 2 37 5 37 522 52 ² = 1.30, Ch ² = 62, tz Z = 2.05 0 ² = 0.1 Satisfied <u>Events Total</u> 240 929	291 13, df= 2 (P 20001) Dissatisfic <u>Events I</u> 500 1 270 143 70 143 70 143 70 143 70 143 70 143 70 195 221 179 Dissatisfic <u>Events I</u> <u>Events I</u> 231 174 24	= 0.001); P = 8 dd 051 21.4% 721 21.5% 330 22.0% 244 15.9% 469 19.1% 815 100.0% < 0.00001); P d dt 1040htt 364 52.8%	Odds Ratio <u>MH, Random, 95%, Cl</u> 0.21 (0.12, 0.35) 0.28 (0.17, 0.46) 1.59 (11.11, 2.27) 0.14 (0.03, 0.61) 0.22 (0.08, 0.57) 0.33 (0.11, 0.95) = 94% Odds Ratio <u>MH, Freed, 95%, Cl</u> 0.20 (0.15, 0.28)	Got ot standard Stand	Favours (control)
25 26 27 28 29 30 31	Heterogeneits Taul; Test for overall effect Income satisfaction Fang 2014 Lu 2018 Biena 2018 Wan 2013 Xu 2015 Total ep55 Ct) Total ep55 Ct) Total expression Heterogeneits, Taul; Fang 2014 Lu 2018 Wark conditionent Fang 2014 Lu 2018 War 2015 Xu 2015 Total ep55 Ct) Total ep55 Ct) Total ep55 Ct) Total ep55 Ct) Total ep55 Ct) Total ep55 Ct)	= 0.30; ChP = 13; ct Z = 5.09 (P < 0.1; Satisfied	291 13, df = 2 (P 0001) Dissatisfie <u>Events</u> T 500 1 270 143 70 198 2 1179 70, df = 4 (P 04) Dissatisfie <u>Events</u> T 231 174 24 91	= 0.001); P = 6 dat <u>Weight</u> 721 21.5% 330 22.0% 244 15.9% 815 100.0% < 0.00001); P d dat <u>Veight</u> 364 52.8% 378 26.8% 85 5.0%	Odds Ratio <u>MH, Random, 95% (1</u> 0.21 (0.12, 0.33) 0.28 (0.17, 0.44 1.59 (11.1, 2.27) 0.41 (0.03, 0.61) 0.22 (0.08, 0.57) 0.33 (0.11, 0.95) = 94% Odds Ratio <u>MH, Freed, 95% (1</u> 0.20 (0.15, 0.28) 0.50 (15, 0.28) 0.51 (0.10, 0.23) 0.26 (0.11, 0.30) 0.18 (0.11, 0.30)	Got ot standard Stand	Favours (control)
25 26 27 28 29 30	Heterogeneits T-auf Test for overall effect Income auditaction Fang 2014 Lu 2018 Wan 2018 Wan 2018 Total 0955 CD Total avords Heterogeneits Tauf Fang 2014 Lu 2018 Wark condition and Wark 2018 Wark	= 0.30; ChP = 13. = 0.30; ChP = 13. Satisfied <u>Petrik Total</u> 10 = 113 20 140 10 7 116 2 77 5 22 ≠ 1.30; ChP = 02 × = 1.30; ChP = 02 2 9 97 3 4 154 1437 = 122, df = 32 = 129 2 0 27 2 9 27 2 9 27 3 4 154 1437 12 9 27 12 9 27 12 9 27 12 9 27 12 9 27 12 9 27 13 12 9 14 13 15 12 9 16 113 17 15 18 113 18 113	291 13, df = 2 (P 0001) Dissatisfie <u>Events I</u> 270 143 70 195 271 195 20 195 20 195 20 195 20 179 231 174 231 174 231 520 0, 59), P = 0'	e 0.001); P = 0 d total Weight 051 21.4% 721 21.5% 300 22.0% 244 15.9% 489 19.1% 815 100.0% < 0.00001); P d total Weight 364 52.8% 378 26.8% 55 5.0% 150 15.4% 977 100.0%	Odds Ratio <u>M.H. Random, 95% C.</u> 0.21 (0.21, 0.25) 0.29 (0.77, 0.48) 1.59 (1.11, 2.27) 0.14 (10.03, 0.61) 0.22 (10.08, 0.57) 0.33 (0.14, 0.95) = 94% Odds Ratio <u>M.H. Freed, 95% C1</u> 0.20 (0.15, 0.28) 0.50 (10, 0.02) 0.15 (0.11, 0.30) 0.19 (0.15, 0.23) 0.19 (0.15, 0.23)	0 01 01 Facous Septemental MHL Rand 0 04 0 04 1 00 1 00 0 04 0 0	Facuat (control) m. 353 Cl Facuation Facuation (control) e 554 Cl 10 100
25 26 27 28 29 30 31 32	Heterogeneils Tudy Test for overall effect Income satisfaction Fang 2014 Uben 2019 Wan 2013 Xu 2015 Total events Heterogeneils Tudy Test for overall effect Work condition and environment Fang 2014 Wan 2013 Xu 2015 Total events Heterogeneils Cudy Total events Heterogeneils Cudy Test for overall effect	$\label{eq:constraints} \begin{split} & r_{\rm e} = 0.30, (chr) = 13, \\ r_{\rm e} = 5.99, 9^{\rm e}, 0^{\rm e}, 0^{\rm e}, 10^{\rm e}, 10^{$	291 13, df = 2 (P 00001) Dissatisfic Events 1 500 1 270 143 70 196 21 179 70, df = 4 (P 04) Dissatisfic Events 1 520 0.590, P = 0' 00001) Dissatisfic	e 0.001); P = 6 d di 051 21.4% 721 21.5% 330 22.0% 244 15.9% 489 19.1% 815 100.0% < 0.00001); P d di 051 22.0% 489 19.1% 815 100.0% 489 50.0% 150 15.4% 977 100.0% 6 d	Odds Ratio MH, Random, 95% Cl 0.21 (0.12, 0.35) 0.28 (0.17, 0.48) 1.59 (11.1, 2.27) 0.41 (0.03, 0.61) 0.22 (0.09, 0.57) 0.33 (0.11, 0.35) e 94% Odds Ratio 0.10 (0.15, 0.28) 0.10 (0.15, 0.28) 0.10 (0.11, 0.30) 0.10 (0.11, 0.30) 0.10 (0.11, 0.30) 0.19 (0.15, 0.23) 0.000 Ratio	0 01 01 Facus (septiment) 0 01 0 00 0 01 0 00 0 01 0 00 0 01 0 00 0 01 0 00 0	Favous (control) Tavous (control) Favous (control) Sta Cl 
25 26 27 28 29 30 31 32 33	Hetergenetic Tau2 Test for overall effect Income satisfaction Fang 2014 United 100 (1000) Wan 2013 Xu 2015 Total events Heterogenetic Tau2 Test for overall effect Work condition and environment Fang 2014 Call d5% CD Total events Heterogenetic Tau2 Fang 2014 Call d5% CD Total events Heterogenetic Tau2 Fang 2014	T=0.30, ChP=13. T=0.30, ChP=13. Control Z=0.00 PC + 0.00 PC +	291 13, df = 2 (P 00001) Dissatisfic <u>Events I</u> 270 143 70 183 221 179 Dissatisfic <u>Events I</u> 231 174 24 91 520 0.59), P = 0' .00001) Dissatisfic Events I E	e 0.001); P = 6 d d del Weight 051 21.4% 721 21.5% 300 22.0% 244 59% 244 59% 815 100.0% d d d d d d d d d d d d d d	Odds Ratio MH, Bandsm. 95% Cl 0.21 (0.12, 0.33) 0.29 (0.17, 0.44) 1.39 (11.11, 2.27) 0.41 (0.03, 0.61) 0.22 (10.03, 0.57) 0.33 (0.11, 0.45) 9.4% Odds Ratio MH, Fixed, 95% Cl 0.19 (0.15, 0.23) 0.19 (0.15, 0.23)	0 01 01 Facous (sepantines) 0 01 01 Facous (sepantines) 0 01 01 Facous (sepantines) Facous (sepantines)	Favous (control) Tavous (control) Favous (control) Sta Cl 
25 26 27 28 29 30 31 32	Hetergenetic Tauly Test to reveral effect Parag 2010 Parag 2010 Shen 2010 Shen 2010 Shen 2010 Shen 2010 Total reverts Heterogenetic Tauly Test to coveral effect Parag 2014 Lu 2010 Way 2015 Sha 2015 Sha 2015 Total 4055 CD Total events Tauly 2016 Way 2015 Sha 2015 Total 4055 CD Total events Test for overal effect Parag 2014 Lu 2016 Way 2015 Sha 2015 Sha 2015 Total 4055 CD Total events Test for overal effect Test for overal effect	T=0.30, ChP=13. T=0.30, ChP=13. Control Z=0.00 PC + 0.00 PC +	291 13, df = 2 (P 00001) Dissatisfic Fvents 1  270 143 70 196 2 1179 70, df = 4 (P 14) 231 174 24 24 24 24 520 0.59), P = 0' 0.00001) Dissatisfic Fvents 1  103 18	e 0.001); P = 6 d di 051 21.4% 721 21.5% 330 22.0% 244 15.9% 489 19.1% 815 100.0% < 0.00001); P d di 051 22.0% 489 19.1% 815 100.0% 489 50.0% 150 15.4% 977 100.0% 6 d	Odds Ratio MH, Bandsm. 95% Cl 0.21 (0.12, 0.33) 0.29 (0.17, 0.44) 1.39 (11.11, 2.27) 0.41 (0.03, 0.61) 0.22 (10.03, 0.57) 0.33 (0.11, 0.45) 9.4% Odds Ratio MH, Fixed, 95% Cl 0.19 (0.15, 0.23) 0.19 (0.15, 0.23)	0 01 01 Facus (septiment) 0 01 0 00 0 01 0 00 0 01 0 00 0 01 0 00 0 01 0 00 0	Favous (control) Tavous (control) Favous (control) Sta Cl 
25 26 27 28 29 30 31 32 33 34	Hetergenetic Tudy Test to reveral effect Income satisfaction Pung 2014 Shen 2019 Shen 2019 Way 2013 Xu 2015 Total events Heterogenetic Tudy Test to reveral effect Work conditionant Fang 2014 Lu 2018 Way 2013 Xu 2015 Total events Heterogenetic Tudy Test for overal effect Way 2013 Xu 2015 Total events Heterogenetic Tudy Test for overal effect Fang 2014 Way 2013 Xu 2015 Total events Fang 2014 Total even	$\label{eq:constraints} \begin{split} & = 0.30 (c) m = 13, \\ & = 5.80 \oplus (-0.11) \\ & = 0.00 \oplus (-0.11) \\ &$	291 13, df 2 (P 20001) Dissatisfic Fvents 1 500 143 70 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 195 270 179 231 174 231 174 231 174 231 174 231 174 231 174 231 174 231 174 231 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 174 250 0 155 155 155 155 155 155 155	e 0.001); P = 6 otal Weight 051 21.4%; 771 21.5%; 489 19.1%; 815 100.0%; 4 0.00001); P d 000001); P d 01000; 150 50%; 77 100.0%; 6 d d d d d d d d d d d d d	0.0458 Ratio MR. Bandman, 925 Cl 0.21 (0.12, 0.02) 0.23 (0.17, 0.44) 0.24 (0.12, 0.02) 0.23 (0.17, 0.44) 0.22 (0.00, 0.57) 0.33 (0.17, 0.45) 0.450 (0.12) 0.450	0 01 01 Facus (septiment) 0 01 0 00 0 01 0 00 0 01 0 00 0 01 0 00 0 01 0 00 0	Favous (control) Tavous (control) Favous (control) Sta Cl 
25 26 27 28 29 30 31 32 33 34 35	Heterogeneits Tudy Test tor overall effect Income satisfaction Purp 2014 Shen 2019 Way 2019 Xu 2019 Total events Heterogeneits Tudy Total events Heterogeneits Tudy Work Condition Total events Heterogeneits Cudy Total events Heterogeneits Cudy Total events Heterogeneits Cudy Total events Heterogeneits Cudy Total events Farg 2014 Way 2015 Xu 2015 Total events Heterogeneits Cudy	$\label{eq:constraints} \begin{split} & = 0.30 (chr) = 13, \\ & = 2.50 (t^2 - 0.01) \\ & \begin{tabular}{lllllllllllllllllllllllllllllllllll$	291 13, df = 2 (P 20001) Dissatisfic Feents 1 500 143 70 198 271 197 198 271 197 271 197 271 197 271 197 271 198 271 197 271 197 231 197 231 231 231 231 231 231 231 231	= 0.001); P = 6 di dial <u>Weinht</u> 051 21.45% 051 21.45% 051 21.45% 051 21.45% 051 21.45% 051 21.45% 051 21.45% 051 21.5% 0.00001); P di di di di di di di di di di	Odds Ratio           M41, Rationan, 935: Cl           C21 (B17, 10, 24)           159 (B17, 10, 24)           159 (B17, 10, 27)           159 (B17, 10, 27)           0.33 (B17, 10, 28)           169 (B17, 10, 27)           0.33 (B17, 10, 28)           169 (B17, 10, 28)	0 01 01 Favours (sepenimental) 0 01 01 Favours (sepenimental) Favours (sep	Faculty (control) m. 955 Cl Faculty (control) 95 Cl 100 055 Cl 100 055 Cl 100 055 Cl 100 100 100 100 100 100 100 10
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P = 1           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d         d           d <t< td=""><td>0.455 Ratio 441, Random, 935 Cl 1 (21) (21) (21) (21) (21) 441, 91, 201 (21) (21) (21) (21) (21) (21) (21) (21) (21) (21) (21) (21)</td><td>01 01 00 Favors (specimenta) Favors (specimenta)</td><td>Favous (critical) Transition Transition Favous (critical) Favous (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critica</td></t<>	0.455 Ratio 441, Random, 935 Cl 1 (21) (21) (21) (21) (21) 441, 91, 201 (21) (21) (21) (21) (21) (21) (21) (21) (21) (21) (21) (21)	01 01 00 Favors (specimenta) Favors (specimenta)	Favous (critical) Transition Transition Favous (critical) Favous (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critical) (critica
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25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 41	Hetergenetic Tauly Test to reversal effect Party 2010 August 2010 December 2010 Decemb	$ \begin{array}{c} \mathbf{z}_{=0.20} (chr = 13, \\ \mathbf{z}_{=0.50} (chr = 13, \\ \mathbf{z}_{=0.50} (r) (chr = 10, \\ \mathbf{z}_{=0.50} (r) (r) (r) (r) (r) (r) (r) (r) (r) (r)$	291 201 201 20001) 20001) 20001 20001 200 200 200 200 200	$\begin{array}{c} 0  0  0  0  0  0  0  0  0  0 $	0 dels Ratio M.H. Randen, 925. Cf 0.21 (0.17, 0.27) 0.21 (0.17, 0.27) 0.21 (0.17, 0.27) 0.22 (0.17, 0.27) 0.23 (0.17, 0.27) 0.23 (0.17, 0.27) 0.23 (0.17, 0.27) 0.25 (0.17, 0.27) 0.26 (0.17, 0.27) 0.26 (0.17, 0.27) 0.26 (0.17, 0.27) 0.27 (0.17, 0.27) 0.27 (0.17, 0.27) 0.28 (0.17, 0.27) 0.29 (0.15, 0.27) 0.29 (0.15, 0.27) 0.29 (0.15, 0.27) 0.29 (0.17, 0.37) 0.29 (0	Other State S	Favous (cortrol)         100           Interesting         100           Favous (cortrol)         100           Interesting         100
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 41	Hetergenetic Tauly Test to reversal effect Party 2010 August 2010 December 2010 Decemb	$ \begin{array}{c} \mathbf{z}_{=0.20} (chr = 13, \\ \mathbf{z}_{=0.50} (chr = 13, \\ \mathbf{z}_{=0.50} (r) (chr = 10, \\ \mathbf{z}_{=0.50} (r) (r) (r) (r) (r) (r) (r) (r) (r) (r)$	291 201 201 20001) 20001) 20001 20001 200 200 200 200 200	$\begin{array}{c} 0  0  0  0  0  0  0  0  0  0 $	0 dels Ratio M.H. Randen, 925. Cf 0.21 (0.17, 0.27) 0.21 (0.17, 0.27) 0.21 (0.17, 0.27) 0.22 (0.17, 0.27) 0.23 (0.17, 0.27) 0.23 (0.17, 0.27) 0.23 (0.17, 0.27) 0.25 (0.17, 0.27) 0.26 (0.17, 0.27) 0.26 (0.17, 0.27) 0.26 (0.17, 0.27) 0.27 (0.17, 0.27) 0.27 (0.17, 0.27) 0.28 (0.17, 0.27) 0.29 (0.15, 0.27) 0.29 (0.15, 0.27) 0.29 (0.15, 0.27) 0.29 (0.17, 0.37) 0.29 (0	Original Street St	Favous (cortrol)         100           Interest (cortrol)         100           Favous (cortrol)         100           Interest (cortrol)         100           Favous (cortrol)         100           Favous (cortrol)         100           Favous (cortrol)         100           Favous (cortrol)         100

## **Table S1 Search strategy**

## Database 1: PubMed

Sequence	Query
#1	Search (Chinese[MeSH Terms]) OR Chinese[Title/Abstract]
#2	Search (China[MeSH Terms]) OR China[Title/Abstract]
#3	#1 OR #2
	Search (((Chinese[MeSH Terms]) OR Chinese[Title/Abstract]))OR ((China[MeSH Terms]) OR
	China[Title/Abstract])))
#4	Search (Health worker[MeSH Terms]) OR Health worker[Title/Abstract]
#5	Search (Health officer[MeSH Terms]) OR Health officer[Title/Abstract]
#6	Search (Health Manpower[MeSH Terms]) OR Health Manpower[Title/Abstract]
#7	Search (Health Personnel[MeSH Terms]) OR Health Personnel[Title/Abstract]
#8	Search (Medical Personnel[MeSH Terms]) OR Medical Personnel[Title/Abstract]
#9	Search (Medical worker[MeSH Terms]) OR Medical worker[Title/Abstract]
#10	Search (Medical staff[MeSH Terms]) OR Medical staff[Title/Abstract]
#11	Search (Doctor[MeSH Terms]) OR Doctor[Title/Abstract]
#12	Search (Physician[MeSH Terms]) OR Physician[Title/Abstract]
#13	Search (Nurse[MeSH Terms]) OR Nurse [Title/Abstract]
#14	#4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #11 OR #12 OR #13
	Search ((((((((((Health worker[MeSH Terms]) OR Health worker[Title/Abstract])) OR ((Health officer[MeSH
	Terms]) OR Health officer[Title/Abstract])) OR ((Health Manpower[MeSH Terms]) OR Health
	Manpower[Title/Abstract])) OR ((Health Personnel[MeSH Terms]) OR Health Personnel[Title/Abstract])) OR
	((Medical Personnel[MeSH Terms]) OR Medical Personnel[Title/Abstract])) OR ((Medical worker[MeSH
	Terms]) OR Medical worker[Title/Abstract])) OR ((Medical staff[MeSH Terms]) OR Medical
	staff[Title/Abstract])) OR ((Doctor[MeSH Terms]) OR Doctor[Title/Abstract])) OR ((Physician[MeSH Terms])
	OR Physician[Title/Abstract])) OR ((Nurse[MeSH Terms]) OR Nurse [Title/Abstract])
#15	Search (Rural[MeSH Terms]) OR Rural[Title/Abstract]
#16	Search (Countryside[MeSH Terms]) OR Countryside[Title/Abstract]
#17	Search (Community[MeSH Terms]) OR Community[Title/Abstract]
#18	Search (District[MeSH Terms]) OR District[Title/Abstract]
#19	Search (Basic[MeSH Terms]) OR Basic[Title/Abstract]
#20	Search (Fundamental[MeSH Terms]) OR Fundamental[Title/Abstract]
#21	Search (Primary[MeSH Terms]) OR Primary[Title/Abstract]
#22	Search (Grass roots[MeSH Terms]) OR Grass roots[Title/Abstract]
#23	#7 OR #8 OR #9 OR #11 OR #12 OR #13 OR #14
	Search ((((Primary[MeSH Terms]) OR Primary[Title/Abstract]) OR Grass roots[MeSH Terms]) OR Grass
	roots[Title/Abstract]) OR (((Community[MeSH Terms]) OR Community[Title/Abstract]) OR
	(((((((((Rural[MeSH Terms]) OR Rural[Title/Abstract]) OR Countryside[MeSH Terms]) OR
	Countryside[Title/Abstract]) OR District[MeSH Terms]) OR District[Title/Abstract]) OR Basic[MeSH Terms])
	OR Basic[Title/Abstract]) OR Fundamental[MeSH Terms]) OR Fundamental[Title/Abstract]))

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#24	Search(Turnover Intention[MeSH Terms]) OR Turnover Intention[Title/Abstract]
#25	Search (Departure Intention[MeSH Terms]) OR Departure Intention[Title/Abstract]
#26	Search (Demission Intention[MeSH Terms]) OR Demission Intention[Title/Abstract]
#27	Search(Leave Intention[MeSH Terms]) OR Leave Intention[Title/Abstract]
#28	Search intent to leave[Title/Abstract]
#29	#18 OR #19 OR #20
	Search ((((((Turnover Intention[MeSH Terms]) OR Turnover Intention[Title/Abstract])) OR ((Departure
	Intention[MeSH Terms]) OR Departure Intention[Title/Abstract])) OR ((Demission Intention[MeSH Terms])
	OR Demission Intention[Title/Abstract])) OR ((Leave Intention[MeSH Terms]) OR Leave
	Intention[Title/Abstract])) OR intent to leave[Title/Abstract]
#30	#3 AND #10AND #17AND #21
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	OR Demission Intention[Title/Abstract])) OR ((Leave Intention[MeSH Terms]) OR Leave
	Intention[Title/Abstract])) OR intent to leave[Title/Abstract])) AND (((((((Primary[MeSH Terms]) OR
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	(((Community[MeSH Terms]) OR Community[Title/Abstract]) OR (((((((((Rural[MeSH Terms]) OR
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	fundamental[MeSH Terms]) OR fundamental[Title/Abstract])))) AND (((((((((((((((((Health worker[MeSH
	Terms]) OR Health worker[Title/Abstract])) OR ((Health officer[MeSH Terms]) OR Health
	worker[Title/Abstract])) OR ((Health Manpower[MeSH Terms]) OR Health Manpower[Title/Abstract])) OR
	((Health Personnel[MeSH Terms]) OR Health Personnel[Title/Abstract])) OR ((Medical Personnel[MeSH
	Terms]) OR Medical Personnel[Title/Abstract])) OR ((Medical worker[MeSH Terms]) OR Medical
	worker[Title/Abstract])) OR ((Medical staff[MeSH Terms]) OR Medical staff[Title/Abstract])) OR
	((Doctor[MeSH Terms]) OR Doctor[Title/Abstract])) OR ((Physician[MeSH Terms]) OR
	Physician[Title/Abstract])) OR ((Nurse[MeSH Terms]) OR Nurse [Title/Abstract]))) AND (((((Chinese[MeS
	Terms]) OR Chinese[Title/Abstract]))OR ((China[MeSH Terms]) OR China[Title/Abstract])))))))

#### Database 2: EMBASE

Sequence	Query
#1	'China'/exp
#2	'China':ti,ab
#3	#1 OR #2
#4	'Turnover Intention' OR 'Departure Intention' OR 'Demission Intention' OR 'Leave Intention'/exp
#5	'Turnover Intention' OR ' Departure Intention' OR 'Demission Intention' OR 'Leave Intention' OR 'intent to
	leave':ti,ab
#6	#4 OR #5
#7	'Primary' OR 'Grass roots' OR 'Community' OR 'Countryside' OR 'District' OR 'Basic' OR 'Rural' OR
	'Fundamental':ti,ab
#8	'Health worker' OR 'Health officer' OR 'Health Manpower' OR 'Health Personnel' OR 'Medical Personnel' OR
	'Medical worker' OR 'Medical staff ' OR 'Doctor' OR 'Physician' OR 'Nurse':ti,ab

#### **#9 #3** AND **#6** AND **#7** AND **#8**

### **Database 3: Cochrane Library**

Sequence	Query
#1	china:ti,ab,kw (Word variations have been searched)
#2	chinese:ti,ab,kw(Word variations have been searched)
#3	#1 or #2
#4	(turnover intention):ti,ab,kw OR (departure Intention):ti,ab,kw OR (demission Intention):ti,ab,kw OR (leave
	Intention):ti,ab,kw OR (intent to leave):ti,ab,kw(Word variations have been searched)
#5	(primary):ti,ab,kw OR (community):ti,ab,kw OR (rural):ti,ab,kw OR (basic):ti,ab,kw OR
	(countryside):ti,ab,kw(Word variations have been searched)
#6	(health worker):ti,ab,kw OR (health manpower):ti,ab,kw OR (health personnel):ti,ab,kw OR (health
	officer):ti,ab,kw(Word variations have been searched)
#7	(medical worker):ti,ab,kw OR (medical staff):ti,ab,kw OR (doctor):ti,ab,kw OR (physician):ti,ab,kw OR
	(nurse):ti,ab,kw(Word variations have been searched)
#8	#5 or #6
#9	#3 and #4 and #5 and #8

#### Database 4: PsycINFO

Sequence	Query
#1	Title: china OR Abstract: china OR Title: chinese OR Abstract: chinese
#2	Title: turnover intention OR Abstract: turnover intention OR Title: Departure Intention OR Abstract: Departure
	Intention OR Title: Demission Intention OR Abstract: Demission Intention OR Title: Leave Intention OR
	Abstract: Leave Intention OR Abstract: intent to leave
#3	Title: Health worker OR Abstract: Health worker OR Title: Health officer OR Abstract: Health officer OR Title:
	Health Manpower OR Abstract: Health Manpower OR Title: Health Personnel OR Abstract: Health Personnel
	OR Title: Medical Personnel OR Abstract: Medical Personnel OR Title: Medical worker OR Abstract: Medical
	worker OR Title: Medical staff OR Abstract: Medical staff OR Title: Doctor OR Abstract: Doctor OR Title:
	Physician OR Abstract: Physician OR Title: Nurse OR Abstract: Nurse
#4	Title: Rural OR Abstract: Rural OR Title: Countryside OR Abstract: Countryside OR Title: Community OR
	Abstract: Community OR Title: District OR Abstract: District OR Title: Basic OR Abstract: Basic OR Title:
	Fundamental OR Abstract: Fundamental OR Title: Primary OR Abstract: Primary OR Title: Grass roots OR
	Abstract: Grass roots
#5	#1 AND #2 AND #3 AND #4

#### Database 5: CAJD (CNKI)

SU=('医生'+'医务人员'+'护士'+'卫生人员')AND SU=('离职意愿'+'离职倾向'+'离职意向'+'留职意愿'+'工作意愿'+'留职意向')AND SU=('基层'+'社区'+'农村'+'乡镇卫生院'+'卫生服务中心')

#### Database 6: CSPD (WANFANG Data)

(题名或关键词:(社区)+题名或关键词:(农村)+题名或关键词:(基层)+题名或关键词:(乡镇卫生院)+题名或关键词:(卫生服 务中心))*(题名或关键词:(离职意愿)+题名或关键词:(离职倾向)+题名或关键词:(离职意向))+题名或关键词:(留职意愿))+ 题名或关键词:(工作意愿))+题名或关键词:(留职意向))*(题名或关键词:(医生)+题名或关键词:(护士)+题名或关键词:(医 务人员)+题名或关键词:(卫生人员))

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## **Database 7: CBM**

((((("社区"[标题:智能]) OR "基层"[标题:智能]) OR "次村"[标题:智能]) OR "乡镇卫生院"[标题:智能]) OR "卫生服务中心 "[标题:智能]) AND ((((("离职意愿"[标题:智能]) OR "离职倾向"[标题:智能]) OR "离职意向"[标题:智能]) OR "留职意愿 "[标题:智能]) OR "工作意愿"[标题:智能]) OR "留职意向"[标题:智能] AND (((("医生"[标题:智能]) OR "护士"[标题:智能]) OR "卫生人员"[标题:智能]) OR "医务人员"[标题:智能])

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## Table S2 The inter-rater reliability for the title abstract screening by the two authors

	TItle		Abstract			
	Author 1	Author 2	Author 1	Author 2		
Inclued	120	112	89	83		
Exclued	88	96	25	31		
Agreement	20	00	10	)8		
Sum	20	08	114			
Rate	96.1	5%	94.74%			
ev.						

## Table S3 47 factors related to TI

Group	Category	Exposure
А	Demographic	A1-gender, A2-age, A3-education, A4-region, A5-marital status, A6-nation, A7-major,
В	Job characteristic	B1-occupation, B2-job title, B3-work seniority, B4-qualified to practice, B5- remuneration, B6-medical institution, B7-organizational affiliation, B8- re-employ afte
		retirement, B9-turnover experience, B10-individual income levels in the local, B11-work stress, B12-emotional exhaustion, B13-flattening of affect, B14-public healt
		service, B15- working hours, B16-career planning, B17-career identity, B18-Social status B19-influence family life, B20-living condition, B21-lack of insurance, B22
		patient trust.
С	Job satisfaction	C1-learning and training opportunities, C2-promotion and individual development space, C3-interpersonal relationship, C4-work conditions and environment, C5- sense of
		accomplishment, C6-scientific research atmosphere, C7-level of attention by leaders, C8-income satisfaction, C9-keep busy and fulfilling, C10-the competence of my
		manager in making decisions, C11-work stability, C12-policies practice, C13-the chance to try my own methods of doing the job, C14-the chance to do something that
		makes use of my abilities, C15-job satisfaction, C16-work support, C17-income fairness, C18-motivation and salary system,.
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Ascertainment of

the exposure

Non-respondents

Comparability of subjects in different

outcome groups (control for confounding)

Assessment of

the outcome

Statistical test is

appropriate

Total

score

Authors         Representativeness of the sample         Sample size           Xu,2012         1         1           Gu,2012         0         1           Yao,2011         0         1           Lu,2018         1         1           Ou,2018         1         1           Xu,2015         0         1           Lu,2018         1         1           Xu,2015         0         1           Liu,2019         1         1           Zhang,2013         0         1           Liu,2017         1         1           Shen,2018         1         1           Zhang,2015         0         1           Wan,2013         0         1           Wan,2013         1         1           Sun,2013         1         1           Liu JL,2019         1         1		oss-sectional; Score: 1=a Representativeness	*
Gu,201201Yao,201101Lu,201811Ou,201811Xu,201501Liu,201911Zhang,201301Shen,201811Zhang,201501Zhang,201411Sun,201311	Authors	-	Sample size
Yao,201101Lu,201811Ou,201811Xu,201501Liu,201911Zhang,201301Shen,201811Zhou,201601Van,201301Fang,201411Sun,201311	Xu,2012	1	1
Lu,201811Ou,201811Xu,201501Liu,201911Zhang,201301Liu,201711Shen,201811Zhang,201501Van,201301Fang,201411Sun,201311	Gu,2012	0	1
Ou,201811Xu,201501Liu,201911Zhang,201301Liu,201711Shen,201811Zhaug,201501Wan,201301Fang,201411Sun,201311	Yao,2011	0	1
Xu,201501Liu,201911Zhang,201301Liu,201711Shen,201811Zhang,201501Wan,201301Fang,201411Sun,201311	Lu,2018	1	1
Liu,201911Zhang,201301Liu,201711Shen,201811Zhou,201601Zhang,201501Wan,201301Fang,201411Sun,201311	Ou,2018	1	1
Liu,201911Zhang,201301Liu,201711Shen,201811Zhou,201601Zhang,201501Wan,201301Fang,201411Sun,201311	Xu,2015	0	1
Liu,201711Shen,201811Zhou,201601Zhang,201501Wan,201301Fang,201411Sun,201311	Liu,2019	1	1
Shen,2018       1       1         Zhou,2016       0       1         Zhang,2015       0       1         Wan,2013       0       1         Fang,2014       1       1         Sun,2013       1       1	Zhang,2013	0	1
Shen,2018       1       1         Zhou,2016       0       1         Zhang,2015       0       1         Wan,2013       0       1         Fang,2014       1       1         Sun,2013       1       1	Liu,2017	1	1
Zhou,201601Zhang,201501Wan,201301Fang,201411Sun,201311		1	1
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Wan,2013     0     1       Fang,2014     1     1       Sun,2013     1     1		0	1
Fang,201411Sun,201311	-	0	1
Sun,2013 1 1			1
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## Quality scores assessing risk of bias using a modified Newcastle-Ottawa scale

## Table S5 Meta-analyses on 19 factors

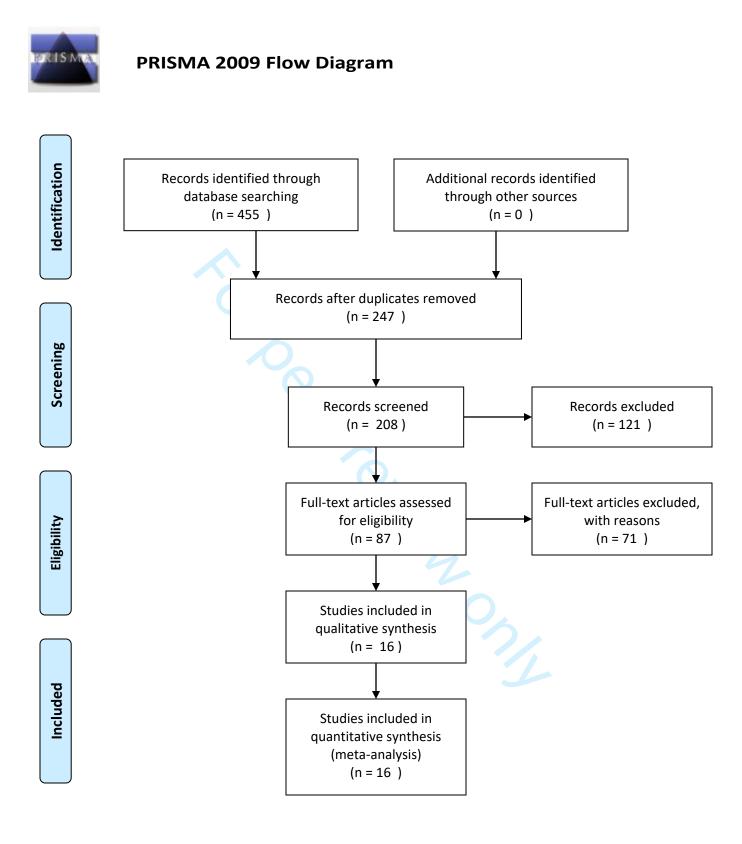
Function	No. of studies in	Composition model	Q test		Statistical	Pooled OR	Z test	Egger
Exposure	Meta-analyses	Comparison model	$I^2$	<i>P</i> -value	model	OR (95%CI)	P-value	P> t
Demographic factors								
Gender	13	Male vs. female	66%	0.0004	Random-effect	1.23 [1.08, 1.40]	0.002	0.240
Age	7	Younger (<35) vs. older (≥35)	56%	0.04	Random-effect	1.47 [1.24, 1.74]	< 0.00001	0.368
		Low-education (junior college or below)						
Education	10	vs. high-education(bachelor degree or	91%	< 0.00001	Random-effect	0.78 [0.60,1.02]	0.07	0.325
		above)						
Marital status	7	Unmarried vs. married	37%	0.15	Fixed-effect	1.16 [1.04, 1.29]	0.007	0.095
Job characteristic factors								
Occupation	5	Doctor vs. nurse	78%	0.001	Random-effect	1.05 [0.78, 1.41]	0.76	0.221
Job title	9	Low-title (no title or junior title) vs. high-	49%	0.05	Fixed-effect	1.11 [1.03, 1.21]	0.007	0.223
Job tille	9	title (middle title or senior title)	49%	0.03	Fixed-effect	1.11 [1.05, 1.21]	0.007	0.225
Work seniority	3	Short (<10) vs. long (≥10)	50%	0.13	Fixed-effect	1.12 [1.82, 1.52]	0.48	0.117
Organizational affiliation	4	Authorized personnel vs. others	38%	0.20	Fixed-effect	0.85 [0.73, 1.00]	< 0.00001	0.400
Work stress	5	High vs. low	0%	0.62	Fixed-effect	3.14 [2.73, 3.61]	< 0.00001	0.169
Job satisfaction factors								
Overall job satisfaction	3	Satisfied vs. dissatisfied	91%	< 0.0001	Random-effect	0.15 [0.04, 0.51]	0.002	0.561
Promotion and individual	3	Satisfied vs. dissatisfied	5.00	0.10	Random-effect	0 10 10 12 0 201	< 0.00001	0.160
development space	3	Sanshed vs. dissanshed	56%	0.10	Kandom-effect	0.19 [0.12, 0.29]	< 0.00001	0.160
Interpersonal relationship	3	Satisfied vs. dissatisfied	0%	0.80	Fixed-effect	0.20 [0.15, 0.28]	< 0.00001	0.522
Keep busy and fulfilling	4	Satisfied vs. dissatisfied	61%	0.05	Random-effect	0.39 [0.33, 0.47]	< 0.00001	0.162
Sense of accomplishment	3	Satisfied vs. dissatisfied	85%	0.001	Random-effect	0.16 [0.08, 0.32]	< 0.00001	0.291

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Income satisfaction	5	Satisfied vs. dissatisfied	94%	< 0.00001	Random-effect	0.33 [0.11, 0.95]	0.04	0.216
Work condition and environment	5	Satisfied vs. dissatisfied	0%	0.59	Fixed-effect	0.19 [0.15, 0.23]	< 0.00001	0.153
Attention by leaders	3	Satisfied vs. dissatisfied	0%	0.76	Fixed-effect	0.20 [0.15, 0.26]	< 0.00001	0.120
The competence of my manager in making decisions	3	Satisfied vs. dissatisfied	70%	0.04	Random-effect	0.18 [0.10, 0.32]	< 0.00001	0.210
Motivation and salary system	3	Satisfied vs. dissatisfied	69%	0.04	Random-effect	0.21 [0.11, 0.38]	< 0.00001	0.161

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From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

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Item No	Recommendation	Reported on Page No
Reporting o	f background should include	
1	Problem definition	3
2	Hypothesis statement	-
3	Description of study outcome(s)	5
4	Type of exposure or intervention used	4
5	Type of study designs used	4-5
6	Study population	6
Reporting o	f search strategy should include	
7	Qualifications of searchers (eg, librarians and investigators)	4
8	Search strategy, including time period included in the synthesis and key words	4, Table S1
9	Effort to include all available studies, including contact with authors	6
10	Databases and registries searched	4
11	Search software used, name and version, including special features used (eg, explosion)	5
12	Use of hand searching (eg, reference lists of obtained articles)	6
13	List of citations located and those excluded, including justification	Fig 1
14	Method of addressing articles published in languages other than English	4-5
15	Method of handling abstracts and unpublished studies	-
16	Description of any contact with authors	-
Reporting o	f methods should include	
17	Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	4-5
18	Rationale for the selection and coding of data (eg, sound clinical principles or convenience)	4-5
19	Documentation of how data were classified and coded (eg, multiple raters, blinding and interrater reliability)	4
20	Assessment of confounding (eg, comparability of cases and controls in studies where appropriate)	-
21	Assessment of study quality, including blinding of quality assessors, stratification or regression on possible predictors of study results	4-5
22	Assessment of heterogeneity	5
23	Description of statistical methods (eg, complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated	4-5
24	Provision of appropriate tables and graphics	Tables 1,s1-s Fig 1
Reporting o	f results should include	
25	Graphic summarizing individual study estimates and overall estimate	Figs 2-4
26	Table giving descriptive information for each study included	Table 1
27	Results of sensitivity testing (eg, subgroup analysis)	-
28	Indication of statistical uncertainty of findings	-

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Reported on Page No
Table 2, Figs2-4
6
6,Tables S4
10-12
11-12
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 Disclosure of funding source

 From: Stroup DF, Berlin JA, Morton SC, et al, for the Meta-analysis Of Observational Studies in Epidemiology (MOOSE) Group. Meta-analysis of Observational Studies in Epidemiology. A Proposal for Reporting. JAMA. 2000;283(15):2008-2012. doi: 10.1001/jama.283.15.2008.



# PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
6 Rationale	3	Describe the rationale for the review in the context of what is already known.	3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	Not applicable
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4
9 Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	4
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4-5
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	4
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	5
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	5
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ² ) for each meta-analysis. For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml	5

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## PRISMA 2009 Checklist

Page 1 of 2 Reported Section/topic **Checklist item** # on page # 6 Risk of bias across studies 15 Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective Not 8 reporting within studies). applicable 9 Additional analyses Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating 16 4 which were pre-specified. RESULTS 17 Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at Study selection 5-6each stage, ideally with a flow diagram. Study characteristics For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and 18 6-7 provide the citations. Risk of bias within studies 19 Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12). 8 Results of individual studies 20 For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each 8-9 intervention group (b) effect estimates and confidence intervals, ideally with a forest plot. Synthesis of results 21 Present results of each meta-analysis done, including confidence intervals and measures of consistency. 8 Present results of any assessment of risk of bias across studies (see Item 15). Risk of bias across studies 22 Not applicable 26 Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]). Additional analysis 23 8 DISCUSSION Summary of evidence 24 Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to 10-11 key groups (e.g., healthcare providers, users, and policy makers). Limitations 25 Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of 11-12 identified research, reporting bias). Conclusions 26 Provide a general interpretation of the results in the context of other evidence, and implications for future research. 11-12 **FUNDING** Funding 27 Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the 12 systematic review.

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42 From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. 43 doi:10.1371/journal.pmed1000097

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