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Job morale of physicians in low- and middle-income countries: a systematic literature review of qualitative studies

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Abstract

Objectives: To systematically review available literature on physicians' and dentists' experiences influencing job morale in LMICs.

Design: The review was conducted following PRISMA guidelines for studies evaluating outcomes of interest by using qualitative methods. The framework method was used to analyse and integrate review findings.

Data sources: A primary search of electronic databases was performed by using a combination of search terms related to the following areas of interest: 'morale', 'physicians and dentists' and 'low- and middle-income countries'. A secondary search was conducted in grey literature, references for included studies and review papers.

Results: Ten papers representing ten different studies and involving 581 participants across seven LMICs met the inclusion criteria for the review. However, none of the studies focused on dentists' experiences were included. An analytical framework including four main categories was developed: work environment (physical and social); rewards (financial, non-financial and social respect); work content (workload, nature of work, job security/stability and safety); managerial context (staffing levels, protocols and guidelines consistency and political interference). The job morale of physicians working in LMICs was mainly influenced by negative experiences. Increasing salaries, offering opportunities for career and professional development, improving physical and social working environment, implementing clear professional guidelines and protocols and tackling healthcare staff shortage may influence physicians' job morale positively.

Conclusions: There were a limited number of studies and a great degree of heterogeneity of evidence. Further research is recommended to assist in scrutinizing context-specific issues and ways of addressing them in order to maximize their utility.

Key words: Job morale, physicians, low- and middle-income countries

Strengths and limitations of this study:

1. Is novel in synthesising qualitative data from all LMICs and provides conclusions based on findings from diverse countries, cultural backgrounds and clinical specialties.
2. Can inform design of potential interventions and workforce policies and interventions in LMICs, therefore their clinical utility can be advanced.
3. Limited availability and heterogeneity of studies allowed drawing only tentative conclusions.
4. Might be limited conceptually since a small number of studies were eligible.

BACKGROUND

The crisis in human resources for health has been defined as one of the most severe global health problems (1) and a major barrier to achieving universal health coverage and building a sustainable health system (2). This crisis is especially acute for low- and middle-income countries (LMICs), many of which suffer from both a shortage and poor devotion of healthcare workers (3).

Due to the far-reaching impact of job morale (JM), interest in the issue among healthcare staff has increased considerably in recent decades (4). Firstly, positive JM is linked to a greater number of medical personnel being recruited and retained (5), which appears to be essential in solving the pressing issue of healthcare staff maldistribution in LMICs (2). Secondly, staff with positive JM are more likely to provide higher quality care to patients (6, 7). Furthermore, improving staff well-being could save healthcare spending, by decreasing financial investments in medical education (8), and lower spending on sickness absence and staff turnover (9).

Despite its importance, there is no universally adopted definition for the concept of JM, nor an agreement on what it constitutes. This could partially explain why research studies aiming to measure JM are somewhat sporadic (10, 11). Although several authors have tried to investigate JM as a single entity (5, 12-15), they ended up measuring its outcomes or explanatory variables (4), such as job motivation, satisfaction, well-being, burnout and depression symptoms.

It was also found, that studies were mainly concentrated either on nurses (10, 11, 16-19) or healthcare staff in general (5, 13, 20-23), although professional group (20) and training status (24-26) are likely to be a significant predictor of JM. A limitation of the current academic literature is that relatively little is known about physicians' and dentists' experience of JM in LMICs (27-29). There is a lack of detailed description of contextual features and latent influences, which could be provided by qualitative research (30). It is critical to determine physicians' and dentists' experiences influencing morale in order to create an analytical framework for effective workforce policies and interventions, which could have a valuable clinical and economic utility. For the purposes of this review we specifically looked at the following components of job morale, including job motivation, job satisfaction, burnout, well-being and symptoms of depression. Therefore, this review aimed to answer for the following research question: Which experiences influence JM among physicians and dentists in LMICs?

METHODS

Search strategy

A systematic search of electronic databases and grey literature was performed following the PRISMA guidelines (31) and according to the review protocol, which has been developed and registered on PROSPERO (CRD42017082579). The following six electronic databases were searched: Scopus, Pubmed, PsycINFO, Embase, Web of Science, and The Cochrane Library up to May 2018. Search terms combined three overlapping areas with key words such as 'morale' OR 'job motivation' OR 'job satisfaction' OR 'well-being' OR 'burnout' OR 'depression symptoms' AND 'physicians' OR 'dentists' AND 'LMICs' (see online supplementary file 1). Publication bias was reduced by searching conference papers and unpublished literature; hand searches of key journals and reference lists were performed.

Selection criteria

Studies were eligible if they assessed any one of the job morale constructs such as job motivation, satisfaction, well-being, burnout and depression symptoms by using qualitative methods; if at least 50% of the sample were qualified physicians and/or dentists employed in public healthcare settings or if data about qualified physicians and/or dentists employed in public healthcare settings were provided separately; if at least 50% of the sample were from the LMICs as defined by World Bank criteria (32) or data from the country of interest was provided separately. Papers were excluded if: more than 50% of the sample were physicians and (or) dentists who were undertaking training at the time of the study (medical students, residents, trainees, registrars, or junior physicians); articles that were only available in languages that are neither Latin script, Russian or Kazakh. There was no limitation regarding study design or type and articles were considered without restriction on date of inception. All included articles were inspected independently by a second researcher (SZS) to verify inclusion.

Considering the definitional imprecision of morale and the different dimensions used in order to characterize it, we employed an inclusive approach adopting of five constructs of interest, including job motivation, satisfaction, well-being, burnout and depression symptoms.

Review strategy

Titles and abstracts of identified articles were exported in to EndNote X8 and were screened by the first reviewer (AS) in order to exclude irrelevant studies and duplicates. Full text articles were inspected again for the relevance according to the inclusion criteria. A random sample of 20% of the articles was independently screened by the second reviewer (SZS) at each stage. Discrepancies were resolved by involving a third reviewer (SP) (Inter-Rater Reliability 0.80; 0.75; 0.70).

Data extraction and quality assessment

Data from each paper, including study details, participant demographics and key findings were extracted (see online supplementary file 2). The second reviewer (SZS) ensured the accuracy at this stage by extracting data from 20% of the included papers. One article written in Portuguese was extracted by involving a native speaker. Methodological quality was assessed using the Critical Appraisal Skills Programme (CASP) for qualitative studies (33).

Data synthesis and risk of bias assessment

As part of the framework method (34), data from the results sections of included articles were coded in the reviewing software (EPPI-reviewer) and preliminary concepts describing physicians' experiences were defined inductively. Similar concepts were grouped into categories and sub-categories independently by two reviewers (AS, SZS) and were discussed with other researchers (SP, FM, SN) to ensure the range and depth of the coding. The defined categories were then organized in the analytical framework. The framework matrix was used to provide a list of illustrative quotations. Additionally, vote counting (35) was used to present how prevalent each category was within the included studies.

Based on Critical Appraisal Skills Programme (CASP) studies were appraised in accordance with ten criteria, where the majority of studies were rated as appropriate with regard to aims, methodology and research findings (see online supplementary file 3).

Patient and public involvement

The results of the analysis were solely based on the previously published literature, as this study did not involve patients or public.

RESULTS

The original search yielded 11,347 articles through database searching and 30 through other sources. 2021 articles were removed as duplicates and 9297 articles were excluded for not meeting the inclusion criteria. The full texts of the remaining 59 papers were examined, ten of which were included and represented ten unique studies. None of the studies focused on dentists' experiences met the inclusion criteria. The detailed selection process is presented in the PRISMA flow diagram (Fig.1).

Overview of included studies

Studies were published between 2010 and 2017, in English, with the exception of one. They were conducted across seven LMICs - in both rural and urban areas. With regards to the study design, four were mixed methods, and six were qualitative. The majority of studies were conducted in primary (29, 36-40) and secondary healthcare settings (41, 42). The included studies characteristics are summarised in Table 1.

Physicians' experiences influencing morale

Identified concepts relevant to physicians' experiences of JM, were grouped into four main framework categories: work environment (I), rewards (II), work content (III) and managerial context (IV). The respective sub-categories within each of these categories are presented in the following section. Illustrative quotations within each category are provided in Table 2.

Work environment

Categories such as physical (29, 36, 38, 39, 42-44) and social (29, 36-44) work environment appeared in all included studies.

1. Physical

Participants expressed that JM was influenced considerably by working conditions, as a crucial source of job motivation (43) and satisfaction (36, 38). Few of them were "satisfied with physical environment" (29), but majority of physicians felt "very disgusted" (44) and "very ashamed" (42) of the hospital infrastructure and constraints of resources, including lack of medicines and equipment deficiency (29, 36, 38, 42, 44). Additionally, physicians noted, that poor physical environment in the hospitals "annoyed patients" (29) and showed awareness that poor hygienic conditions were making patients "more sick" (44). The category addressing 'physical work environment' included residential living conditions for physicians who were based in more rural health settings (29, 38). They described their residences as "inhabitable" houses with poor "water and electricity connections" (29), that are "falling

apart" (38). The limited options for schooling for their children (29, 44) and underdeveloped road access (29) were frustrating and demotivating.

2. Social

Physicians described a sense of "collegiality" and "regular interactions" among staff in the healthcare facilities as a motivator (42) and perceived "poor interpersonal relations" as generally as demotivating (43). Four main sub-categories contributed to defining the 'social environment' category: relationships with nurses and axillary staff (29, 38, 39, 42, 43); relationships with other physicians (36, 38, 42); relationships with patients (29, 40-42); relationships with managers/ supervisors (29, 38, 41-44).

Participants questioned the professional "competency" (42) and "power" (39) of nurses, and noticed that auxiliary staff were "unsupportive and apprehensive" and worked "often without a license to practice" (29).

Relationships with other fellow physicians were found to be "very stimulating" (42) not only within a hospital, but this view also emerged in case of "visiting consultants" in rural settings (38).

There was inconsistency in experiences relating to physician – patient relationships. Some participants "seemed fairly happy" (42) and "expressed satisfaction with their current relationships" (36). However, others expressed the view, that physicians "often had to see angry patients" (29), who "could not understand the physicians' work" (36) and tend to "bring all their problems [beyond health-related]" (40). It was emphasized, that "difficult" patients are significant cause of physicians' burnout.

Physicians indicated that relationships with managers/supervisors mainly depended on provision of "adequate supervision" (44) with enough respect (38, 42); support (42, 44), recognition (29, 42) and autonomy (41, 44). "Poor supervision" (43) demotivated physicians and "total control" by managers/supervisors contributed to their burnout (41).

I. Rewards

Almost all papers discussed the importance of financial (29, 36-38, 41-44) and non-financial (29, 36-38, 42-44) rewards in medical practice.

1. Financial

The majority of physicians felt that their financial compensation was "not acceptable" (44), "low" (41) and "failed to reflect the job's value" (36), especially in rural areas (37, 38) and considered their low salaries as a significant "demotivator" (43). However, some participants noted, that medical practice has advantageous financial incentives, such as state pension, paid holidays and sabbatical leaves (42).

2. Non-financial

Despite the importance of financial incentives, physicians highlighted, that "money is not the most important factor for any clinician" (38). Career development appeared to be significant in determining physicians' JM (29, 38, 42-44). However, they showed the general sense of dissatisfaction "with overall process of promotions and transfers in the public health sector" (29). Conceptually, career development linked closely connected with the availability of learning, teaching and research opportunities (29, 38, 39, 42, 43), which were "necessary for the professional growth of physicians" (29). Moreover, social respect was also considered as a non-financial incentive (29, 36, 37, 40), which can vary in terms of the professional reputation, gained by years of practice (37) and admiration of public servants, as a part of the community culture (29) and across different physicians' specialties (40).

II. Work content

The overarching category of 'work content' sub-categories, such as workload, nature of work (29, 37, 40, 42), job security (29, 42, 43), and physical and legal safety, was observed in almost all included papers as experiences influencing JM.

1. Workload

Workload was mentioned broadly across all included studies (29, 37, 39-44). Specifically, physicians complained about "too many working hours" (41), the necessity to be "on the end of the phone" (42). Emergency duties and long working hours were especially discouraging for married female physicians and single mothers (42), because they worried that "their other responsibilities remain unattended" (29). Additional frustration was related to the large number of patients in-charge (37) and "fixed times for appointments" (40).

2. Nature of work

Despite of the excessive workload, physicians have emphasized that the "serving" nature of medical profession (29, 36, 37, 40, 42) and the diversity (40, 42) of work was extremely satisfying (36) and motivating (43). Participants felt "a sense of achievement" (36), when they "get results and see patients feeling better" (40). They also expressed a "passion to serve their own communities" (29).

3. Job security/stability

Furthermore, some physicians reported that regardless of "whether you do it well or whether you don't do it so well" (42), working in public healthcare facilities "ensured job security for the rest of their careers" (29) and provided them with the "ability to support" their families (43).

4. Physical and legal safety

The motivation experienced as a result of job security and stability was contrasted with the demotivation felt due to low levels of "personal safety" (43), especially for rural female physicians (29) and growing responsibility for patients, "in legal sense" (42). However, it has been noted that, medico-legal risk for physicians could be mitigated by interns, residents and registrars, who "shield" physicians from assuming complete medico-legal responsibility for all patients (42).

III. Managerial context

Experiences within the managerial aspect of medical practice were broadly discussed in terms of the staffing levels (29, 36, 38, 40-42, 44); protocols and guidelines consistency (29, 39, 42, 44), and political interference (29, 44).

1. Staffing levels

Low staffing levels of physicians, medical assistants and managers appeared to be a substantial cause of dissatisfaction (36, 42) and revealed related challenges, such as absenteeism (29, 44) and retention (42). Excessive workload caused by the deficit of physicians (44) and medical assistants (40), resulted in physicians being frequently "absent" from their duties (29) and "encourage[d] others to leave" (42) as well. Moreover, it seemed quite difficult to attract people to work in healthcare facilities, as "despite the district posting the growing vacancies for multiple years, no applications had been received" (44). At the same time, physicians raised a concern, that vacant posts may not be advertised properly (38). The additional burden of paperwork (40, 41) fell on physicians as a result of administrative staff deficiency (42), which could be alleviated by implementation of electronic medical systems (40).

2. Protocols and guidelines consistency

Physicians stated, that job descriptions, protocols and guidelines regulating the drug prescriptions (39) and performance appraisal (29) processes "needed to be revised to include the solutions to the current work place problems" (29). Nonetheless, the "growing requirements" (41) as a consequence of the increasing number of "regulations and rules" (42) were highlighted as a source of frustration (42) and burnout (41).

3. Managerial context

Certain physicians felt, that managerial work context was possibly disrupted by "politically powerful persons" (29) interfering "in the decision making [process] at health facilities" (44) and their attempts to get a prioritized treatment for relatives (29). Some participants believed that it was difficult to be promoted or transferred to a desired position

"without links with any influential person" (29) and mentioned cases of "intimidation of health workers by local politicians" (44).

DISCUSSION

Main findings

The aim of our systematic review was to synthesize qualitative studies exploring physicians' experiences influencing JM in LMICs.

The analytical framework, that included four main categories of work environment (I), rewards (II), work content (III) and managerial context (IV), was developed based on concepts that emerged from included studies. According to the vote counting results, workloads, working conditions and financial rewards were most frequently mentioned as influencing JM and have been described in almost all studies. Experiences, regarding staffing levels, career and professional development, relationships with nurses/auxiliary staff and managers/supervisors were not as commonly reported but were still mentioned as important in majority of studies. Physicians from almost half of the included studies focused their attention on the nature of work, relationships with patients, protocols and guidelines consistency.

Physicians were quite consistent in defining whether their experiences were positive or negative. Negative experiences related to excessive workload, low salaries, poor working and living conditions, less opportunities for career and professional development, staff shortage, tense physician-nurse and physician-manager/supervisor relationships, inconsistent professional guidelines and political interference. Although physicians reported more negative experiences, positive experiences were also underlined in terms of the serving nature of work, being given social respect, job stability and collegial relationships with other physicians.

Strengths and limitations

To our knowledge, this is the first systematic review of qualitative studies exploring physicians' experiences influencing JM in LMICs. A further strength is that review included papers from all LMICs and did not limit searches by physicians' specialty or to English language publications only, which allowed the inclusion of data from diverse countries, cultural backgrounds and clinical specialties. However, this approach presented some limitations. Firstly, although it was possible to extract general concepts in physicians' experiences from the diverse samples found generalizations to all types of physicians and

countries should be made cautiously, because there was not enough evidence to assess whether there are significant differences based on region or clinical specialty. Secondly, prevalence of negative experiences over positive ones could be caused by a bias in research methodology towards exploring difficulties. Thirdly, heterogeneity of studies due to imprecise definitions of the concept of 'JM', made it challenging to provide firm conclusions. Although dentists were included in the research focus, none of the studies on dentists met the inclusion criteria; results therefore are likely to be unrepresentative for them.

Despite these limitations, the current review is a valuable collation of studies that establishes the importance of physicians' experiences that influence morale.

Comparison with literature

The present review supports qualitative findings from previous studies that have been conducted in high-income countries (HICs). It is particularly consistent with findings that serving and helping patients (13, 45, 46), working on diverse medical cases (13, 20, 46, 47) and healthy relationships with other medical staff (13, 14, 46, 48, 49) constitute as positive experiences and enhances a workers' JM. It supports evidence that excessive workload (20, 47, 48, 50, 51), insufficient staffing levels (13, 49, 51), administrative burden (20, 48, 51) and poor relationships and understanding between medical staff and managers (13, 48, 51) influence JM negatively. Contrary to our findings, healthcare staff employed in high-income countries indicated positive experiences regarding the consistency of existing protocols and guidelines (13, 46), relationships with patients (45, 48, 49) and opportunities for continuing education (52). The review also demonstrated some evidence regarding poor physical environment within healthcare facilities and constraints of resources, as has been recorded previously (13, 48, 51); but these findings should be interpreted cautiously due to their context-dependency (53). Additionally, quantitative findings from the studies and review papers focused on healthcare staff working in HICs corroborate results of the present review by establishing associations between JM and variables, such as financial rewards (54-58), workload (4, 54-56, 58), recognition (13, 21), support (21, 51) autonomy (21, 55, 57), staffing levels (59), learning/teaching/research opportunities (54, 59), workload (4, 54-56, 58), diversity of work (54, 58), relationships with colleagues (21, 54, 55, 57, 59), job security and protocols and guidelines consistency (51, 57). Nevertheless, this comparison should be interpreted with caution due to the limited extent to which evidence can be transferred from HICs countries to LMICs.

Implications for research and practice

By considering physicians' experiences across seven LMICs the current review findings suggests that, to advance current clinical practices by enhancing JM, interventions and workforce policies should aim at increasing salaries, improving working and living conditions, tackling healthcare staff shortage and excessive workload and providing more opportunities for career and professional development. Also, findings suggest that professional guidelines, such as job descriptions, performance appraisal and protocols regulating drug prescriptions should be revised and effectively implemented. This may have potential positive influence on physician-nurse relationships by maximizing role clarity.

However, in order to generate clear directives for improvements, future research studies should investigate whether JM is perceived and valued differently by different physicians' specialties. Second, the research gap around dentists' experiences should be addressed for more accurate conclusions. Third, careful attention must be given to the contextual features because they might limit the applicability of findings from one healthcare setting and region to another. Fourth, existing interventions and strategies should be assessed rigorously in order to define implementation requirements, cost effectiveness, and long-term changes.

CONCLUSIONS

The current review has identified, that perceived threats to positive JM of physicians in LMICs outweigh perceived incentives. A number of experiences have been identified that strategies aiming to improve physicians' JM in LMICs could target. However, it was possible to draw only tentative conclusions due to the heterogeneity of studies, their limited number and quality. Thus, future research into physicians' experiences influencing job morale in LMICs should robustly examine context-specific issues and appropriate ways of addressing them, to ensure that the results can be translated locally in order to improve healthcare practice.

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References

1. Aluttis C, Bishaw T, Frank M. The workforce for health in a globalized context – global shortages and international migration2014. 23611 p.
2. WHO. Global strategy on Human Resources for health: Workforce 2030 Geneva, Switzerland: World Health Organisation; 2016 [Available from: http://www.who.int/hrh/resources/pub_globstrathrh-2030/en/.
3. WHO. The world health report 2006 - working together for health Geneva, Switzerland: World Health Organisation 2006 [Available from: http://www.who.int/whr/2006/en/.
4. Grieve S. Measuring morale - Does practice area deprivation affect doctors' well-being?1997. 547-52 p.
5. Reininghaus U, Priebe S. Assessing morale in community mental health professionals: a pooled analysis of data from four European countries. Social psychiatry and psychiatric epidemiology. 2007;42(3):237-43.
6. Department of Health. NHS Health and Wellbeing: Final Report.: Department of Health 2009 [Available from: http://webarchive.nationalarchives.gov.uk/20130124052412/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_108907.pdf.
7. Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. PloS one. 2016;11(7):e0159015.
8. Kirigia JM, Gbary AR, Muthuri LK, Nyoni J, Seddoh A. The cost of health professionals' brain drain in Kenya. BMC health services research. 2006;6:89.
9. Chaudhury NHJ. Ghost Doctors: Absenteeism in Bangladeshi Health Facilities: The World Bank; 2003. 52 p.
10. McFadzean F, McFadzean E. Riding the emotional roller-coaster: a framework for improving nursing morale. J Health Organ Manag. 2005;19(4-5):318-39.
11. Day GaMVaPJ. Nursing morale: what does the literature reveal? 2006;30:516-24.
12. K. Johnsrud L. Measuring the Quality of Faculty and Administrative Worklife: Implications for College and University Campuses2002.
13. Totman J, Hundt G, Wearn E, Paul M, Johnson S. Factors affecting staff morale on inpatient mental health wards in England: A qualitative investigation2011. 68 p.
14. Johnson S, Wood S, Paul M, Osborn D, Wearn E, Lloyd-Evans B, et al. Inpatient Mental Health Staff Morale: a National Investigation2011.
15. Gulliver P, Towell D, Peck E. Staff morale in the merger of mental health and social care organizations in England. J Psychiatr Ment Health Nurs. 10. England2003. p. 101-7.
16. Callaghan M. Nursing morale: what is it like and why? Journal of advanced nursing. 42. England2003. p. 82-9.
17. Cox KB. The effects of unit morale and interpersonal relations on conflict in the nursing unit. Journal of advanced nursing. 35. England2001. p. 17-25.
18. Haw MA, Claus EG, Durbin-Lafferty E, Iversen SM. [Improving job morale of nurses despite insurance cost control. 1: Organization assessment]. Pflege. 2003;16(2):103-10.
19. Yang KP, Huang CK. The effects of staff nurses' morale on patient satisfaction. The journal of nursing research : JNR. 2005;13(2):141-52.

20. Priebe S, Fakhoury WK, Hoffmann K, Powell RA. Morale and job perception of community mental health professionals in Berlin and London. Social psychiatry and psychiatric epidemiology. 2005;40(3):223-32.
21. Johnson S, Osborn D, Araya R, Wearn E, Paul M, Stafford M, et al. Morale in the English mental health workforce: Questionnaire survey2012. 239-46 p.
22. Bowers L, Allan T, Simpson A, Jones J, Whittington R. Morale is high in acute inpatient psychiatry. Social psychiatry and psychiatric epidemiology. 2009;44(1):39-46.
23. Abraham LJ, Thom O, Greenslade JH, Wallis M, Johnston AN, Carlstrom E, et al. Morale, stress and coping strategies of staff working in the emergency department: A comparison of two different-sized departments. Emergency medicine Australasia : EMA. 2018;30(3):375-81.
24. NHS Staff Surveys [Available from: http://www.nhsstaffsurveys.com/Page/1064/Latest-Results/2017-Results/.
25. Dyrbye LN, West CP, Satele D, Boone S, Tan L, Sloan J, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. Acad Med. 2014;89(3):443-51.
26. Panagopoulou E, Montgomery A, Benos A. Burnout in internal medicine physicians: Differences between residents and specialists. Eur J Intern Med. 17. Netherlands2006. p. 195-200.
27. Chopra M, Munro S, Lavis JN, Vist G, Bennett S. Effects of policy options for human resources for health: an analysis of systematic reviews. Lancet. 371. England2008. p. 668-74.
28. Mathauer I, Imhoff I. Health worker motivation in Africa: The role of non-financial incentives and human resource management tools. Human resources for health. 2006;4.
29. Shah SM. Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakistan. 2016;5(8):467-75.
30. Victora CG, Habicht J-P, Bryce J. Evidence-Based Public Health: Moving Beyond Randomized Trials. American journal of public health. 2004;94(3):400-5.
31. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS Med. 2009;6(7):e1000097.
32. World Bank Open Data 2018 [Available from: https://data.worldbank.org.
33. Critical Appraisal Skills Programme. CASP Qualitative 2018 [Available from: https://casp-uk.net/wp-content/uploads/2018/01/CASP-Qualitative-Checklist.pdf.
34. Gale NK, Heath G, Cameron E, Rashid S, Redwood S. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC Med Res Methodol. 2013;13:117.
35. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC Methods Programme2006.
36. Chen Q, Yang L, Feng Q, Tighe SS. Job Satisfaction Analysis in Rural China: A Qualitative Study of Doctors in a Township Hospital. Scientifica. 2017;2017:1964087.
37. Li T, Lei T, Sun F, Xie Z. Determinants of village doctors' job satisfaction under China's health sector reform: a cross-sectional mixed methods study. International journal for equity in health. 2017;16(1):64.
38. Kotzee TJ, Couper ID. What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? Rural and remote health. 2006;6(3):581.

39. Feliciano KVO, Kovacs MH, Sarinho SW. Burnout among Family Healthcare physicians: The challenge of transformation in the workplace. Ciencia e Saude Coletiva. 2011;16(8):3373-82.
40. Wallace LS, Brinister I. Women family physicians' personal experiences in the republic of Moldova. Journal of the American Board of Family Medicine. 2010;23(6):783-9.
41. Liadova AV, Korkiya ED, Mamedov AK, Panich NA. The burnout among emergency physicians: Evidence from Russia (sociological study). Man in India. 2017;97(15):495-507.
42. Ashmore J. 'Going private': A qualitative comparison of medical specialists' job satisfaction in the public and private sectors of South Africa. 2013;11:1.
43. Malik AA, Yamamoto SS, Souares A, Malik Z, Sauerborn R. Motivational determinants among physicians in Lahore, Pakistan. BMC health services research. 2010;10:201.
44. Luboga S, Hagopian A, Ndiku J, Bancroft E, McQuide P. Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals. The International journal of health planning and management. 2011;26(1):2-17.
45. Zwack J, Schweitzer J. If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians. Acad Med. 2013;88(3):382-9.
46. Sofia Kjellström and Gunilla Avby and Kristina Areskoug-Josefsson and Boel Andersson Gäre and Monica Andersson B. Work motivation among healthcare professionals: A study of well-functioning primary healthcare centers in Sweden. Journal of Health Organization and Management. 2017;31(4):487-502.
47. Agana DF, Porter M, Hatch R, Rubin D, Carek P. Job Satisfaction Among Academic Family Physicians. Fam Med. 2017;49(8):622-5.
48. Reid Y, Johnson S, Morant N, Kuipers E, Szmukler G, Thornicroft G, et al. Explanations for stress and satisfaction in mental health professionals: a qualitative study. Social psychiatry and psychiatric epidemiology. 1999;34(6):301-8.
49. Hall LaJJaHJaWIaAKaOCD. Strategies to improve General Practitioner wellbeing: A focus group study. 2017;35.
50. Kruse GR, Chapula BT, Ikeda S, Nkhoma M, Quiterio N, Pankratz D, et al. Burnout and use of HIV services among health care workers in Lusaka District, Zambia: a cross-sectional study. Human resources for health. 2009;7:55-.
51. Cahill JaGSaBMaBPaRD. Systematic review of staff morale in inpatient units in mental health settings. 2018.
52. Priebe S, K H Fakhoury W, Hoffmann K-M, Powell R. Morale and job perception of community mental health professionals in Berlin and London2005. 223-32 p.
53. Willis-Shattuck M, Bidwell P, Thomas S, Wyness L, Blaauw D, Ditlopo P. Motivation and retention of health workers in developing countries: a systematic review. BMC health services research. 2008;8:247.
54. Van Ham I, Verhoeven AA, Groenier KH, Groothoff JW, De Haan J. Job satisfaction among general practitioners: a systematic literature review. Eur J Gen Pract. 12. England2006. p. 174-80.
55. Scheurer D, McKean S, Miller J, Wetterneck T. U.S. physician satisfaction: a systematic review. J Hosp Med. 2009;4(9):560-8.
56. Tomljenovic M, Kolaric B, Stajduhar D, Tesic V. Stress, depression and burnout among hospital physicians in Rijeka, Croatia. Psychiatria Danubina. 2014;26 Suppl 3:450-8.
57. Goetz K, Jossen M, Szecsenyi J, Rosemann T, Hahn K, Hess S. Job satisfaction of primary care physicians in Switzerland: an observational study. Family practice. 33. England:

The Author 2016. Published by Oxford University Press For permissions, please e-mail: journals.permissions@oup.com.; 2016. p. 498-503.
58. Joyce C, Wang WC. Job satisfaction among Australian doctors: the use of latent class analysis. J Health Serv Res Policy. 20. England: The Author(s) 2015.; 2015. p. 224-30.
59. Janus K, Amelung VE, Gaitanides M, Schwartz FW. German physicians "on strike"--shedding light on the roots of physician dissatisfaction. Health Policy. 82. Ireland2007. p. 357-65.

Table 1. Characteristics of included studies

N	Authors, year	Country (income group)	Setting	Study design	Data collection	Sampling	Sample size	Gender	Age/average
1	Ashmore, 2013 (41)	South Africa (upper-middle income)	Urban	Qualitative	Semi-structured interviews (primary and follow-ups)	Purposive	51 (28 dual practice doctors and 23 policymakers/managers)	64% - males 36% - females	29-63/not stated
2	Chen et al., 2017 (35)	China (upper-middle income)	Rural	Qualitative	Focus groups	Not stated	39 doctors	59% - males 41% - females	Not stated/38-47 (in 5 different settings)
3	Feliciano et al., 2011 (38)	Brazil (upper-middle income)	Urban	Qualitative	Semi-structured interviews	Purposive	24 doctors (12-pediatricians, 8 - GPs, psychiatrist, infectologists, obstetric gynecologist, anesthesiologist)	66.7% - males 33.3% - females	Not stated
4	Kotzee and Couper, 2006 (37)	South Africa (upper- middle income)	Rural	Qualitative	Semi-structured interviews	Unclear – random or purposive (both stated)	10 non-specialist qualified doctors	60% - males 40% - females	25-36/not stated
5	Li et al., 2017 (36)	China (upper-middle income)	Rural	Mixed methods	Semi-structured interviews	Purposive	34 (21 village doctors and 13 managers)	76.5% - males 23.5% - females	Not stated
6	Liadova et al., 2017 (40)	Russia (upper-middle income)	Urban	Mixed methods	In-depth interviews	Not stated	50 emergency doctors	60% - males 40% - females	25-50/not stated

7	Luboga et al., 2010 (43)	Uganda (low income)	Not stated	Mixed methods	Focus groups	Stratified random	49 doctors	90% - males 10% - females	26-70/36
8	Malik et al., 2010 (42)	Pakistan (lower-middle income)	Urban	Mixed methods	Open ended questionnaire	Stratified random	360 doctors	50% – males 50% - females	Not stated
9	Shah et al., 2016 (29)	Pakistan (lower-middle income)	Rural	Qualitative	Semi-structured and in-depth interviews	Not stated	22 (16 doctors and 6 managers/administrators)	86.4% - males 13.6% - females	Not stated/38
10	Wallace and Brinister, 2010 (39)	Moldova (lower-middle income)	Urban	Qualitative	In-depth interviews	Purposive	20 family physicians	100% - females	Not stated/ 42.4±7.2

Table 2. Illustrative quotations

Categories and sub-categories	Relevant studies (Vote-counting)	Supporting Quotations
I. Work environment		
1.Physical	***9 studies -*** *(29, 36, 38-44)*	
1.1. Working conditions	***8 studies*** *- (29, 36, 38-40, 42-44)*	
1.1.2. Hospital infrastructure	*7* ***studies*** *-(29, 36, 38, 40, 42-44)*	*"Yes, it's [the hospital] not really good for really working…" (Kotzee and Couper, 2006)*
		"I think we make our patients more sick in the hospital - somebody can come with one disease and go away with five diseases. The infection control is very poor mainly because the facility is so bad. Sometimes you have no soap to wash the hands. These are the hopeless situations when you are working in such a place that you feel very disgusted when you look at the bed, you look at the mattress on bed and you look at the bed sheets the patient is sleeping in."(Luboga et al., 2011)
		"Okay, you just go and look at the lavatories, especially in the public areas . . . That's the consumer, but you know there are ways you can deal with that, and one of the ways to deal is that you have some sort of attendant, and constant cleaning of the lavatories. I mean a lot of patients come to me and . . . refuse to go to the lavatory because they say it's so filthy . . . And that makes one feel very ashamed . . . Telephones get stolen . . . bed linen gets stolen, and you're working in that environment . . . where there isn't a blanket to put on the patient, there isn't a pillow for her head and it' s because things have been nicked. So and all of that you know is difficult." (Ashmore, 2013)
		"When you are engaged in work, it is difficult to survive in summer without air conditioning, because it is extremely hot in the summer in Guangxi, with peak temperatures even up to 40∘C sometimes." (Chen et al.)
1.1.3. Availability of resources	*7* ***studies*** *-(29, 36, 39, 40, 42-44)*	*"Okay firstly… our casualty… there is virtually nothing you know related to emergency…if you want to attend to an emergency patient there isn't much you can use except maybe things like … IV lines… may be a drip stand; since I came here we didn't have simple things like glucometers. So every time a patient comes and*

		you want to do the glucose level you have wait for the lab to do it. Recently they have introduced some glucometers but they wok only for a few months… maybe there is one BP machine, which is used by two or three different wards. They have to wait until the other ward is done so they can go and borrow so it is – yeah – it is a problem" (Kotzee and Couper, 2006)
		"Then another thing is equipment. We are doing operations but we do not have some equipment like theatre lights. After complaining we were given a tube for operation, but even in the whole ward we do not have enough lights. And can you imagine the whole of this hospital with only two oxygen concentrators? At least every ward should be having one or two. We have only one for the paediatric ward after complaining so long. So if you are using it on the child, and someone else needs it you either remove the child to die or you wait for the other to die." (Luboga et al., 2011)
		"…you are in the teaching facility. I mean you would love to have all the modern things like the books the overseas people are talking about and you would love to impart that knowledge onto your students. But we don't have the equipment, I mean we have but you will find that they are outdated…" (Ashmore, 2013)
1.2. Living conditions	***3 studies*** *-(29, 38, 44)*	*"… the other most important thing is good accommodation; but anybody is going to struggle with accommodation they are not going to enjoy working there… you don't want to wake up in the morning and know that you are going to share your bathroom with four other people and staff like that…" (Kotzee and Couper, 2006)*
		"…I joined BHU because I hoped to get a house to live; but the BHU residence is not worth living…" (Shah et al., 2006)
		"Who will w willing to work in a BHU which doesn't even have road access? I have to walk two kilometres daily to reach the main road leading to the BHU where I work." (Shah et al., 2006)
2.Social	***9 studies*** *-(29, 36, 38-44)*	
2.1. Relationships with nurses and auxiliary staff	***5 studies*** *-(29, 38, 39, 42, 43)*	*"There is a difficulty I terms of the nursing staff and I don't think when I was a registrar it was better. I think the staff were trained differently, they were trained in general nursing and then midwifery so the midwives instead of doing 3 months*

		or whatever it is in midwifery and a general training so they're less competent… the doctors picking up a lot of duties which the nurses should do automatically and they don't…Which makes it far less satisfying for the doctor, and far more stressful because… you can't trust the instructions are definitely going to be carried out." (Ashmore, 2013)
		"…it was shock to me, because in training people did not exist the nurse with as much power as she has today in the family health unit, it was a very big shock when I arrived... I see nurse being a doctor, I was horrified, so I asked myself: what I am doing here, what is left for me?" (Feliciano et al., 2011)
2.2. Relationships with other doctors	***2 studies** -(38, 42)*	*"… it is very stimulating to work in a collegial and academic environment where you're going to, you know, X-ray meetings and you're on wards rounds, with consultants that are giving their different inputs…" (Ashmore, 2013)*
		"…what has helped keep me stimulated is even though we are in rural area there are so many visiting consultants coming from Wits and Garankuwa and Polokwane… Just knowing that there's people coming every month or so that are interested in what you're doing: that can support you and you can always ask them; it definitely improves the quality of your work and the job satisfaction and you feel less out of touch and that you're doing the right thing, sometimes you need a bit of reassurance that you are doing the right things under the circumstances." (Kotzee and Couper, 2006)
2.3. Relationships with patients	***5 studies** -(29, 36, 40-42)*	*"…some of my patients do not want to be informed or listen to me." (Wallace and Brinister, 2010)*
		"Most patients with hypertension do not understand it. It is hard to convince them to come back to the clinic." Wallace and Brinister, 2010
		"Sometimes they cursed and shouted at us. Even worse, some patients doubted the value of our medical services," (Chen et al., 2017)
2.4. Relationships with managers/supervisors	***5 studies** -(29, 38, 41, 42, 44)*	
2.4.1 Respect	***2 studies** -(38, 42)*	*"I don't think… [the administration]" quite realise the human resources they have available to them. I think sometimes they don't actually realise they're working with professionals, and they don't treat us as such…" (Ashmore, 2013)*
2.4.2. Support	***2 studies** -(42, 44)*	*"You feel that you're being hamstrung at every turn by the state you're trying to*

		do. They don't make an effort to find out what's required by people who are actually doing the job…" (Ashmore. 2013)
2.4.3. Recognition	***2 studies** -(29, 42)*	*"…In many other organizations, people with our skills and experience would be very highly valued and perceived as such. But you know here we don't get perceived or treated like that at all… " (Ashmore. 2013)*
2.4.4. Autonomy	***2 studies** -(41, 44)*	*"…management gave appropriate autonomy to staff, while still providing adequate supervision." (Luboga et al., 2011)*
II. Rewards		
1.Financial	***8 studies** -(29, 36-38, 41-44)*	*"I am really willing to be a village doctor; it's a good job, you know. However, the income is too low to subsist on. I must earn what I need for living. " (Li et al., 2017)*
		"Now there are more and more people breeding silkworms. They even earn more than us (village doctors). " (Li et al., 2017)
		"Our main purpose (to work in BHUs) is salary; which does not match with our qualifications…" (Shah et al., 2006)
		"I earned below 2000 RMB (USD 303) per month, and sometimes I work more than 14 hours in one day." (Chen et al., 2017)
2.Non-financial		
2.1. Career development	***5 studies** -(29, 38, 42-44)*	*". . . when you go into a job you need something that's got a career path, and there aren't career paths [in public]. There's a few, a small little cadre at the top, a small group of people who get to principal or chief or specialist, and the rest of the people can spend their entire career as a senior specialist no matter how brilliant they are and much of a contribution they make." (Ashmore, 2013)*
2.2. Professional development		
2.2.1. Learning opportunities	***5 studies** -(29, 38, 39, 42, 43)*	*"…one of the things that is really distressing me for a few years, because [Family Healthcare Strategy] stopped doing the education work…" (translation) (Feliciano et al., 2011)*
		"Job satisfaction includes professional development, and there is no provision to allow us to further our qualification." (Luboga et al., 2010)
2.2.2. Teaching/research	***1 study** -(42)*	*"… it is good and interesting to have students around you. So the teaching*

opportunities		*component of it I've always found just varies your day. It adds a little bit of an extra dynamic to what your routines are, so it can be quite fan and it's… a little bit challenging, and it just…adds spice to all your humdrum things." (Ashmore, 2013)*
3.Social respect	***4 studies** -(29, 36, 37, 40)*	*"Although there have been many changes along with rapid development, patients still looks for me when they get sick because of my reputation. All their family members know me and come to me for help." (Li et al., 2017)*
		"People hardly knew me when I just came back home for the job in 1998. At that time, patients didn't know of my abilities. Everything was difficult. It got better several years later, as I worked longer." (Li et al., 2017)
		"Wherever we go, people respect us, just like we have some guarantee. We're certainly satisfied by this." (Li et al., 2017)
		"People don't consider a family physician important in their lives. They don't appreciate their family physician, but they do specialists."(Wallace and Brinister, 2008)
		"Most of the patients here are local farmers. They are honest and full of integrity. They followed our advice and showed their appreciation to us." (Chen et al., 2017)
III. Work content		
1.Workload	***8 studies** -(29, 37, 39-44)*	*"Too much workload now. I am in charge of only one village, with about 1500 residents. However, thy live dispersedly. One is here, while another is quite far away. I run around all day long, but still can only offer public health services for several households." (Li et al., 2017)*
		"There is no time for my family and children." (Wallace and Brinister, 2008)
		"…the number of patients and the little time for consultation, so I have no conditions…" (translation) (Feliciano et al., 2011)
2.Nature of work	***4 studies** -(29, 37, 40, 42)*	
2.1. Serving people	***4 studies** -(29, 36, 37, 40, 42)*	*"…you feel like you're making a tangible difference to people's lives" (Ashmore, 2013)*
		"I like the work because you get to know entire families. My patients are like my extended family. When I get results, it makes me very happy." (Wallace an Brinister, 2010)
		"When my patients are cured after treatment, I feel so fulfilled and delighted. One

		patient still maintains contact with me. Our friendship began when he came to me with appendicitis. He has been well for five years now." (Chen et al., 2017)
2.2. Diversity	***2 studies** -(40, 42)*	*"You never know what the next case is. [Family medicine] forces you to use all the knowledge you learned at university" (Wallace an Brinister, 2010)*
3. Job security/stability	***3 studies** -(29, 42, 43)*	*"…the public sector is rick solid, so you basically have to do something bad to get fired. So there is a high degree of certainty in your job…" (Ashmore, 2013)*
4. Safety	***3 studies** -(29, 42, 43)*	
4.1. Physical	***2 studies** -(29, 43)*	*"Female physicians usually do not like to work in BHUs. The reason may be the lack of security…" (Shah et al., 2006)*
4.2. Legal	***1 study** -(42)*	*"In state you've got three levels of people below you, so if you're…a state consultant, yes, you've got different stresses, you've got to give a lecture and you've got to give that, but I'm saying that's a different type of stress. But on a clinical responsibility level, between you and the patients, there is an intern and registrar… So the family's complaining… and that comes all the way through those two people before it gets you. So that's like you're three degrees removed." (Ashmore, 2013)*
IV. Managerial context		
1.Staffing levels	***7 studies** -(29, 36, 38, 40-42, 44)*	
1.1. Doctors' and assistants' deficiency	***5 studies** -(29, 36, 38, 42, 44)*	*"…If you fell you can't go away because there aren't people to cover your work then it creates tension in your ability to care for people. So resources around you do matter…The deficit falls on you to work hard." (Ashmore, 2013)*
		"There is only one medical assistant per family physician. That's just not enough." (Wallace and Brinister, 2010)
		"We lack the doctors we need to provide adequate services. The shortage has pushed us to work longer. If more doctors could join us, that may ease our burdens." (Chen et al., 2017)
1.1.1. Retention	***1 study** -(42)*	*"I mean… in our department…to retain people is quite difficult, people work for a year or two then they go to private or they go off somewhere else. And for those posts to be filled again, it takes a lot of time… and in between people are frustrated." (Ashmore, 2013)*

1.1.2. Absenteeism	***2 studies*** *-(29, 44)*	*"…30% posts of physicians in the province are filled and most of them do no attend to their duties regularly." (Shah et al., 2006)*
1.1.3. Recruitment	***2 studies*** *-(38, 44)*	*"…They [managers] don't advertise posts that are available, they'll tell you in human resources that the posts are there but even if you qualify for the posts they tell that because it hasn't been advertised, you can't get into." (Kotzee and Couper, 2006)*
1.2. Administrative staff deficiency	***3 studies*** *-(40-42)*	*"…within every department there are the obvious managerial requirements that some people take up. So somebody might do the roster allocation, somebody might do the leave allocation, somebody might do the budgeting, all that kind of stuff within any department. And that is left mostly to the members of the department to do even though we have very little training or no training whatsoever in management." (Ashmore, 2013)*
		"There's lots of paperwork, but it is easier now with the electronic medical record." (Wallace and Brinister, 2010)
2.Protocols and guidelines consistency	***4 studies*** *-(29, 39, 42, 44)*	*"…if the performance reports are not analysed properly, then no actions are expected. The performance appraisals currently in practice must be updated. Job descriptions do not exist in health department; older version of the documents needs to be updated." (Shah et al., 2006)*
		"I think, medication prescription should be at the discretion of the physician…"(translation) (Feliciano et al., 2011)
3. Political interference	***2 studies*** *-(29, 44)*	*"…Every patient is equal to us and we cannot give preference to a relative of a member of any political party. They try to influence us in several ways or they often threaten us to get us transferred to a remote BHU [Basic Healthcare Unit]" (Shah et al., 2016)*
		"We get political interference under decentralization…They look at negative aspects of our work and comment badly, coming anytime even after midnight to our homes. This is a member of parliament…" (Luboga et al., 2011)

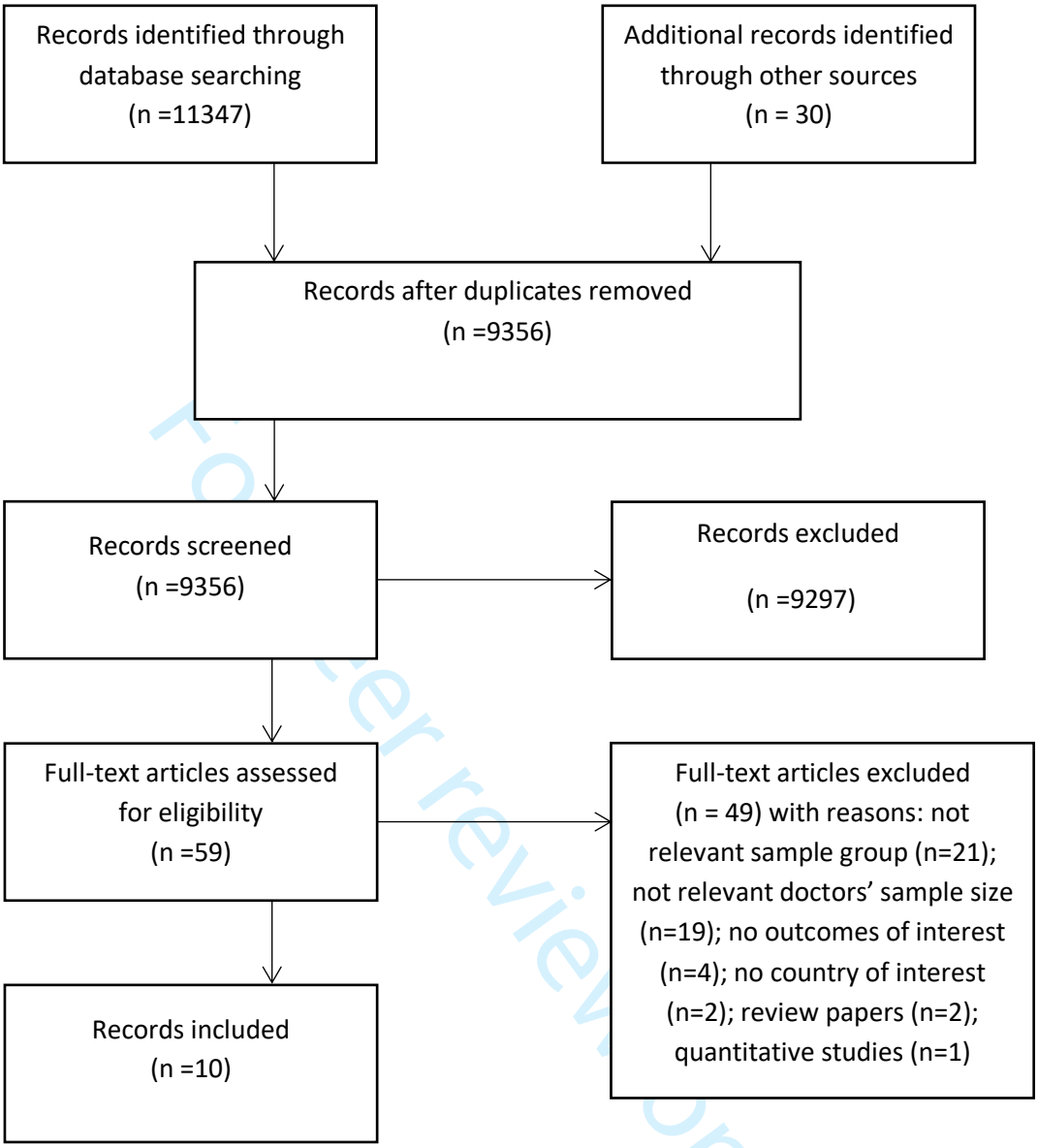


Figure 1. PRISMA flow diagram

morale OR well-being OR "well being" OR wellbeing OR "job satisfaction" OR burnout OR burn-out OR "burn out" OR "job motivation" OR resilience OR depression OR "depression symptoms" OR "moral distress" OR "psychological distress" OR "depressive symptoms"

AND

"health workers" OR "healthcare professionals" OR "medical doctors" OR physicians OR "medical specialists" OR clinicians OR "clinical professionals" OR "medical professionals" OR "healthcare specialists" OR audiologists OR allergists OR andrologists OR anaesthesiologists OR cardiologists OR dentists OR dermatologists OR endocrinologists OR epidemiologists OR "family doctors" OR gastroenterologists OR gynaecologists OR haematologists OR hepatologists OR immunologists OR "infectious disease specialists" OR "internal medicine specialists" OR internists OR neonatologist OR nephrologists OR neurologist OR neurosurgeons OR obstetricians OR oncologists OR ophthalmologists OR "orthopaedic surgeons" OR "ENT specialists" OR otolaryngologists OR perinatologists OR "paleo pathologists" OR parasitologists OR pathologists OR paediatricians OR physiologists OR physiatrists OR podiatrists OR psychiatrists OR pulmonologists OR radiologists OR rheumatologists OR surgeons OR urologists OR "emergency doctors"

AND

"low- and middle-income countries" OR LMICs OR "low and middle income countries" OR Afghanistan OR "Gambia The" OR Niger OR Benin OR Guinea OR Rwanda OR "Burkina Faso" OR Guniea-Bisau OR "Sierra Leone" OR Burundi OR Haiti OR Somalia OR Cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR Liberia OR Tanzania OR Chad OR Madagascar OR Togo OR Comoros OR Malawi OR Uganda OR "Congo, Dem. Rep." OR Mali OR Zimbabwe OR Eritrea OR Mozambique OR Ethiopia OR Nepal OR Armenia OR Indonesia OR Samoa OR Bangladesh OR Kenya OR "Sao Tome and Principe" OR Bhutan OR Kiribati OR Senegal OR Bolivia OR Kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR Cameroon OR "Lao PDR" OR Sudan OR "Congo, Rep." OR Lesotho OR Swaziland OR "Cote divoire" OR Mauritania OR "Syrian Arab Republic" OR Djibouti OR "Micronesia, Fed. Sts." OR Tajikistan OR "Egypt, Arab Rep." OR Moldova OR Timor-Leste OR "El Salvador" OR Morocco OR Ukraine OR Georgia OR Myanmar OR Uzbekistan OR Ghana OR Nicaragua OR Vanuatu OR Guatemala OR Nigeria OR Vietnam OR Guyana OR Pakistan OR "West Bank and Gaza" OR Honduras OR "Papua New Guinea" OR "Yemen, Rep." OR India OR Philippines OR Zambia OR Albania OR Fiji OR Namibia OR Algeria OR Gabon OR Palau OR "American Samoa" OR Grenada OR Panama OR Angola OR "Iran, Islamic Rep." OR Paraguay OR Azerbaijan OR Iraq OR Peru OR Belarus OR Jamaica OR Romania OR Belize OR Jordan OR Serbia OR "Bosnia and Herzegovina" OR Kazakhstan OR "South Africa" OR Botswana OR Lebanon OR "St. Lucia" OR Brazil OR Libya OR "St. Vincent and the Grenadines" OR Bulgaria OR "Macedonia, FYR" OR Suriname OR China OR Malaysia OR Thailand OR Colombia OR Maldives OR Tonga OR "Costa Rica" OR "Marshall Islands" OR Tunisia OR Cuba OR Mauritius OR Turkey OR Dominica OR Mexico OR Turkmenistan OR "Dominican Republic" OR Mongolia OR Tuvalu Ecuador OR Montenegro

N	Extraction information	General inormation	
	Data extraction date	Title	Authors
1	28/04/18	Women family physicians' personal experiences in the republic of Moldova	Wallace and Brinister
2	28/04/2018	Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakistan	Shah et al

3	28/04/2018	Motivational determinants among physicians in Lahore, Pakistan	Malik et al
4	5/2/2018	What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa?	Kotzee and Couper
5	5/3/2018	'Going private': A qualitative comparison of medical specialists' job satisfaction in the public and private sectors of South Africa	Ashmore

6	6/5/2018	Burnout among Family Healthcare physicians: The challenge of transformation in the workplace	Feliciano et al
7	9/5/2018	Determinants of village doctors' job satisfaction under China's health sector reform: a cross-sectional mixed methods study	Li et al
8	12/5/2018	The burnout among emergency physicians: Evidence from Russia (sociological study)	Liadova et al

9	28/05/18	Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals	Luboga et al
10	28/05/18	Job Satisfaction Analysis in Rural China: A Qualitative Study of Doctors in a Township Hospital	Chen et al

Year of publication	Country	Income group
2010	Moldova	lower middle income
2016	Pakistan	lower middle income

2010	Pakistan	lower middle income
2006	South Africa	upper middle income
2013	Pur	upper middle income

2011	Brazil	upper middle income
2017	China	upper middle income
2017	Russia	upper middle income

2010	Uganda	low income
2017	China	upper-middle income

Study characteristics		
Aim(s)/objective(s) of the study	**Study design**	**Outcome of interest**
to explore the personal experiences of female physicians in Chisinau, Moldova	qualitative (in-depth inteerviews)	job satisfaction
to identify factors affecting retention and motivation of doctors working in PHC (primary healthcare) facilities of Pakistan.	qualitative (interviews)	job motivation

to identify the determinants of job motivation among physicians, a neglected perspective, especially in developing countries.	mixed method	job motivation
to identify interventions that will lead to improved retention of South african qualified doctors in rural hospital service in the Limpopo province of South Africa	qualitative (interviews)	job motivation
to elaborate what South African medical specialists find satisfying about working in the public and private sectors, at present, and how to better incentivize retention in the public sector.	qualitative (interviews)	job satisfaction

to understand how conflicts with the institution and disagree- ments regarding team members' attributions are interpreted by Family Healthcare physicians from the burnout perspective.	qualitative (interviews)	burnout
to describe village doctors' job satisfaction under the context of health sector reform and investigate the associated factors	mixed methods	job satisfaction
to determine the prevalence burnout and its reasons among doctors occupied in emergency aid departments	mixed methods	burnout

to explore physician reasons for staying, how satisfied they are with their current positions, what could entice them to stay longer, and their future career intentions.	mixed-methods	job motivation, satisfaction
to understand the level of job satisfaction as felt by primary health care providers.	qualitative	job satisfaction

Inclusion criteria	**Exclusion criteria**	**Type of interview**
full time practicing female family physicians		in-depth, face to face, semi-structured
physicians employed by BHUs (basic healthcare units) and district and provinial government health managers		semi structured and in depth

physicians was selected from public primary, public secondary and public and private tertiary health facilities in the Lahore district, Pakistan ; all registered physicians from the Pakistani medical and dentistry council working in the study health facilities at the time of recruitment		open ended questionnaire
non-specialist South African qualified doctors working in Limpopo public hospitals during 2005 (mostly GPs)		semi-structured interviews
South African dual practice doctors working in urban, hospital settings: specialists and medical officers (GPs who work in hospitals)	GPs and rural doctors	semi-structured interviews

family healthcare (special program) physicians in Recife, Brazil with experience more than one year		semi-structured interviews
village doctors who worked in the 12 chosen counties for more than six month or health managers who were responsible for village doctors issues.		semi-structured interviews
physicians, who provide emergency care service for 24 hours a day and are occupied in emergency trauma aid department in one of the central public clinics in Moscow, Russia.		in depth interviews (stated in the paper), but seems like semi-structured

physicians who were working at 10 facilities in Uganda		focus groups
doctor employed in a township health center, willing to deliver consent to participate documentation during the FGDs, and was able to communicate in the Mandarin Chinese or the local dialect (		focus groups

Qustionnaire details	**Recruitment/sampling**
8 item: (1) Why did you choose to be a family doctor? (2) Can you please tell me what you do on a “typical” day? (3) How many patients do you see on a “typical” day? (4) In your opinion, what are the top 3 health problems facing Moldovans today? (5) Are your patients well informed (have a good un- derstanding) about health issues? (6) Where do most of your patients “get” their health informa- tion? (7) What do you like the most about being a family doctor? and (8) What do you like the least about being a family doctor?	directors were contcated via email/telephone/purposive

asked to list their 5 main motivators and demotivators in their own words	stratified random
Main question: What would make it attractive for you to continue working longer-term in rural hospital service in Lmpopo? (was given in advance) Follow-up questions about views on currebt career structure, significant demotivators, rural allowance, other incentives/disincentives, 3 main issues. (main question and 5 follow-up questions)	purposive or random? (both of these methods were stated, but in different parts)
what dual practice specialists found comparatively satisfying about working in both public and private sectors ('tell me about the history of your working life, starting from when you qualified as a doctor. I'm particularly interested in reasons for entering and leaving different jobs'; reasons for staying or leaving the public sector).	purposive (in 6 hospital departments)

1) discrepances between institutional values and individual desires; 2) disagreement with the team members' competence; 3)negative consequences of the work .	purposive (based on management evaluation)
	purposive (gender, age, geographic location, and levels of seniority)
What are the burnout causes? (personal and workplace conflicts, their cases, work satisfaction, opportunities for professional progress, ways to compensate occupational stress).	

working and living conditions	stratified random sampling
Theguide included questions and queries on the following six themes: attitudes towards working conditions; views about workload and financial rewards; willingness to provide health care; attitudes towards job achievement; attitudes towards doctor-patient relationships; and measures taken to improve doctors' job satisfaction.	

Participant characteristics	
Sample size, n	**Professional group (s)**
20	family physicians (11 Eleven of them did not originally complete residency training to become a family physician: pediatri- cians (n 10) and therapeutic physician (1))
22	16 physicians (medical doctors=GPs) + 6 managers

360	physicians
10	rural physicians (5-principal medical officers (GPs); 3-senior medical officers (registrars); 1- medical officer; 1 - chief medical officer)
74 interviews (included follow-up interviews)	23 - key informants (23 interviews) - (policymakers and managers); 28 - dual practice doctors (51 interviews)

24	physicians (12-pediatricians, 8 - GPs, psychiatrist, infectologists, obstetric gynecologist, anesthesiologist)
34 interviews	21 with village doctors and 13 with managers
50 interviews	emergency care physicians

11 focus groups	49 physicians
5 focus groups	39 doctors

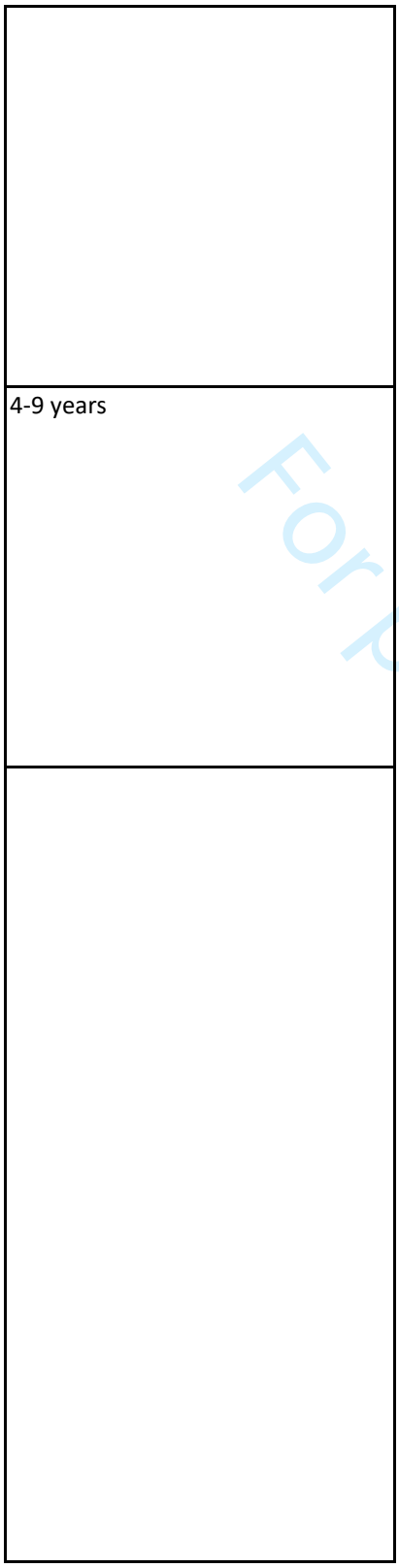
Response rate	**Gender**	**Age range/mean**
	famales 100%	42.4±7.2
	13.6% - females	38

	50% females	
	60% - males	25-36
	36% - females	29-63

	66.7% - females	
	23.5% females	
	40 % females	25-50

	females 10%	26-70/36
	59% females	/47; 39; 42; 38; 45

clinical experience/mean (years)
12.2±7.9
9.83



3 month - 10 years
less than 5 years - more than 20 years

almost 10 years in their professions, in their current positions an average 6.5
more than 10 years

Results
Key findings
4 key themes: 1) family medicine as a specialty offered much diversity and personal satisfaction: (+) diversity of cases; possibility to treat entire families and all ages; personal satisfaction from positive outcomes. (-) lower status in comparison with specialists; high professional demads and as a result lack of personal time. 2) appointment time restrains and paperwork - challenges to provide care: insufficient amount of time (15 min) per patient - needs of patients might be different; 1 assistant per family physician; 'false' home visits; travel difficulties during the home visits (street dogs etc.); unnecessary, but mandated paperwork; electronic medical records system made paperwork less time consuming. 3) problems faced by patients are complex and go beyond the leading causes: not only physical problems matter (difficult life situations, lack of money, patients unhappy by their lifes, many patients exhibited symptoms of depression) 4) patients have limited knowledge about health, but improved access to it: patients are not well informed, do not get thought, do not want to listen, difficulties in working with chronic patients - do not feel ill, have to convince patients to come, internet is covering that knowledge gap and younger generation is more responsible.
1)individual/personal factors: gender - harder to females due to cultural and securety reasons; marital status - difficult to relocate to BHUs (they are in rural areas) due to disruption for their personal lives, insufficient educational opportunities for their children; nature of the job - job in BHUs is flexible (no emergency calls), secure for the rest of their careers, good option for newly graduates; absenteeism - younger physicians are more motivated to stay in BHUs; residence - provided houses are uninhabitable; difficult to commute; 2) workplace level factors: participatnts were satisfied with physical environment; dissatisfied with colleagues - unsupportive, auxiliary workers were working without lisence; recognition by supervisors was encouraging; political interference - affected appointments and tranfers of staff; 3) organizational factors: remuneration - not satisfied with salaries, unequal salaries in comparison with secondary or tertiary care hospitals; professional growth and training - limited educational opportunities; promotions and transfers - debates about need for the influential person to get a promotion; supplies and medical facilities - shortage of medicines, irregular supply ; performance appraisal and job perseptions - limited knowledge of the staff about the performance appraisal, lack of proper supervision, onexistent job descriptions; human resourse management strategies - not suffient hr management documents and older ones needed to be revised.

The general motivators, good pay, respect, serving people, good working conditions and career growth were common for both public and private health tertiary health care physicians. The only difference observed was that public sector physicians reported personal safety as a motivator rather than opportunities for higher qualifi- cation, as reported by those in the private sector.
demotivators: 1) poor hospital infrastructure (road access, telephone connections, appropriate facilities and equipment) and working conditions (workload, understaffing, salaries); 2) poor hospital accomodation and social support (schooling for children, recreational facilities); 3) poor academic stimulation (lack of opportuninties for continuing education; 4) difficulties with promotions; 5) poor hospital management (not enough support and respect from managers; bureaucracy, interference by non-clinical managers to the work); 6) not enough opportunities to utilize annual leave (more annual, study, unpaid, sabbatical leaves are necessary) ; motivators: 1) specialists support (visiting consultants); 2) relationship among staff
1) rewards (financial incentives and benefits): private (+) higher financial rewards (salaries) are the reason to work in private sector, but income is not only thing that doctors care about, so they are working in dual practice; (-) high migration costs (purchasing own equipment), no quarantee of a regular supply of private patients for specialists (no referral networks); public (+) public state pension, paid holidays, paid sabbatical leave, income stability, free use of research and academic facilities and less potentially costly medicolegal risk (lower probability of being sued), (-);low salaries. 2) work context: private - 'sell availability' , 'be on the end of the phone', solely resoinsibility for patients and not having others under your service; public - fewer resourses, less equipment and drugs available, resourse constraints, ‘political in-fighting’ among departments, lack of administrative staff, lack of doctors , low opportunities for career progression; 3) social work environment: higher sense of collegiality in public hospitals, poor relationships between doctos and nurses (nurses are undertrained, supportive managers are good incentive, but doctors felt undervalued, most respondentrs felt quite happy with patient interactions, but had a legitimate issues (private patients were overly demanding,); 4) work itsef - highly intense, research and teaching opportunities are welcomed, because it added variety; doctors felt more needed in public hospitals; more opportunities for more interesting and complex pathology in public; more automony in private

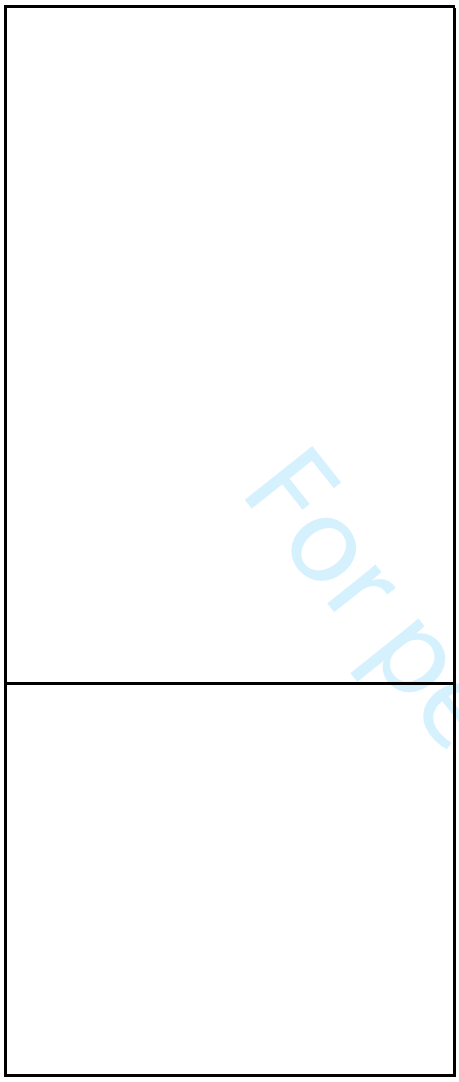
1) Discrepancy between institutional values and individual desires: high workload (feel suffocated), bur resourses are low; discrepancy in efforts made and results gained; excessive demands and low organizational support; problems are greater than availale resources, high expectations during the education and then dissatisfaction; low professional achivement, low opportunities to continiue education, lack of personal identity among organizational goals, values, tasks; 2) disagreement with team members' competences: uncertainty between the demands of the profession and knowledge/skills; luck of trust within the team; bureaucracy; lack of nurses competences, but they are powerful (act like doctors and prescibe drugs) - no place for the doctor - lower recognition; 3) negative consequences of work: insufficient institutional support, high stress triggered new illnesses and exacerbates existed ones
1) years of experience (age) - higher professional reputation with ages, higher trust from the patients - oldr participants had hogher job satisfaction; 2) income - is low - strong reason for job dissatisfaction; 3) pension plan - low pension rate for village doctors; 4) workload - transpotation problems; 4) integrated management (attempy to manage village doctors as regular doctors) - increased respect among population, more responsibilities
1) excessive workload and low wage level - 99% (low salary 99% and too many work hours - 56%); 2) 'difficult patients' - 53%; 3) total control and growing requirements - 51%; 4) night shifts - 46%; 5) increasing medical documentation - 41%; 6) organizational hierarchy - 33%; 7) family problems - 21%; 8) personal relationship - 11%. In addition to these questions the respondents were asked about their ways to compensate the occupational stress. The most part (60%) of our respondents reported reliance on psychotropic substances (drinking alcohol, smoking, and drugs), 30% of the mgo in for sports, 10% do nothing.

1) quality of management: respect and suupert from supervisors; assisting in problem solving, enough autonomy to staff, adequate supervision, sense of ownership and responsibility instillation. 2) availability of equipment, supplies and drugs: infrastructure issues, complaining about lack of clean water or electricity, not enough beds fro patients or space in the ward, and poor infection control. 3) staffing and workload: physicians shortage, single physician was playng multiple roles in the facility (surgeon, on-call doctor), unreasonable patient loads, lack of available specialists, positions that have gone unfilled for months or years. 4) political influence: lack of confirmation of their positions, interference by district-level politicians in the desicion making at health facilities, and intimidation of health workers by local politicians - politicians with no health knowledge should not be put in a desicion-making role for health issues in the district. 5) community and location: lack of opportunities for study leave, learning in more high-tech or well-resourced environments, and the lack of promotion or growth available. 6) compensation and job security: none of the physicians felt their compensation acceptable combined with job insecurity.
Thefindings revealed six main themes relating to doctors' job satisfaction in township health centers: attitudes towards working conditions; views related to workload and financial rewards; willingness to provide health care; attitudes towards job achievement; attitudes towards doctor-patient relationships; and measures taken to improve doctor's job satisfaction.

Conclusion
working as a family physician was personally rewarding, but system related challenges influenced negatively on job satisfaction and quality of care.
Priority themes: lack of basic facilities for physicians and their families; remoteness and lack of education facilities - individual factors; nature of work an respect - workplace factors; remuneration, job security, supplies and medical facilities, lack of promotions and politically influencedtransfers, training and learning opportunities - organizational factors

an incentive package should be introduced for rural doctors
advantages and disadvantages of public and private clinics were given. Interventions should be developed based on these findings.

1) the role of physician is not determined sufficiently, also, not clear roles between physician and nurse, lack of identity between physicians' values and organizational values; 2) expectations vs reality 3) high level of stress; 4) insufficient organizational support	article in Portuguese
village doctors in china transformed from barefoot doctors, but the education process of them is not clear, seems like only 3 years of medical training are required (Hu et al, 2017)	
physicians in the study were highly dissatisfied	



Author, year	1. Was there a clear statement of the aims of the research?
Wallace and Brinister, 2010	yes
Shah et al , 2016	yes
Malik et al , 2010	yes
Kotzee and Couper, 2006	yes
Ashmore, 2013	yes
Feliciano et al, 2011	yes
Li et al, 2017	yes
Liadove et al, 2017	yes
Luboga et al, 2010	yes
Chen et al., 2017	yes

2. Is a qualitative methodology appropriate?	3. Was the research design appropriate to address the aims of the research?
yes	yes (but authors did not discussed how they decided to use qualitative methods)
can't tell	yes (rationale for using qualitative methods were given)
can't tell	can't tell
can't tell	can't tell
yes	yes
yes	yes
yes	yes
yes	yes
can't tell	yes
yes	yes

4. Was the recruitment strategy appropriate to the aims of the research?	5. Was the data collected in a way that addressed the research issue?
can't tell (researcher has explained how participants were selected , but didn't provide reasons for selection and drop outs)	yes
yes (but drop outs were not discussed)	yes
yes	no
no	yes
yes	yes
can't tell	yes
can't tell	yes
can't tell	no
yes	yes
yes	yes

6. Has the relationship between researcher and participants been adequately considered?	7. Have ethical issues been taken into consideration?
yes	yes
can’t tell	yes
can’t tell	yes
can’t tell	yes
can’t tell	yes
can’t tell	yes
can’t tell	no
no	can’t tell
can’t tell	no
can't tell	yes

8. Was the data analysis sufficiently rigorous?	9. Is there a clear statement of findings?
yes	yes
yes	yes
no	yes
no	yes
no	yes
yes	yes
yes	yes
can't tell	no
can't tell	yes
yes	yes

10. How valuable is the research?
yes (but identification of new areas where research is necessary not clear stated)
yes
yes
yes
yes
yes
yes
yes
yes
can't tell

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Job morale of physicians in low- and middle-income countries: a systematic literature review of qualitative studies

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Job morale of physicians in low- and middle-income countries: a systematic literature review of qualitative studies

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Abstract

Objectives: To systematically review the available literature on physicians' and dentists' experiences influencing job motivation, job satisfaction, burnout, well-being and symptoms of depression as indicators of job morale in low- and middle-income countries.

Design: The review was reported following PRISMA guidelines for studies evaluating outcomes of interest using qualitative methods. The framework method was used to analyse and integrate review findings.

Data sources: A primary search of electronic databases was performed by using a combination of search terms related to the following areas of interest: 'morale', 'physicians and dentists' and 'low- and middle-income countries'. A secondary search of the grey literature was conducted in addition to checking the reference list of included studies and review papers.

Results: Ten papers representing ten different studies and involving 581 participants across seven low- and middle-income countries met the inclusion criteria for the review. However, none of the studies focused on dentists' experiences was included. An analytical framework including four main categories was developed: work environment (physical and social); rewards (financial, non-financial and social respect); work content (workload, nature of work, job security/stability and safety); managerial context (staffing levels, protocols and guidelines consistency and political interference). The job morale of physicians working in low- and middle-income countries was mainly influenced by negative experiences. Increasing salaries, offering opportunities for career and professional development, improving the physical and social working environment, implementing clear professional guidelines and protocols and tackling healthcare staff shortage may influence physicians' job morale positively.

Conclusions: There were a limited number of studies and a great degree of heterogeneity of evidence. Further research is recommended to assist in scrutinizing context-specific issues and ways of addressing them to maximize their utility.

Keywords: Job morale, physicians, low- and middle-income countries

Strengths and limitations of this study:

1. Is novel in synthesising qualitative data from all available research on LMICs and provides conclusions based on findings from diverse countries, cultural backgrounds and clinical specialties.
2. Can inform the design of potential interventions and workforce policies and interventions in LMICs, therefore, their clinical utility can be advanced.
3. Limited availability and heterogeneity of studies allowed drawing only tentative conclusions.
4. Might be limited conceptually since a small number of studies were eligible.

BACKGROUND

The crisis in human resources for health has been defined as one of the most severe global health problems[1] and a major barrier to achieving universal health coverage and building a sustainable health system.[2] This crisis is especially acute for low- and middle-income countries (LMICs), many of which suffer from both a shortage and poor devotion of healthcare staff.[3]

Due to the far-reaching effect of job morale, interest in the issue among healthcare staff has increased considerably in recent decades.[4] Firstly, positive job morale is linked to a greater number of healthcare workers being recruited and retained[5], which appears to be essential in solving the pressing issue of healthcare staff maldistribution in LMICs.[2] Secondly, healthcare staff with positive job morale are more likely to provide higher quality care to patients.[6,7] Furthermore, improving staff well-being could save healthcare spending by decreasing financial investments in medical education[8] and lower spending on sickness absence and staff turnover.[9]

Despite its importance, there is no universally adopted definition for the concept of job morale nor an agreement on what it constitutes. This could partially explain why research studies aiming to measure job morale are somewhat sporadic.[10,11] Although several authors have tried to investigate job morale as a single entity[5,12-16], they ended up measuring its outcomes or explanatory variables.[4] Particularly, they referred to the significance of job motivation, job satisfaction, well-being, burnout and depressive symptoms. All these variables can be regarded as indicators of job morale.

Most studies on job morale in healthcare have focused on either nurses[10,11,17-21] or healthcare staff in general[5,13,22-25], although job morale has been shown to vary by professional group[22] and training status.[26-28] A limitation of the current academic literature is that relatively little is known about physicians' and dentists' experience of job morale in LMICs.[29-31] There is a lack of detailed description of contextual features and latent influences, which could be provided by qualitative research.[32] Identifying and dentists' experiences that influence job morale may help to create an analytical framework for analysing workforce policies and interventions with clinical and economic benefits.

Against this background, this review aimed to answer for the following research question: Which experiences influence job motivation, job satisfaction, burnout, well-being and symptoms of depression as indicators of job morale among physicians and dentists in LMICs?

METHODS

Search strategy

A systematic search of electronic databases and grey literature was performed according to the review protocol which has been developed and registered on PROSPERO (CRD42017082579). The following six electronic databases were searched: Scopus, Pubmed, PsycINFO, Embase, Web of Science, and The Cochrane Library up to May 2018. Search terms combined three overlapping areas with key words such as 'morale' OR 'job motivation' OR 'job satisfaction' OR 'well-being' OR 'burnout' OR 'depression symptoms' AND 'physicians' OR 'dentists' AND 'LMICs' (see supplementary file 1). Publication bias was reduced by searching conference papers and unpublished literature; hand

searches of key journals and reference lists were performed. This review followed the PRISMA guidelines.[33]

Selection criteria

Studies were eligible if they assessed any one of the job morale constructs such as job motivation, job satisfaction, well-being, burnout and depression symptoms by using qualitative methods; if at least 50% of the sample were qualified physicians and/or dentists employed in public healthcare settings or if data about qualified physicians and/or dentists employed in public healthcare settings were provided separately; if at least 50% of the sample were from the LMICs as defined by World Bank criteria[34] or data from the country of interest was provided separately. Papers were excluded if more than 50% of the sample were not yet fully qualified physicians and (or) dentists who were undertaking training at the time of the study (medical students, residents, trainees, registrars, or junior physicians), and if they were not written using Latin alphabet, Russian or Kazakh. There was no restriction on the date the studies were conducted. All included articles were inspected independently by a second researcher (SZS) to verify inclusion.

Considering the definitional imprecision of job morale and the different dimensions used to characterize it, we employed an inclusive approach adopting of five indicators of interest, including job motivation, job satisfaction, well-being, burnout and depression symptoms.

Review strategy

Titles and abstracts of identified articles were exported into EndNote X8 and were screened by the first reviewer (AS) in order to exclude irrelevant studies and duplicates. Full-text articles were inspected again for the relevance according to the inclusion criteria. A random sample of 20% of the articles was independently screened by the second reviewer (SZS) at each stage. Discrepancies were resolved by involving a third reviewer (SP). Mismatches at the full-text screening stage were added up and inter-rater reliability calculated. The level of agreement between AS and SZS was 80%, between AS and SP was 75%.

Data extraction and quality assessment

Data from each paper, including study details, participant demographics and key results were extracted (see online supplementary file 2). In the case of mixed methods studies, only qualitative findings were extracted. The second reviewer (SZS) ensured the accuracy at this stage by extracting data from 20% of the included papers. One article written in Portuguese was extracted by involving a native speaker. Methodological quality was assessed using the Critical Appraisal Skills Programme (CASP) for qualitative studies.[35]

Data synthesis and risk of bias assessment

As part of the framework method[36], data from the results sections of included articles were coded in the reviewing software (EPPI-reviewer) and preliminary concepts describing physicians' experiences were defined inductively. Similar concepts were grouped into categories and sub-

categories independently by two reviewers (AS, SZS) and were discussed with other researchers (SP, FM, SN) to ensure the range and depth of the coding. The defined categories were then organized in the analytical framework. The framework matrix was used to provide a list of illustrative quotations. Additionally, vote counting[37] was used as a descriptive tool to indicate patterns across the included studies. We calculated the frequency of defined categories to present how prevalent each category was within the included studies.

Based on Critical Appraisal Skills Programme (CASP) studies were appraised in accordance with ten criteria, where the majority of studies were rated as appropriate with regard to aims, methodology and research findings (see supplementary file 3).

Patient and public involvement

The results of the analysis were solely based on the previously published literature, as this study did not involve patients or public.

RESULTS

The original search yielded 11,347 articles through database searching and 30 through other sources. 2021 articles were removed as duplicates and 9297 articles were excluded for not meeting the inclusion criteria. The full texts of the remaining 59 papers were examined, ten of which were included and represented ten unique studies. None of the studies focused on dentists' experiences met the inclusion criteria. The detailed selection process is presented in the PRISMA flow diagram (Figure 1).

Overview of included studies

Included studies were published between 2010 and 2017, in English, with the exception of one. They were conducted across seven LMICs, including four upper-middle income countries (South Africa, China, Brazil and Russia), two lower-income countries (Pakistan and Moldova) and one low income country (Uganda). With regards to the study design, four were mixed methods, and six were qualitative. The majority of studies were conducted in primary[31, 38-42] and secondary healthcare settings.[43,44] The included studies characteristics are summarised in Table 1.

Physicians' experiences influencing job morale

Identified concepts relevant to physicians' experiences of job morale were grouped into four main framework categories: work environment (I), rewards (II), work content (III) and managerial context (IV). The respective sub-categories within each of these categories are presented in the following section. Illustrative quotations within each category are provided in Table 2.

I. Work environment

Categories such as physical[31,38,40-46] and social[31,38,40-46] work environment appeared in all included studies.

1. *Physical*

Participants expressed that job morale was influenced considerably by working conditions, as a crucial source of job motivation[45] and satisfaction.[38,40] Few of them were "satisfied with physical environment"[31], but the majority of physicians felt "very disgusted"[46] and "very ashamed"[44] of the hospital infrastructure and constraints of resources, including lack of medicines and equipment deficiency.[31,38,40,44,46] Additionally, physicians noted that poor physical environment in the hospitals "annoyed patients"[31] and showed awareness that poor hygienic conditions were making patients "more sick".[46] The category addressing 'physical work environment' included residential living conditions for physicians who were based in more rural health settings.[31,40] They described their residences as "inhabitable" houses with poor "water and electricity connections"[31], that are "falling apart".[40] The limited options for schooling for their children[31,46] and underdeveloped road access[31] were frustrating and demotivating.

2. Social

Physicians described a sense of "collegiality" and "regular interactions" among staff in the healthcare facilities as a motivator[44] and perceived "poor interpersonal relations" as generally as demotivating.[45] Four main sub-categories contributed to defining the 'social environment' category: relationships with nurses and axillary staff[31,40, 41,44,45], relationships with other physicians[40,44]; relationships with patients[31,38,42-44] and relationships with managers/ supervisors.[31,40,43,44,46]

Participants questioned the professional "competency"[44] and "power"[41] of nurses and noticed that auxiliary staff were "unsupportive and apprehensive" and worked "often without a license to practice".[31]

Relationships with other fellow physicians were found to be "very stimulating"[44] not only within a hospital, but this view also emerged in case of "visiting consultants" in rural settings.[40]

There was inconsistency in experiences relating to physician-patient relationships. Some participants "seemed fairly happy"[44] and "expressed satisfaction with their current relationships".[38] However, others expressed the view that physicians "often had to see angry patients"[31], who "could not understand the physicians' work"[38] and tend to "bring all their problems [beyond health-related]".[42] It was emphasized that "difficult" patients are a significant cause of physicians' burnout.

Physicians indicated that relationships with managers/supervisors mainly depended on the provision of "adequate supervision"[46] with enough respect[40,44], support[44,46], recognition[31,44] and autonomy.[43,46] "Poor supervision"[45] demotivated physicians and "total control" by managers/supervisors contributed to their burnout.[43]

II. Rewards

Almost all papers discussed the importance of financial[31,38-40,43-46] and non-financial[31,38-40,44-46] rewards in medical practice.

1. Financial

The majority of physicians felt that their financial compensation was "not acceptable"[46], "low"[43] and "failed to reflect the job's value"[38], especially in rural areas[39,40] and considered their low salaries as a significant "demotivator".[45] However, some participants noted that medical practice has advantageous financial incentives, such as state pension, paid holidays and sabbatical leaves.[44]

2. Non-financial

Despite the importance of financial incentives, physicians highlighted that "money is not the most important factor for any clinician".[40] Career development appeared to be significant in determining physicians' job morale[31,40,44-46]. However, they showed the general sense of dissatisfaction "with overall process of promotions and transfers in the public health sector".[31] Conceptually, career development closely connected with the availability of learning, teaching and research opportunities[31,40,41,44,45] which were "necessary for the professional growth of physicians".[31] Moreover, social respect was also considered a non-financial incentive[31,38,39,42] which varied in terms of the professional reputation, gained by years of practice[39] and admiration of public servants, as a part of the community culture[31] and across different physicians' specialties.[42]

III. Work content

The overarching category of 'work content' sub-categories, such as workload, nature of work[31,39,42,44], job security[31,44,45], and physical and legal safety, was observed in almost all included papers as experiences influencing job morale.

1. Workload

The workload was mentioned broadly across all included studies[31,39,41-46]. Specifically, physicians complained about "too many working hours"[43] and the necessity to be "on the end of the phone".[44] Emergency duties and long working hours were especially discouraging for married female physicians and single mothers[44] because they worried that "their other responsibilities remain unattended".[31] Additional frustration was related to a large number of patients in-charge[39] and "fixed times for appointments".[42]

2. Nature of work

Despite the excessive workload, physicians have emphasized that the "serving" nature of medical profession[31,38,39,42,44] and the diversity[42,44] of work was extremely satisfying[38] and motivating.[45] Participants felt "a sense of achievement"[38] when they "get results and see patients feeling better".[42] They also expressed a "passion to serve their own communities".[31]

3. Job security/stability

Furthermore, some physicians reported that regardless of "whether you do it well or whether you don't do it so well"[44] working in public healthcare facilities "ensured job security for the rest of their careers"[31] and provided them with the "ability to support" their families.[45]

4. Physical and legal safety

The motivation experienced as a result of job security and stability was contrasted with the demotivation felt due to low levels of "personal safety"[45], especially for rural female physicians[31] and growing responsibility for patients, "in [a] legal sense".[44] However, it has been noted that medico-legal risk for physicians could be mitigated by interns, residents and registrars, who "shield" physicians from assuming complete medico-legal responsibility for all patients.[44]

IV. Managerial context

Experiences within the managerial aspect of medical practice were broadly discussed in terms of the staffing levels[31,38,40,42-44,46], protocols and guidelines consistency[31,41,44 46], and political interference[31,46].

1. Staffing levels

Low staffing levels of physicians, medical assistants and managers appeared to be a substantial cause of dissatisfaction[38,44] and contributed towards absenteeism[31,46] and retention problems.[44] Excessive workload caused by the deficit of physicians[46] and medical assistants[42] resulted in physicians being frequently "absent" from their duties[31] and "encourage[d] others to leave"[44] as well. Moreover, it seemed quite difficult to attract people to work in healthcare facilities, "despite the district posting the growing vacancies for multiple years, no applications had been received".[46] At the same time, physicians raised a concern that vacant posts may not be advertised properly.[40] The additional burden of paperwork[42,43] fell on physicians as a result of administrative staff deficiency[44], which could be alleviated by implementing electronic medical systems.[42]

2. Protocols and guidelines consistency

Physicians stated that job description, protocols and guidelines regulating the drug prescriptions[41] and performance appraisal[31] processes "needed to be revised to include the solutions to the current work place problems".[31] Nonetheless, the "growing requirements"[43] as a consequence of the increasing number of "regulations and rules"[44] were highlighted as a source of frustration [44] and burnout.[43]

3. Political interference

Certain physicians felt that managerial work context was possibly disrupted by "politically powerful persons"[31] interfering "in the decision making [process] at health facilities"[46] and their attempts to get a prioritized treatment for relatives.[31] Some participants believed that it was difficult to be promoted or transferred to a desired position "without links with any influential person"[31] and mentioned cases of "intimidation of health workers by local politicians".[46]

DISCUSSION

Main findings

The aim of our systematic review was to synthesize qualitative studies exploring physicians' experiences influencing job motivation, job satisfaction, burnout, well-being and symptoms of depression as indicators of job morale in LMICs.

The analytical framework that comprised four main categories of the work environment (I), rewards (II), work content (III) and managerial context (IV), was developed based on concepts that emerged from included studies. According to the vote counting results, workloads, working conditions and financial rewards were most frequently mentioned as influencing job morale and have been described in almost all studies. The majority of studies mentioned important experiences regarding staffing levels, career and professional development, relationships with nurses/auxiliary staff and managers/supervisors. Physicians from almost half of the included studies focused their attention on the nature of work, relationships with patients, protocols and guidelines consistency.

Physicians were quite consistent in defining whether their experiences were positive or negative. Experiences of excessive workload, low salaries, poor working and living conditions, fewer opportunities for career and professional development, staff shortage, tense physician-nurse and physician-manager/supervisor relationships, inconsistent professional guidelines and political interference were described as negative. Although physicians reported more negative experiences,

positive experiences were also underlined in terms of the serving nature of work, being given social respect, job stability and collegial relationships with other physicians.

Strengths and limitations

To our knowledge, this is the first systematic review of qualitative studies exploring physicians' experiences influencing job morale in LMICs. A further strength is that the review searched through papers from all LMICs and was not limited by physicians' specialty or to English language publications. This allowed for the inclusion of data from diverse countries, cultural backgrounds and clinical specialties. However, this approach presented some limitations. Firstly, although it was possible to extract general concepts in physicians' experiences, there is not enough evidence to assess whether these apply to all medical specialties and to other countries. There may be regional and clinical nuances that have not been identified in this review. Secondly, the prevalence of negative experiences over positive ones could be caused by a biased focus of studies on exploring difficulties. Thirdly, heterogeneity of studies due to imprecise definitions of the concept of 'job morale', made it challenging to provide firm conclusions. Although dentists were included in the literature search, none of the studies on dentists met the inclusion criteria; therefore, the results cannot be generalized to them.

Despite these limitations, the current review is a valuable collation of studies and specifies which experiences influence the job morale of physicians.

Comparison with literature from high-income countries

The present review supports qualitative findings from previous studies that have been conducted in high-income countries (HICs). It is particularly consistent with findings that serving and helping patients[13,47,48], working on diverse medical cases[13,22,48,49] and healthy relationships with other medical staff[13,14,48,50,51] constitute positive experiences and enhances workers' job morale. It supports evidence that excessive workload[16,22,49,50,52], insufficient staffing levels[13,16,51], administrative burden[16,22,50] and poor relationships and understanding between medical staff and managers[13,16,50] influence job morale negatively. In general, the tendency that professionals are more satisfied with the job content than with its structure and management can be observed not only among physicians. It applies also to employees of different occupations.

Contrary to our findings, healthcare staff employed in high-income countries indicated positive experiences regarding the consistency of existing protocols and guidelines[13,48], relationships with patients[47,50,51] and opportunities for continuing education.[53] The review also demonstrated some evidence regarding poor physical environment within healthcare facilities and constraints of resources, as has been recorded previously.[13,16,50] However, these findings should be interpreted with caution due to their context-dependency.[54] The context often includes increasing poverty[55], inequality[56] and collapsing healthcare systems.[57,58] The structural adjustment programmes promoted by international financial institutions and widely implemented across LMICs may influence the context.[59-62] In particular, the freezing of vacant posts and mandated ceilings on wages can be substantial barriers to recruiting and retaining healthcare staff. [56,63,64]

Quantitative findings from research on healthcare staff working in HICs helped to corroborate the results of this review. Single studies and reviews conducted in HICs also report associations between job morale and factors such as financial rewards[65-69], workload[4,65-67,69], recognition[13,23], support[16,23], autonomy[23,66,68], staffing levels[70], learning/teaching/research opportunities[65,70], workload[4,65-67,69], diversity of work[65,69], relationships with colleagues[23,65,66,68,70], job security and protocols and guidelines consistency.[16,68] This is consistent with what this review found in LMICs. Despite this consistency, it is not clear as to whether evidence from HICs can be simply transferred to LMICs and the other way around.

Implications for research and practice

By considering physicians' experiences across seven LMICs, the current review findings suggest that in order to advance current clinical practices by enhancing job morale, interventions and workforce policies should aim at increasing salaries, improving working and living conditions, tackling healthcare staff shortage and excessive workload and providing more opportunities for career and professional development. However, it is very difficult to achieve in resource-scarce settings. Finding the right balance between growing demands and limited resources is a key challenge. A critical approach to healthcare policy with a specific reference to ethics and a range of disciplines in social science are likely to be required to achieve and maintain that balance.[71,72] Also, findings suggest that professional guidelines, such as job descriptions, performance appraisal and protocols regulating drug prescriptions should be revised and effectively implemented. This may have a potential positive influence on physician-nurse relationships by maximizing role clarity.

There are at least four implications for future research. Firstly, in order to generate clear directives for improvements, future research studies should investigate whether job morale is perceived and valued differently by different medical specialties, and the research gap around dentists' experiences should be addressed. Secondly, the structural and social determinants of job morale of physicians in LMICs should be studied more systematically which requires funding for such research. Thirdly, contextual features should be considered as they might limit the applicability of findings from one healthcare setting and region to another. Fourthly, existing interventions and strategies should be assessed rigorously to define implementation requirements, cost-effectiveness and long-term changes.

CONCLUSIONS

The current review has identified that perceived threats to positive job morale of physicians in LMICs outweigh perceived incentives. It has highlighted several areas in which strategies aiming to improve physicians' job morale in in LMICs may be targeted. However, generalized conclusions are tentative because of the heterogeneity, limited number and inconsistent quality of the existing studies. Future research into physicians' experiences influencing job morale in LMICs should robustly examine context-specific issues and appropriate ways of addressing them, to ensure that the results can be translated into practical programmes for improving healthcare practice.

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Figure Legend Figure 1: PRISMA Flow Diagram

Table 1. Characteristics of included studies

N	Authors, year	Country (income group)	Setting	Study design	Data collection	Sampling	Sample size	Gender	Age/average
1	Ashmore, 2013[44]	South Africa (upper-middle income)	Urban	Qualitative	Semi-structured interviews (primary and follow-ups)	Purposive	51 (28 dual practice doctors and 23 policymakers/managers)	64% - males 36% - females	29-63/not stated
2	Chen et al., 2017[38]	China (upper-middle income)	Rural	Qualitative	Focus groups	Not stated	39 doctors	59% - males 41% - females	Not stated/38-47 (in 5 different settings)
3	Feliciano et al., 2011[41]	Brazil (upper-middle income)	Urban	Qualitative	Semi-structured interviews	Purposive	24 doctors (12-pediatricians, 8 - GPs, psychiatrist, infectologists, obstetric gynecologist, anesthesiologist)	66.7% - males 33.3% - females	Not stated
4	Kotzee and Couper, 2006[40]	South Africa (upper- middle income)	Rural	Qualitative	Semi-structured interviews	Unclear – random or purposive (both stated)	10 non-specialist qualified doctors	60% - males 40% - females	25-36/not stated
5	Li et al., 2017[39]	China (upper-middle income)	Rural	Mixed methods	Semi-structured	Purposive	34 (21 village doctors and 13 managers)	76.5% - males	Not stated

					interviews			23.5% - females	
6	Liadova et al., 2017[43]	Russia (upper-middle income)	Urban	Mixed methods	In-depth interviews	Not stated	50 emergency doctors	60% - males 40% - females	25-50/not stated
7	Luboga et al., 2010[46]	Uganda (low income)	Not stated	Mixed methods	Focus groups	Stratified random	49 doctors	90% - males 10% - females	26-70/36
8	Malik et al., 2010[45]	Pakistan (lower-middle income)	Urban	Mixed methods	Open ended questionnaire	Stratified random	360 doctors	50% – males 50% - females	Not stated
9	Shah et al., 2016[31]	Pakistan (lower-middle income)	Rural	Qualitative	Semi-structured and in-depth interviews	Not stated	22 (16 doctors and 6 managers/administrators)	86.4% - males 13.6% - females	Not stated/38
10	Wallace and Brinister, 2010[42]	Moldova (lower-middle income)	Urban	Qualitative	In-depth interviews	Purposive	20 family physicians	100% - females	Not stated/ 42.4±7.2

Table 2. Illustrative quotations

Categories and sub-categories	Relevant studies (Vote-counting)	Supporting Quotations
I. Work environment		
1. Physical	**9 studies**[31,38,40-46]	
1.1. Working conditions	**8 studies**[31,38,40-42,44-46]	
1.1.2. Hospital infrastructure	**7 studies**[31,38,40,42,44-46]	*"Yes, it's [the hospital] not really good for really working…" (Kotzee and Couper, 2006)*
		"I think we make our patients more sick in the hospital - somebody can come with one disease and go away with five diseases. The infection control is very poor mainly because the facility is so bad. Sometimes you have no soap to wash the hands. These are the hopeless situations when you are working in such a place that you feel very disgusted when you look at the bed, you look at the mattress on bed and you look at the bed sheets the patient is sleeping in."(Luboga et al., 2011)
		"Okay, you just go and look at the lavatories, especially in the public areas . . . That's the consumer, but you know there are ways you can deal with that, and one of the ways to deal is that you have some sort of attendant, and constant cleaning of the lavatories. I mean a lot of patients come to me and . . . refuse to go to the lavatory because they say it's so filthy . . . And that makes one feel very ashamed . . . Telephones get stolen . . . bed linen gets stolen, and you're working in that environment . . . where there isn't a blanket to put on the patient, there isn't a pillow for her head and it' s because things have been nicked. So and all of that you know is difficult." (Ashmore, 2013)
		"When you are engaged in work, it is difficult to survive in summer without air conditioning, because it is extremely hot in the summer in Guangxi, with peak temperatures even up to 40◦C sometimes." (Chen et al.)
1.1.3. Availability of resources	**7 studies**[31,38,41,42,44-46]	*"Okay firstly… our casualty… there is virtually nothing you know related to emergency…if you want to attend to an emergency patient there isn't much you can use except maybe things like … IV lines… may be a drip stand; since I came here we didn't have simple things like glucometers. So every time a patient comes and you want to do the glucose level you have wait for the lab to do it. Recently they have introduced some glucometers but they wok only for a few months… maybe there is one BP machine, which is used by two or three different wards. They have to wait until the other ward is done so they can go and borrow so it is – yeah – it is a problem" (Kotzee and Couper, 2006)*
		"Then another thing is equipment. We are doing operations but we do not have some equipment like theatre lights. After complaining we were given a tube for operation, but even in the whole ward we do not have enough lights. And can you imagine the whole of this hospital with only two oxygen concentrators? At least every ward should be having one or two. We have only one for the paediatric ward after complaining so long. So if you are using it on the child, and someone else needs it you either remove the child to die or

		you wait for the other to die." (Luboga et al., 2011)
		"…you are in the teaching facility. I mean you would love to have all the modern things like the books the overseas people are talking about and you would love to impart that knowledge onto your students. But we don't have the equipment, I mean we have but you will find that they are outdated…" (Ashmore, 2013)
1.2. Living conditions	**3 studies**[31,40,46]	*"… the other most important thing is good accommodation; but anybody is going to struggle with accommodation they are not going to enjoy working there… you don't want to wake up in the morning and know that you are going to share your bathroom with four other people and staff like that…" (Kotzee and Couper, 2006)*
		"…I joined BHU because I hoped to get a house to live; but the BHU residence is not worth living…" (Shah et al., 2006)
		"Who will w willing to work in a BHU which doesn't even have road access? I have to walk two kilometres daily to reach the main road leading to the BHU where I work." (Shah et al., 2006)
2. Social	**9 studies**[31,38,40-46]	
2.1. Relationships with nurses and auxiliary staff	**5 studies**[31,40,41,44,45]	*"There is a difficulty I terms of the nursing staff and I don't think when I was a registrar it was better. I think the staff were trained differently, they were trained in general nursing and then midwifery so the midwives instead of doing 3 months or whatever it is in midwifery and a general training so they're less competent… the doctors picking up a lot of duties which the nurses should do automatically and they don't…Which makes it far less satisfying for the doctor, and far more stressful because… you can't trust the instructions are definitely going to be carried out." (Ashmore, 2013)*
		"…it was shock to me, because in training people did not exist the nurse with as much power as she has today in the family health unit, it was a very big shock when I arrived... I see nurse being a doctor, I was horrified, so I asked myself: what I am doing here, what is left for me?" (Feliciano et al., 2011)
2.2. Relationships with other physicians	**2 studies**[40,44]	*"… it is very stimulating to work in a collegial and academic environment where you're going to, you know, X-ray meetings and you're on wards rounds, with consultants that are giving their different inputs…" (Ashmore, 2013)*
		"…what has helped keep me stimulated is even though we are in rural area there are so many visiting consultants coming from Wits and Garankuwa and Polokwane… Just knowing that there's people coming every month or so that are interested in what you're doing: that can support you and you can always ask them; it definitely improves the quality of your work and the job satisfaction and you feel less out of touch and that you're doing the right thing, sometimes you need a bit of reassurance that you are doing the right things

		under the circumstances." (Kotzee and Couper, 2006)
2.3. Relationships with patients	**5 studies**[31,38,42-44]	*"…some of my patients do not want to be informed or listen to me." (Wallace and Brinister, 2010)*
		"Most patients with hypertension do not understand it. It is hard to convince them to come back to the clinic." Wallace and Brinister, 2010
		"Sometimes they cursed and shouted at us. Even worse, some patients doubted the value of our medical services," (Chen et al., 2017)
2.4. Relationships with managers/supervisors	**5 studies**[31,40,43,44,46]	
2.4.1 Respect	**2 studies**[40,44]	*"I don't think… [the administration]" quite realise the human resources they have available to them. I think sometimes they don't actually realise they're working with professionals, and they don't treat us as such…" (Ashmore, 2013)*
2.4.2. Support	**2 studies**[44,46]	*"You feel that you're being hamstrung at every turn by the state you're trying to do. They don't make an effort to find out what's required by people who are actually doing the job…" (Ashmore. 2013)*
2.4.3. Recognition	**2 studies**[31,44]	*"…In many other organizations, people with our skills and experience would be very highly valued and perceived as such. But you know here we don't get perceived or treated like that at all… " (Ashmore. 2013)*
2.4.4. Autonomy	**2 studies**[43,46]	*"…management gave appropriate autonomy to staff, while still providing adequate supervision." (Luboga et al., 2011)*
II. Rewards		
1. Financial	**8 studies**[31,38-40,43-46]	*"I am really willing to be a village doctor; it's a good job, you know. However, the income is too low to subsist on. I must earn what I need for living. " (Li et al., 2017)*
		"Now there are more and more people breeding silkworms. They even earn more than us (village doctors). " (Li et al., 2017)
		"Our main purpose (to work in BHUs) is salary; which does not match with our qualifications…" (Shah et al., 2006)
		"I earned below 2000 RMB (USD 303) per month, and sometimes I work more than 14 hours in one day." (Chen et al., 2017)
2. Non-financial		
2.1. Career development	**5 studies**[31,40,44-46]	*". . . when you go into a job you need something that's got a career path, and there aren't career paths [in public]. There's a few, a small little cadre at the top, a small group of people who get to principal or chief or specialist, and the rest of the people can spend their entire career as a senior specialist no matter how brilliant they are and much of a contribution they make." (Ashmore, 2013)*
2.2. Professional development		
2.2.1.Learning opportunities	**5 studies**[31,40,41,44,45]	*"…one of the things that is really distressing me for a few years, because [Family*

		Healthcare Strategy] stopped doing the education work…" (translation) (Feliciano et al., 2011)
		"Job satisfaction includes professional development, and there is no provision to allow us to further our qualification." (Luboga et al., 2010)
2.2.2.Teaching/research opportunities	**1 study**[44]	*"… it is good and interesting to have students around you. So the teaching component of it I've always found just varies your day. It adds a little bit of an extra dynamic to what your routines are, so it can be quite fan and it's… a little bit challenging, and it just…adds spice to all your humdrum things." (Ashmore, 2013)*
3. Social respect	**4 studies**[31,38,39,42]	*"Although there have been many changes along with rapid development, patients still looks for me when they get sick because of my reputation. All their family members know me and come to me for help." (Li et al., 2017)*
		"People hardly knew me when I just came back home for the job in 1998. At that time, patients didn't know of my abilities. Everything was difficult. It got better several years later, as I worked longer." (Li et al., 2017)
		"Wherever we go, people respect us, just like we have some guarantee. We're certainly satisfied by this." (Li et al., 2017)
		"People don't consider a family physician important in their lives. They don't appreciate their family physician, but they do specialists."(Wallace and Brinister, 2008)
		"Most of the patients here are local farmers. They are honest and full of integrity. They followed our advice and showed their appreciation to us." (Chen et al., 2017)
III. Work content		
1. Workload	**8 studies**[31,39,41-46]	*"Too much workload now. I am in charge of only one village, with about 1500 residents. However, thy live dispersedly. One is here, while another is quite far away. I run around all day long, but still can only offer public health services for several households." (Li et al., 2017)*
		"There is no time for my family and children." (Wallace and Brinister, 2008)
		"…the number of patients and the little time for consultation, so I have no conditions…" (translation) (Feliciano et al., 2011)
2. Nature of work	**5 studies**[31,38,39,42,44]	
2.1. Serving people	**4 studies**[31,38,39,42,44]	*"…you feel like you're making a tangible difference to people's lives" (Ashmore, 2013)*
		"I like the work because you get to know entire families. My patients are like my extended family. When I get results, it makes me very happy." (Wallace an Brinister, 2010)
		"When my patients are cured after treatment, I feel so fulfilled and delighted. One patient still maintains contact with me. Our friendship began when he came to me with appendicitis. He has been well for five years now." (Chen et al., 2017)
2.2. Diversity	**2 studies**[42,44]	*"You never know what the next case is. [Family medicine] forces you to use all the knowledge you learned at university" (Wallace an Brinister, 2010)*

3. Job security/stability	**3 studies**[31,44,45]	*"…the public sector is rick solid, so you basically have to do something bad to get fired. So there is a high degree of certainty in your job…" (Ashmore, 2013)*
3.1.Safety	**3 studies**[31,44,45]	
3.2.Physical	**2 studies**[31,45]	*"Female physicians usually do not like to work in BHUs. The reason may be the lack of security…" (Shah et al., 2006)*
3.3.Legal	**1 study**[44]	*"In state you've got three levels of people below you, so if you're…a state consultant, yes, you've got different stresses, you've got to give a lecture and you've got to give that, but I'm saying that's a different type of stress. But on a clinical responsibility level, between you and the patients, there is an intern and registrar… So the family's complaining… and that comes all the way through those two people before it gets you. So that's like you're three degrees removed." (Ashmore, 2013)*
IV. Managerial context		
1. Staffing levels	**7 studies**[31,38,40,42-44,46]	
1.1. Doctors' and assistants' deficiency	**5 studies**[31,38,40,44,46]	*"…If you fell you can't go away because there aren't people to cover your work then it creates tension in your ability to care for people. So resources around you do matter…The deficit falls on you to work hard." (Ashmore, 2013)*
		"There is only one medical assistant per family physician. That's just not enough." (Wallace and Brinister, 2010)
		"We lack the doctors we need to provide adequate services. The shortage has pushed us to work longer. If more doctors could join us, that may ease our burdens." (Chen et al., 2017)
1.1.1. Retention	**1 study**[44]	*"I mean… in our department…to retain people is quite difficult, people work for a year or two then they go to private or they go off somewhere else. And for those posts to be filled again, it takes a lot of time… and in between people are frustrated." (Ashmore, 2013)*
1.1.2. Absenteeism	**2 studies**[31,46]	*"…30% posts of physicians in the province are filled and most of them do no attend to their duties regularly." (Shah et al., 2006)*
1.1.3. Recruitment	**2 studies**[40,46]	*"…They [managers] don't advertise posts that are available, they'll tell you in human resources that the posts are there but even if you qualify for the posts they tell that because it hasn't been advertised, you can't get into." (Kotzee and Couper, 2006)*
1.2. Administrative staff deficiency	**3 studies**[42,44]	*"…within every department there are the obvious managerial requirements that some people take up. So somebody might do the roster allocation, somebody might do the leave allocation, somebody might do the budgeting, all that kind of stuff within any department. And that is left mostly to the members of the department to do even though we have very little training or no training whatsoever in management." (Ashmore, 2013)*
		"There's lots of paperwork, but it is easier now with the electronic medical record." (Wallace and Brinister, 2010)

2. Protocols and guidelines consistency	**4 studies**[31,41,44,46]	*"…if the performance reports are not analysed properly, then no actions are expected. The performance appraisals currently in practice must be updated. Job descriptions do not exist in health department; older version of the documents needs to be updated." (Shah et al., 2006)*
		"I think, medication prescription should be at the discretion of the physician…"(translation) (Feliciano et al., 2011)
3. Political interference	**2 studies**[31,46]	*"…Every patient is equal to us and we cannot give preference to a relative of a member of any political party. They try to influence us in several ways or they often threaten us to get us transferred to a remote BHU [Basic Healthcare Unit]" (Shah et al., 2016)*
		"We get political interference under decentralization…They look at negative aspects of our work and comment badly, coming anytime even after midnight to our homes. This is a member of parliament…" (Luboga et al., 2011)

References

1. Aluttis C, Bishaw T, Frank M. The workforce for health in a globalized context – global shortages and international migration2014.
2. WHO. Global strategy on Human Resources for health: Workforce 2030 Geneva, Switzerland: World Health Organisation; 2016 [Available from: http://www.who.int/hrh/resources/pub_globstrathrh-2030/en/.
3. WHO. The world health report 2006 - working together for health Geneva, Switzerland: World Health Organisation 2006 [Available from: http://www.who.int/whr/2006/en/.
4. Grieve S. Measuring morale - Does practice area deprivation affect doctors' well-being?1997.
5. Reininghaus U, Priebe S. Assessing morale in community mental health professionals: a pooled analysis of data from four European countries. *Social psychiatry and psychiatric epidemiology* 2007;42(3):237-43. doi: 10.1007/s00127-007-0154-7 [published Online First: 2007/02/03]
6. Department of Health. NHS Health and Wellbeing: Final Report.: Department of Health 2009 [Available from: http://webarchive.nationalarchives.gov.uk/20130124052412/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_108907.pdf.
7. Hall LH, Johnson J, Watt I, et al. Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. *PloS one* 2016;11(7):e0159015. doi: 10.1371/journal.pone.0159015
8. Mills EJ, Kanters S, Hagopian A, et al. The financial cost of doctors emigrating from sub-Saharan Africa: human capital analysis. *BMJ* 2011;343:d7031.
9. Chaudhury NHJ. Ghost Doctors: Absenteeism in Bangladeshi Health Facilities: The World Bank 2003.
10. McFadzean F, McFadzean E. Riding the emotional roller-coaster: a framework for improving nursing morale. *J Health Organ Manag* 2005;19(4-5):318-39. doi: 10.1108/14777260510615378 [published Online First: 2005/10/07]
11. Day G, Minichiello V, Madison J. Nursing morale: what does the literature reveal? 2006;30:516-24.
12. K. Johnsrud L. Measuring the Quality of Faculty and Administrative Worklife: Implications for College and University Campuses2002.
13. Totman J, Hundt G, Wearn E, et al. Factors affecting staff morale on inpatient mental health wards in England: A qualitative investigation2011.
14. Johnson S, Wood S, Paul M, et al. Inpatient Mental Health Staff Morale: a National Investigation2011.
15. Gulliver P, Towell D, Peck E. Staff morale in the merger of mental health and social care organizations in England. J Psychiatr Ment Health Nurs. England2003:101-7.
16. Cahill J, Gilbody S, Barkham M, et al. Systematic review of staff morale in inpatient units in mental health settings. 2018
17. Callaghan M. Nursing morale: what is it like and why? Journal of advanced nursing. England2003:82-9.
18. Cox KB. The effects of unit morale and interpersonal relations on conflict in the nursing unit. Journal of advanced nursing. England2001:17-25.

19. Haw MA, Claus EG, Durbin-Lafferty E, et al. [Improving job morale of nurses despite insurance cost control. 1: Organization assessment]. *Pflege* 2003;16(2):103-10. doi: 10.1024/1012-5302.16.2.103 [published Online First: 2003/05/22]
20. Yang KP, Huang CK. The effects of staff nurses' morale on patient satisfaction. *The journal of nursing research : JNR* 2005;13(2):141-52. [published Online First: 2005/06/30]
21. Hagopian A, Zuyderduin A, Kyobutungi N, et al. Job satisfaction and morale in the Ugandan health workforce. *Health Aff (Millwood)* 2009;28(5):w863-75. doi: 10.1377/hlthaff.28.5.w863 [published Online First: 2009/08/08]
22. Priebe S, Fakhoury WK, Hoffmann K, et al. Morale and job perception of community mental health professionals in Berlin and London. *Social psychiatry and psychiatric epidemiology* 2005;40(3):223-32. doi: 10.1007/s00127-005-0880-7 [published Online First: 2005/03/03]
23. Johnson S, Osborn D, Araya R, et al. Morale in the English mental health workforce: Questionnaire survey2012.
24. Bowers L, Allan T, Simpson A, et al. Morale is high in acute inpatient psychiatry. *Social psychiatry and psychiatric epidemiology* 2009;44(1):39-46. doi: 10.1007/s00127-008-0396-z [published Online First: 2008/07/08]
25. Abraham LJ, Thom O, Greenslade JH, et al. Morale, stress and coping strategies of staff working in the emergency department: A comparison of two different-sized departments. *Emergency medicine Australasia : EMA* 2018;30(3):375-81. doi: 10.1111/1742-6723.12895 [published Online First: 2018/01/25]
26. NHS Staff Surveys [Available from: http://www.nhsstaffsurveys.com/Page/1064/Latest-Results/2017-Results/.
27. Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med* 2014;89(3):443-51. doi: 10.1097/acm.0000000000000134 [published Online First: 2014/01/23]
28. Panagopoulou E, Montgomery A, Benos A. Burnout in internal medicine physicians: Differences between residents and specialists. Eur J Intern Med. Netherlands 2006:195-200.
29. Chopra M, Munro S, Lavis JN, et al. Effects of policy options for human resources for health: an analysis of systematic reviews. Lancet. England2008:668-74.
30. Mathauer I, Imhoff I. Health worker motivation in Africa: The role of non-financial incentives and human resource management tools. *Human resources for health* 2006;4 doi: 10.1186/1478-4491-4-24
31. Shah SM. Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakistan. 2016;5(8):467-75. doi:10.15171/ijhpm.2016.38
32. Victora CG, Habicht J-P, Bryce J. Evidence-Based Public Health: Moving Beyond Randomized Trials. *American journal of public health* 2004;94(3):400-05.
33. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6(7):e1000097.
34. World Bank Open Data 2018 [Available from: https://data.worldbank.org.
35. Critical Appraisal Skills Programme. CASP Qualitative 2018 [Available from: https://casp-uk.net/wp-content/uploads/2018/01/CASP-Qualitative-Checklist.pdf.

36. Gale NK, Heath G, Cameron E, et al. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol* 2013;13:117.
37. Popay J, Roberts H, Sowden A, et al. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC Methods Programme2006.
38. Chen Q, Yang L, Feng Q, et al. Job Satisfaction Analysis in Rural China: A Qualitative Study of Doctors in a Township Hospital. *Scientifica* 2017;2017:1964087. doi: 10.1155/2017/1964087 [published Online First: 2017/04/15]
39. Li T, Lei T, Sun F, et al. Determinants of village doctors' job satisfaction under China's health sector reform: a cross-sectional mixed methods study. *International journal for equity in health* 2017;16(1):64. doi: 10.1186/s12939-017-0560-8 [published Online First: 2017/04/20]
40. Kotzee TJ, Couper ID. What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? *Rural and remote health* 2006;6(3):581. [published Online First: 2006/09/13]
41. Feliciano KVO, Kovacs MH, Sarinho SW. Burnout among Family Healthcare physicians: The challenge of transformation in the workplace. *Ciencia e Saude Coletiva* 2011;16(8):3373-82. doi: 10.1590/S1413-81232011000900004
42. Wallace LS, Brinister I. Women family physicians' personal experiences in the republic of Moldova. *Journal of the American Board of Family Medicine* 2010;23(6):783-89. doi: 10.3122/jabfm.2010.06.100089
43. Liadova AV, Korkiya ED, Mamedov AK, et al. The burnout among emergency physicians: Evidence from Russia (sociological study). *Man in India* 2017;97(15):495-507.
44. Ashmore J. 'Going private': A qualitative comparison of medical specialists' job satisfaction in the public and private sectors of South Africa. 2013;11:1.
45. Malik AA, Yamamoto SS, Souares A, et al. Motivational determinants among physicians in Lahore, Pakistan. *BMC health services research* 2010;10:201. doi: 10.1186/1472-6963-10-201 [published Online First: 2010/07/14]
46. Luboga S, Hagopian A, Ndiku J, et al. Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals. *The International journal of health planning and management* 2011;26(1):2-17. doi: 10.1002/hpm.1036 [published Online First: 2011/01/01]
47. Zwack J, Schweitzer J. If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians. *Acad Med* 2013;88(3):382-9. doi: 10.1097/ACM.0b013e318281696b [published Online First: 2013/01/26]
48. Sofia Kjellström and Gunilla Avby and Kristina Areskoug-Josefsson and Boel Andersson Gäre and Monica Andersson B. Work motivation among healthcare professionals: A study of well-functioning primary healthcare centers in Sweden. *Journal of Health Organization and Management* 2017;31(4):487-502. doi: 10.1108/JHOM-04-2017-0074
49. Agana DF, Porter M, Hatch R, et al. Job Satisfaction Among Academic Family Physicians. *Fam Med* 2017;49(8):622-25. [published Online First: 2017/09/28]
50. Reid Y, Johnson S, Morant N, et al. Explanations for stress and satisfaction in mental health professionals: a qualitative study. *Social psychiatry and psychiatric epidemiology* 1999;34(6):301-8. [published Online First: 1999/07/28]

51. Hall L, Johnson J, Heyhoe J, et al. Strategies to improve General Practitioner wellbeing: A focus group study. 2017;35
52. Kruse GR, Chapula BT, Ikeda S, et al. Burnout and use of HIV services among health care workers in Lusaka District, Zambia: a cross-sectional study. *Human resources for health* 2009;7:55-55. doi: 10.1186/1478-4491-7-55
53. Priebe S, K H Fakhoury W, Hoffmann K-M, et al. Morale and job perception of community mental health professionals in Berlin and London2005.
54. Willis-Shattuck M, Bidwell P, Thomas S, et al. Motivation and retention of health workers in developing countries: a systematic review. *BMC health services research* 2008;8:247. doi: 10.1186/1472-6963-8-247 [published Online First: 2008/12/06]
55. Mohindra KS. Healthy public policy in poor countries: tackling macro-economic policies. Health Promot Int. England2007:163-9.
56. Kentikelenis AE. Structural adjustment and health: A conceptual framework and evidence on pathways. Soc Sci Med. England: 2017 Elsevier Ltd 2017:296-305.
57. Nolan T, Angos P, Cunha AJ, et al. Quality of hospital care for seriously ill children in less-developed countries. Lancet. England2001:106-10.
58. Travis P, Bennett S, Haines A, et al. Overcoming health-systems constraints to achieve the Millennium Development Goals. Lancet. England2004:900-6.
59. Beste J, Pfeiffer J. Mozambique's Debt and the International Monetary Fund's Influence on Poverty, Education, and Health. Int J Health Serv. United States: The Author(s) 2016. 2016:366-81.
60. Laurell AC. Three decades of neoliberalism in Mexico: the destruction of society. Int J Health Serv. United States: The Author(s) 2015 Reprints and permissions:]br]sagepub.co.uk/journalsPermissions.nav. 2015:246-64.
61. Coburn C, Restivo M, Shandra JM. The African Development Bank and women's health: a cross-national analysis of structural adjustment and maternal mortality. Soc Sci Res. United States: 2014 Elsevier Inc 2015:307-21.
62. Hossen MA, Westhues A. The medicine that might kill the patient: Structural Adjustment and its impacts on health care in Bangladesh. *Soc Work Public Health* 2012;27(3):213-28. doi: 10.1080/19371910903126754 [published Online First: 2012/04/11]
63. Kentikelenis AE, Stubbs TH, King LP. Structural adjustment and public spending on health: evidence from IMF programs in low-income countries. Soc Sci Med. England: 2014 Elsevier Ltd 2015:169-76.
64. Thomson M, Kentikelenis A, Stubbs T. Structural adjustment programmes adversely affect vulnerable populations: a systematic-narrative review of their effect on child and maternal health. *Public health reviews* 2017;38:13-13. doi: 10.1186/s40985-017-0059-2
65. Van Ham I, Verhoeven AA, Groenier KH, et al. Job satisfaction among general practitioners: a systematic literature review. Eur J Gen Pract. England2006:174-80.
66. Scheurer D, McKean S, Miller J, et al. U.S. physician satisfaction: a systematic review. *J Hosp Med* 2009;4(9):560-8. doi: 10.1002/jhm.496 [published Online First: 2009/12/17]
67. Tomljenovic M, Kolaric B, Stajduhar D, et al. Stress, depression and burnout among hospital physicians in Rijeka, Croatia. *Psychiatria Danubina* 2014;26 Suppl 3:450-8. [published Online First: 2014/12/30]

68. Goetz K, Jossen M, Szecsenyi J, et al. Job satisfaction of primary care physicians in Switzerland: an observational study. Family practice. England: The Author 2016. Published by Oxford University Press For permissions, please e-mail: journals.permissions@oup.com. 2016:498-503.
69. Joyce C, Wang WC. Job satisfaction among Australian doctors: the use of latent class analysis. J Health Serv Res Policy. England: The Author(s) 2015. 2015:224-30.
70. Janus K, Amelung VE, Gaitanides M, et al. German physicians "on strike"--shedding light on the roots of physician dissatisfaction. Health Policy. Ireland2007:357-65.
71. McCoy D. Critical Global Health: Responding to Poverty, Inequality and Climate Change Comment on "Politics, Power, Poverty and Global Health: Systems and Frames". *Int J Health Policy Manag* 2017;6(9):539-41.
72. Schrecker T. Interrogating scarcity: how to think about 'resource-scarce settings'. *Health Policy Plan* 2013;28(4):400-9.

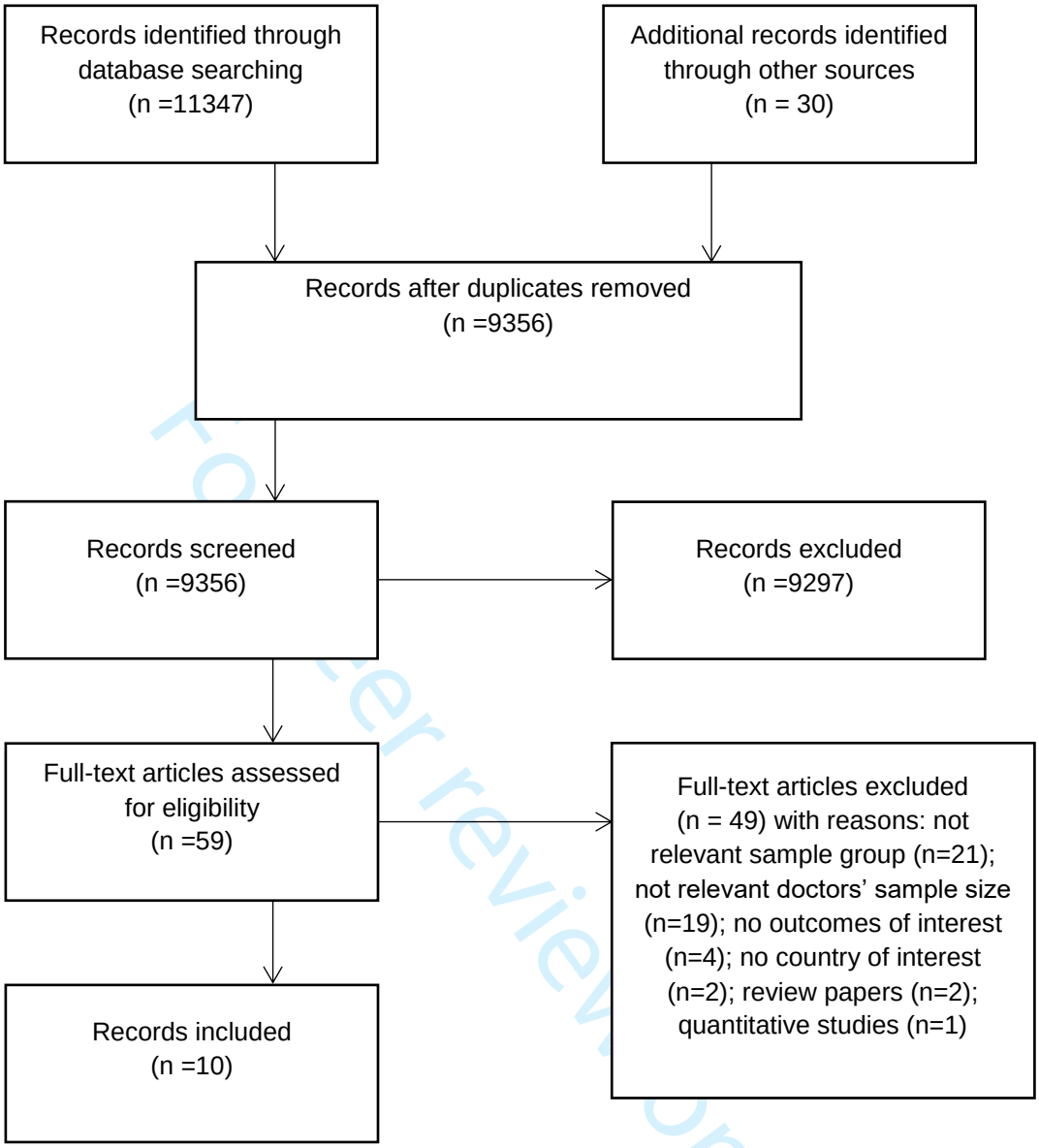

Figure 1. PRISMA flow diagram

Supplementary file 1. Search terms.

morale OR well-being OR "well being" OR wellbeing OR "job satisfaction" OR burnout OR burn-out OR "burn out" OR "job motivation" OR resilience OR depression OR "depression symptoms" OR "moral distress" OR "psychological distress" OR "depressive symptoms"

AND

"health workers" OR "healthcare professionals" OR "medical doctors" OR physicians OR "medical specialists" OR clinicians OR "clinical professionals" OR "medical professionals" OR "healthcare specialists" OR audiologists OR allergists OR andrologists OR anaesthesiologists OR cardiologists OR dentists OR dermatologists OR endocrinologists OR epidemiologists OR "family doctors" OR gastroenterologists OR gynaecologists OR haematologists OR hepatologists OR immunologists OR "infectious disease specialists" OR "internal medicine specialists" OR internists OR neonatologist OR nephrologists OR neurologist OR neurosurgeons OR obstetricians OR oncologists OR ophthalmologists OR "orthopaedic surgeons" OR "ENT specialists" OR otolaryngologists OR perinatologists OR "paleo pathologists" OR parasitologists OR pathologists OR paediatricians OR physiologists OR physiatrists OR podiatrists OR psychiatrists OR pulmonologists OR radiologists OR rheumatologists OR surgeons OR urologists OR "emergency doctors"

AND

"low- and middle-income countries" OR LMICs OR "low and middle income countries" OR Afghanistan OR "Gambia The" OR Niger OR Benin OR Guinea OR Rwanda OR "Burkina Faso" OR Guniea-Bisau OR "Sierra Leone" OR Burundi OR Haiti OR Somalia OR Cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR Liberia OR Tanzania OR Chad OR Madagascar OR Togo OR Comoros OR Malawi OR Uganda OR "Congo, Dem. Rep." OR Mali OR Zimbabwe OR Eritrea OR Mozambique OR Ethiopia OR Nepal OR Armenia OR Indonesia OR Samoa OR Bangladesh OR Kenya OR "Sao Tome and Principe" OR Bhutan OR Kiribati OR Senegal OR Bolivia OR Kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR Cameroon OR "Lao PDR" OR Sudan OR "Congo, Rep." OR Lesotho OR Swaziland OR "Cote divoire" OR Mauritania OR "Syrian Arab Republic" OR Djibouti OR "Micronesia, Fed. Sts." OR Tajikistan OR "Egypt, Arab Rep." OR Moldova OR Timor-Leste OR "El Salvador" OR Morocco OR Ukraine OR Georgia OR Myanmar OR Uzbekistan OR Ghana OR Nicaragua OR Vanuatu OR Guatemala OR Nigeria OR Vietnam OR Guyana OR Pakistan OR "West Bank and Gaza" OR Honduras OR "Papua New Guinea" OR "Yemen, Rep." OR India OR Philippines OR Zambia OR Albania OR Fiji OR Namibia OR Algeria OR Gabon OR Palau OR "American Samoa" OR Grenada OR Panama OR Angola OR "Iran, Islamic Rep." OR Paraguay OR Azerbaijan OR Iraq OR Peru OR Belarus OR Jamaica OR Romania OR Belize OR Jordan OR Serbia OR "Bosnia and Herzegovina" OR Kazakhstan OR "South Africa" OR Botswana OR Lebanon OR "St. Lucia" OR Brazil OR Libya OR "St. Vincent and the Grenadines" OR Bulgaria OR "Macedonia, FYR" OR Suriname OR China OR Malaysia OR Thailand OR Colombia OR Maldives OR Tonga OR "Costa Rica" OR "Marshall Islands" OR Tunisia OR Cuba OR Mauritius OR Turkey OR Dominica OR Mexico OR Turkmenistan OR "Dominican Republic" OR Mongolia OR Tuvalu Ecuador OR Montenegro

Full electronic search strategy for one database (Pubmed)

#4 Add Search ((((morale[Title/Abstract] OR well-being[Title/Abstract] OR "well being"[Title/Abstract] OR wellbeing[Title/Abstract] OR "job satisfaction"[Title/Abstract] OR burnout[Title/Abstract] OR burn-out[Title/Abstract] OR "burn out"[Title/Abstract] OR "job motivation"[Title/Abstract] OR resilience[Title/Abstract] OR depression[Title/Abstract] OR "depression symptoms"[Title/Abstract] OR "moral distress"[Title/Abstract] OR "psychological distress"[Title/Abstract] OR "depressive symptoms"[Title/Abstract]))) AND (("health workers"[Title/Abstract] OR "healthcare professionals"[Title/Abstract] OR "medical doctors"[Title/Abstract] OR physicians[Title/Abstract] OR "medical specialists"[Title/Abstract] OR clinicians[Title/Abstract] OR "clinical professionals"[Title/Abstract] OR "medical professionals"[Title/Abstract] OR "healthcare specialists"[Title/Abstract] OR audiologists[Title/Abstract] OR allergists[Title/Abstract] OR andrologists [Title/Abstract] OR anaesthesiologists [Title/Abstract] OR cardiologists[Title/Abstract] OR dentists[Title/Abstract] OR dermatologists[Title/Abstract] OR endocrinologists[Title/Abstract] OR epidemiologists[Title/Abstract] OR "family doctors"[Title/Abstract] OR gastroenterologists[Title/Abstract] OR gynaecologists[Title/Abstract] OR haematologists[Title/Abstract] OR hepatologists[Title/Abstract] OR immunologists[Title/Abstract] OR "infectious disease specialists"[Title/Abstract] OR "internal medicine specialists"[Title/Abstract] OR internists[Title/Abstract] OR neonatologist[Title/Abstract] OR nephrologists[Title/Abstract] OR neurologist[Title/Abstract] OR neurosurgeons[Title/Abstract] OR obstetricians[Title/Abstract] OR oncologists[Title/Abstract] OR ophthalmologists[Title/Abstract] OR "orthopaedic surgeons"[Title/Abstract] OR "ENT specialists"[Title/Abstract] OR otolaryngologists[Title/Abstract] OR perinatologists[Title/Abstract] OR "paleo pathologists"[Title/Abstract] OR parasitologists[Title/Abstract] OR pathologists[Title/Abstract] OR paediatricians[Title/Abstract] OR physiologists[Title/Abstract] OR physiatrists[Title/Abstract] OR podiatrists[Title/Abstract] OR psychiatrists[Title/Abstract] OR pulmonologists[Title/Abstract] OR radiologists[Title/Abstract] OR rheumatologists[Title/Abstract] OR surgeons[Title/Abstract] OR urologists[Title/Abstract] OR "emergency doctors"[Title/Abstract]))) AND (("low- and middle-income countries" OR lmics OR "low and middle income countries" OR afghanistan OR "Gambia The" OR niger OR benin OR guinea OR rwanda OR "Burkina Faso" OR guinea bissau OR "Sierra Leone" OR burundi OR haiti OR somalia OR cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR liberia OR tanzania OR chad OR madagascar OR togo OR comoros OR malawi OR uganda OR "Congo, Dem. Rep." OR mali OR zimbabwe OR eritrea OR mozambique OR ethiopia OR nepal OR armenia OR indonesia OR samoa OR bangladesh OR kenya OR "Sao Tome and Principe" OR bhutan OR kiribati OR senegal OR bolivia OR kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR cameroon OR "Lao PDR" OR sudan OR "Congo, Rep." OR lesotho OR swaziland OR "Cote divoire" OR mauritania OR "Syrian Arab Republic" OR djibouti OR "Micronesia, Fed. Sts." OR tajikistan OR "Egypt, Arab Rep." OR moldova OR timor-leste OR "El Salvador" OR morocco OR ukraine OR georgia OR myanmar OR uzbekistan OR ghana OR nicaragua OR vanuatu OR guatemala OR nigeria OR vietnam OR guyana OR pakistan OR "West Bank and Gaza" OR honduras OR "Papua New Guinea" OR "Yemen, Rep." OR india OR philippines OR zambia OR albania OR fiji OR namibia OR algeria OR gabon OR palau OR "American Samoa" OR grenada OR panama OR angola OR "Iran, Islamic Rep." OR paraguay OR azerbaijan OR iraq OR peru OR belarus OR jamaica OR romania OR belize OR jordan OR serbia OR "Bosnia and Herzegovina" OR kazakhstan OR "South Africa" OR

botswana OR lebanon OR "St. Lucia" OR brazil OR libya OR "St. Vincent and the Grenadines" OR bulgaria OR "Macedonia, FYR" OR suriname OR china OR malaysia OR thailand OR colombia OR maldives OR tonga OR "Costa Rica" OR "Marshall Islands" OR tunisia OR cuba OR mauritius OR turkey OR dominica OR mexico OR turkmenistan OR "Dominican Republic" OR mongolia OR tuvalu ecuador OR montenegro)) Sort by: PublicationDate 2475 06:23:48

#3 Add Search ("low- and middle-income countries" OR lmics OR "low and middle income countries" OR afghanistan OR "Gambia The" OR niger OR benin OR guinea OR rwanda OR "Burkina Faso" OR guinea bissau OR "Sierra Leone" OR burundi OR haiti OR somalia OR cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR liberia OR tanzania OR chad OR madagascar OR togo OR comoros OR malawi OR uganda OR "Congo, Dem. Rep." OR mali OR zimbabwe OR eritrea OR mozambique OR ethiopia OR nepal OR armenia OR indonesia OR samoa OR bangladesh OR kenya OR "Sao Tome and Principe" OR bhutan OR kiribati OR senegal OR bolivia OR kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR cameroon OR "Lao PDR" OR sudan OR "Congo, Rep." OR lesotho OR swaziland OR "Cote divoire" OR mauritania OR "Syrian Arab Republic" OR djibouti OR "Micronesia, Fed. Sts." OR tajikistan OR "Egypt, Arab Rep." OR moldova OR timor-leste OR "El Salvador" OR morocco OR ukraine OR georgia OR myanmar OR uzbekistan OR ghana OR nicaragua OR vanuatu OR guatemala OR nigeria OR vietnam OR guyana OR pakistan OR "West Bank and Gaza" OR honduras OR "Papua New Guinea" OR "Yemen, Rep." OR india OR philippines OR zambia OR albania OR fiji OR namibia OR algeria OR gabon OR palau OR "American Samoa" OR grenada OR panama OR angola OR "Iran, Islamic Rep." OR paraguay OR azerbaijan OR iraq OR peru OR belarus OR jamaica OR romania OR belize OR jordan OR serbia OR "Bosnia and Herzegovina" OR kazakhstan OR "South Africa" OR botswana OR lebanon OR "St. Lucia" OR brazil OR libya OR "St. Vincent and the Grenadines" OR bulgaria OR "Macedonia, FYR" OR suriname OR china OR malaysia OR thailand OR colombia OR maldives OR tonga OR "Costa Rica" OR "Marshall Islands" OR tunisia OR cuba OR mauritius OR turkey OR dominica OR mexico OR turkmenistan OR "Dominican Republic" OR mongolia OR tuvalu ecuador OR montenegro) Sort by: PublicationDate3321846 06:23:29

#2 Add Search (“health workers”[Title/Abstract] OR “healthcare professionals”[Title/Abstract] OR “medical doctors”[Title/Abstract] OR physicians[Title/Abstract] OR “medical specialists”[Title/Abstract] OR clinicians[Title/Abstract] OR “clinical professionals”[Title/Abstract] OR “medical professionals”[Title/Abstract] OR “healthcare specialists”[Title/Abstract] OR audiologists[Title/Abstract] OR allergists[Title/Abstract] OR andrologists [Title/Abstract] OR anaesthesiologists [Title/Abstract] OR cardiologists[Title/Abstract] OR dentists[Title/Abstract] OR dermatologists[Title/Abstract] OR endocrinologists[Title/Abstract] OR epidemiologists[Title/Abstract] OR “family doctors”[Title/Abstract] OR gastroenterologists[Title/Abstract] OR gynaecologists[Title/Abstract] OR haematologists[Title/Abstract] OR hepatologists[Title/Abstract] OR immunologists[Title/Abstract] OR “infectious disease specialists”[Title/Abstract] OR “internal medicine specialists”[Title/Abstract] OR internists[Title/Abstract] OR neonatologist[Title/Abstract] OR nephrologists[Title/Abstract] OR neurologist[Title/Abstract] OR neurosurgeons[Title/Abstract] OR obstetricians[Title/Abstract] OR oncologists[Title/Abstract] OR ophthalmologists[Title/Abstract] OR “orthopaedic surgeons”[Title/Abstract] OR “ENT specialists”[Title/Abstract] OR otolaryngologists[Title/Abstract] OR perinatologists[Title/Abstract] OR “paleo pathologists”[Title/Abstract] OR parasitologists[Title/Abstract] OR pathologists[Title/Abstract] OR paediatricians[Title/Abstract] OR

physiologists[Title/Abstract] OR physiatrists[Title/Abstract] OR podiatrists[Title/Abstract] OR psychiatrists[Title/Abstract] OR pulmonologists[Title/Abstract] OR radiologists[Title/Abstract] OR rheumatologists[Title/Abstract] OR surgeons[Title/Abstract] OR urologists[Title/Abstract] OR "emergency doctors"[Title/Abstract]) Sort by: PublicationDate 601950 06:22:58

#1 Add Search (morale[Title/Abstract] OR well-being[Title/Abstract] OR "well being"[Title/Abstract] OR wellbeing[Title/Abstract] OR "job satisfaction"[Title/Abstract] OR burnout[Title/Abstract] OR burn-out[Title/Abstract] OR "burn out"[Title/Abstract] OR "job motivation"[Title/Abstract] OR resilience[Title/Abstract] OR depression[Title/Abstract] OR "depression symptoms"[Title/Abstract] OR "moral distress"[Title/Abstract] OR "psychological distress"[Title/Abstract] OR "depressive symptoms"[Title/Abstract]) Sort by: PublicationDate 393635 06:22:33

Supplementary file 2. Data extraction form.

General information		Study characteristics								Participant characteristics			Results		
Title Authors Year of publication	Country Income group	Aim(s)/objective(s) of the study	Study design	Outcome of interest	Inclusion criteria	Exclusion criteria	Type of interview	Questionnaire details	Recruitment/sampling	Sample size, n Professional group (s)	Response rate	Gender Age range/mean	Clinical experience /mean (years)	Key findings	Conclusion
Women family physicians' personal experiences in the Republic of Moldova Wallace and Brinister 2010	Moldova lower-middle income	to explore the personal experiences of female physicians in Chisinau, Moldova	qualitative (in-depth interviews)	job satisfaction	full-time practising female family physicians	not stated	in-depth, face to face, semi-structured	8 item: (1) Why did you choose to be a family doctor? (2) Can you please tell me what you do on a "typical" day? (3) How many patients do you see on a "typical" day? (4) In your opinion, what are the top 3 health problems facing Moldovans today? (5) Are your patients well informed (have a good understanding) about health issues? (6) Where do most of your patients "get" their health information? (7) What do you like the most about being a family doctor? And (8) What do you like the least about being a family doctor?	directors were contacted via email/telephone/ purposive	20 family physicians (11 Eleven of them did not originally complete residency training to become a family physician: paediatricians (n 10) and therapeutic physician (1))	not stated	females 100% 42.4±7.2	12.2±7.9	4 key themes: 1) family medicine as a speciality offered much diversity and personal satisfaction: (+) diversity of cases; possibility to treat entire families and all ages; personal satisfaction from positive outcomes. (-) Lower status in comparison with specialists; high professional demands and as a result lack of personal time. 2) appointment time restrains and paperwork - challenges to provide care: insufficient amount of time (15 min) per patient - needs of patients might be different; 1 assistant per family physician; 'false' home visits; travel difficulties during the home visits (street dogs etc.); unnecessary, but mandated paperwork; electronic medical records system made paperwork less time consuming. 3) problems faced by patients are complex and go beyond the leading causes: not only physical problems matter (difficult life situations, lack of money, patients unhappy by their lives, many patients exhibited symptoms of depression) 4) patients have limited knowledge about health, but improved access to it: patients are not well informed, do not get thought, do not want to listen, difficulties in working with chronic patients - do not feel ill, have to convince patients to come, internet is covering that knowledge gap, and younger generation is more responsible.	Working as a family physician was personally rewarding, but system related challenges influenced negatively on job satisfaction and quality of care.

Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakistan Shah et al 2016	Pakistan lower middle income	To identify factors affecting the retention and motivation of doctors working in PHC (primary healthcare) facilities of Pakistan.	qualitative (interviews)	job motivation	physicians employed by BHUs (basic healthcare units) and district and provincial government health managers	not stated	semi-structured and in-depth	not stated	not stated	22 16 physicians (medical doctors=GPs) + 6 managers	not stated	13.6% - females 38	9.83	1)individual/personal factors: gender - harder to females due to cultural and security reasons; marital status - difficult to relocate to BHUs (they are in rural areas) due to disruption for their personal lives, insufficient educational opportunities for their children; nature of the job - job in BHUs is flexible (no emergency calls), secure for the rest of their careers, good option for newly graduates; absenteeism - younger physicians are more motivated to stay in BHUs; residence - provided houses are uninhabitable; difficult to commute; 2) workplace level factors: participants were satisfied with the physical environment; dissatisfied with colleagues - unsupportive, auxiliary workers were working without licence; recognition by supervisors was encouraging; political interference - affected appointments and transfers of staff; 3) organizational factors: remuneration - not satisfied with salaries, unequal salaries in comparison with secondary or tertiary care hospitals; professional growth and training - limited educational opportunities; promotions and transfers - debates about need for the influential person to get a promotion; supplies and medical facilities - shortage of medicines, irregular supply; performance appraisal and job perceptions - limited knowledge of the staff about the performance appraisal, lack of proper supervision, on existent job descriptions; human resource management strategies - not stuffiest hr management documents and older ones needed to be revised.	Priority themes: lack of basic facilities for physicians and their families; remoteness and lack of education facilities - individual factors; nature of work respect - workplace factors; remuneration, job security, supplies and medical facilities, lack of promotions and politically influenced transfers, training and learning opportunities - organizational factors

Motivational determinants among physicians in Lahore, Pakistan Malik et al 2010	Pakistan lower middle income	To identify the determinants of job motivation among physicians, a neglected perspective, especially in developing countries.	mixed method	job motivation	physicians were selected from public primary, public secondary and public and private tertiary health facilities in the Lahore district, Pakistan; all registered physicians from the Pakistani medical and dentistry council working in the study health facilities at the time of recruitment	not stated	open-ended questionnaire	asked to list their 5 main motivators and demotivators in their own words	stratified random	360 physicians	not stated	50% of females	not stated	The general motivators, good pay, respect, serving people, good working conditions and career growth were common for both public and private health tertiary health care physicians. The only difference observed was that public sector physicians reported personal safety as a motivator rather than opportunities for higher qualification, as reported by those in the private sector.	
What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? Kotzee and Couper 2006	South Africa upper middle income	to identify interventions that will lead to improved retention of South African qualified doctors in rural hospital service in the Limpopo province of South Africa	qualitative (interviews)	job motivation	non-specialist South African qualified doctors working in Limpopo public hospitals during 2005 (mostly GPs)		semi-structured interviews	Main question: What would make it attractive for you to continue working longer-term in rural hospital service in Limpopo? (was given in advance) Follow-up questions about views on current career structure, significant demotivators, rural allowance, other incentives/disi	purposive or random? (both of these methods were stated but in different parts)	10 rural physicians (5-principal medical officers (GPs); 3-senior medical officers (registrars); 1- medical officer; 1 - chief medical officer)		60% - males 25-36	4-9 years	demotivators: 1) poor hospital infrastructure (road access, telephone connections, appropriate facilities and equipment) and working conditions (workload, understaffing, salaries); 2) poor hospital accommodation and social support (schooling for children, recreational facilities); 3) poor academic stimulation (lack of opportunities for continuing education; 4) difficulties with promotions; 5) poor hospital management (not enough support and respect from managers; bureaucracy, interference by non-clinical managers to work); 6) not enough opportunities to utilize annual leave (more annual, study, unpaid, sabbatical leaves are necessary) ; motivators: 1) specialists support (visiting consultants);	an incentive package should be introduced for rural doctors

								ncentives, 3 main issues. (main question and 5 follow-up questions)						2) relationship among staff	
Going private': A qualitative comparison of medical specialists' job satisfaction in the public and private sectors of South Africa Ashmore 2013	South Africa upper middle income	To elaborate what South African medical specialists find satisfying about working in the public and private sectors, at present, and how to better incentivize retention in the public sector.	qualitative (interviews)	job satisfaction	South African dual practice doctors working in urban, hospital settings: specialists and medical officers (GPs who work in hospitals)	GPs and rural doctors	semi-structured interviews	what dual practice specialists found comparatively satisfying About working in both the public and private sectors ('tell me about the history of your working life, starting from when you qualified as a doctor. I'm particularly interested in reasons for entering and leaving different jobs'; reasons for staying or leaving the public sector).	purposive (in 6 hospital departments)	74 interviews (included follow-up interviews) 23 - key informants (23 interviews) - (policymakers and managers); 28 - dual practice doctors (51 interviews)		36% - females 29-63		1) rewards (financial incentives and benefits): private (+) higher financial rewards (salaries) are the reason to work in the private sector, but income is not the only thing that doctors care about, so they are working in dual practice; (-) high migration costs (purchasing own equipment), no guarantee of a regular supply of private patients for specialists (no referral networks); public (+) public state pension, paid holidays, paid sabbatical leave, income stability, free use of research and academic facilities and less potentially costly medicolegal risk (lower probability of being sued), (-);low salaries. 2) work context: private - 'sell availability', 'be on the end of the phone', solely responsibility for patients and not having others under your service; public - fewer resources, less equipment and drugs available, resource constraints, 'political in-fighting' among departments, lack of administrative staff, lack of doctors, low opportunities for career progression; 3) social work environment: higher sense of collegiality in public hospitals, poor relationships between doctors and nurses (nurses are undertrained, supportive managers are good incentive, but doctors felt undervalued, most respondents felt quite happy with patient interactions, but had legitimate issues (private patients were overly demanding,); 4) work itself - highly intense, research and teaching opportunities are welcomed, because it added variety, doctors felt more needed in public hospitals; more opportunities for more interesting and complex pathology in public; more autonomy in private	advantages and disadvantages of public and private clinics were given. Interventions should be developed based on these findings.

Burnout among Family Healthcare physicians: The challenge of transformation in the workplace Feliciano et al 2011	Brazil upper middle income	To understand how conflicts with the institution and disagreements regarding team members' attributions are interpreted by Family Healthcare physicians from the burnout perspective.	qualitative (interviews)	burnout	family healthcare (special program) physicians in Recife, Brazil with an experience more than one year		semi-structured interviews	1) discrepancies between institutional values and individual desires; 2) disagreement with the team members' competence; 3)negative consequences of the work	purposive (based on management evaluation)	24 physicians (12-pediatricians, 8 - GPs, psychiatrist, infectologists, obstetric gynaecologist, anaesthesiologist)		66.7% - females	3 month - 10 years	1) Discrepancy between institutional values and individual desires: high workload (feel suffocated), bur resources are low; discrepancy in efforts made and results gained; excessive demands and low organizational support; problems are greater than available resources, high expectations during the education and then dissatisfaction; low professional achievement, low opportunities to continue education, lack of personal identity among organizational goals, values, tasks; 2) disagreement with team members' competences: uncertainty between the demands of the profession and knowledge/skills; luck of trust within the team; bureaucracy; lack of nurses competences, but they are powerful (act like doctors and prescribe drugs) - no place for the doctor - lower recognition; 3) negative consequences of work insufficient institutional support, high stress triggered new illnesses and exacerbated existed ones	1) the role of the physician is not determined sufficiently, also, not clear roles between physician and nurse, lack of identity between physicians' values and organizational values; 2) expectations vs reality 3) high level of stress; 4) insufficient organizational support
Determinants of village doctors' job satisfaction under China's health sector reform: a cross-sectional mixed methods study Li et al 2017	China upper middle income	to describe village doctors' job satisfaction under the context of health sector reform and investigate the associated factors	mixed methods of	job satisfaction	village doctors who worked in the 12 chosen counties for more than six month or health managers who were responsible for village doctors issues.		semi-structured interviews		purposive (gender, age, geographic location, and levels of seniority)	34 interviews 21 with village doctors and 13 with managers		23.5% of females		1) years of experience (age) - higher professional reputation with ages, higher trust from the patients - older participants had higher job satisfaction; 2) income - is low - strong reason for job dissatisfaction; 3) pension plan - low pension rate for village doctors; 4) workload - transportation problems; 4) integrated management (attempt to manage village doctors as regular doctors) - increased respect among population, more responsibilities	village doctors in China transformed from barefoot doctors, but the education process of them is not clear, seems like only 3 years of medical training are required (Hu et al., 2017)

The burnout among emergency physicians: Evidence from Russia (sociological study) Liadova et al 2017	Russia upper middle income	to determine the prevalence burnout and its reasons among doctors occupied in emergency aid departments	mixed methods	burnout	physicians, who provide emergency care service for 24 hours a day and are occupied in emergency trauma aid department in one of the central public clinics in Moscow, Russia.		in-depth interviews (stated in the paper), but seems like semi-structured	What are the burnout causes? (personal and workplace conflicts, their cases, work satisfaction, opportunities for professional progress, ways to compensate occupational stress).		50 interviews emergency care physicians		40 % of females 25-50	less than 5 years - more than 20 years	1) excessive workload and low wage level - 99% (low salary 99% and too many work hours - 56%); 2) 'difficult patients' - 53%; 3) total control and growing requirements - 51%; 4) night shifts - 46%; 5) increasing medical documentation - 41%; 6) organizational hierarchy - 33%; 7) family problems - 21%; 8) personal relationship - 11%. In addition to these questions, the respondents were asked about their ways to compensate for occupational stress. The most part (60%) of our respondents reported reliance on psychotropic substances (drinking alcohol, smoking, and drugs), 30% of them go in for sports, 10% do nothing.	physicians in the study were highly dissatisfied

Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals Luboga et al 2010	Uganda low income	To explore physician reasons for staying, how satisfied they are with their current positions, what could entice them to stay longer, and their future career intentions.	mixed-methods	job motivation, satisfaction	physicians who were working at 10 facilities in Uganda		focus groups	working and living conditions	stratified random sampling	11 focus groups	49 physicians	females 10% 26-70/36	almost 10 years in their professions, in their current positions an average 6.5	1) quality of management: respect and support from supervisors; assisting in problem-solving, enough autonomy to staff, adequate supervision, sense of ownership and responsibility instillation. 2) availability of equipment, supplies and drugs: infrastructure issues, complaining about lack of clean water or electricity, not enough beds fro patients or space in the ward, and poor infection control. 3) staffing and workload: physicians shortage, the single physician was playing multiple roles in the facility (surgeon, on-call doctor), unreasonable patient loads, lack of available specialists, positions that have gone unfilled for months or years. 4) political influence: lack of confirmation of their positions, interference by district-level politicians in the decision making at health facilities, and intimidation of health workers by local politicians - politicians with no health knowledge should not be put in a decision-making role for health issues in the district. 5) community and location: lack of opportunities for study leave, learning in more high-tech or well-resourced environments, and the lack of promotion or growth available. 6) compensation and job security: none of the physicians felt their compensation acceptable combined with job insecurity.	

Job Satisfaction Analysis in Rural China: A Qualitative Study of Doctors in a Township Hospital Chen et al 2017	China upper-middle income	to understand the level of job satisfaction as felt by primary Health care providers.	qualitative	job satisfaction	doctor employed in a township health center, willing to deliver consent to participate documentation during the FGDs, and was able to communicate in the Mandarin Chinese or the local dialect (		focus groups	The guide included questions and queries on the following six themes: attitudes towards working conditions; views about workload and financial rewards; willingness to provide health care; attitudes towards job achievement; attitudes towards doctor-patient relationships; and measures are taken to improve doctors' job satisfaction.		5 focus groups	39 doctors	59% females /47; 39; 42; 38; 45	more than 10 years	Thefindings revealed six main themes relating to doctors' job satisfaction in township health centres: attitudes towards working conditions; views related to workload and financial rewards; willingness to provide health care; attitudes towards job achievement; attitudes towards doctor-patient relationships; and measures are taken to improve the doctor's job satisfaction.	

Supplementary file 3. Quality assessment form.

Author, year	1. Was there a clear statement of the aims of the research?	2. Is a qualitative methodology appropriate?	3. Was the research design appropriate to address the aims of the research?	4. Was the recruitment strategy appropriate to the aims of the research?	5. Was the data collected in a way that addressed the research issue?	6. Has the relationship between researcher and participants been adequately considered?	7. Have ethical issues been taken into consideration?	8. Was the data analysis sufficiently rigorous?	9. Is there a clear statement of findings?	10. How valuable is the research?
Wallace and Brinister, 2010	yes	yes	yes (but authors did not discussed how they decided to use qualitative methods)	can't tell (researcher has explained how participants were selected , but didn't provide reasons for selection and drop outs)	yes	yes	yes	yes	yes	yes (but identification of new areas where research is necessary not clear stated)
Shah et al , 2016	yes	can't tell	yes (rationale for using qualitative methods were given)	yes (but drop outs were not discussed)	yes	can't tell	yes	yes	yes	yes
Malik et al , 2010	yes	can't tell	can't tell	yes	no	can't tell	yes	no	yes	yes
Kotzee and Couper, 2006	yes	can't tell	can't tell	no	yes	can't tell	yes	no	yes	yes
Ashmore, 2013	yes	yes	yes	yes	yes	can't tell	yes	no	yes	yes
Feliciano et al, 2011	yes	yes	yes	can't tell	yes	can't tell	yes	yes	yes	yes

Li et al, 2017	yes	yes	yes	can't tell	yes	can’t tell	yes	yes	yes	yes
Liadove et al, 2017	yes	yes	yes	can't tell	no	no	can’t tell	can't tell	no	yes
Luboga et al, 2010	yes	can't tell	yes	yes	yes	can’t tell	yes	can't tell	yes	yes
Chen et al., 2017	yes	yes	yes	yes	yes	can't tell	yes	yes	yes	can't tell

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
ABSTRACT			
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
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
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.	4
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.	5
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.	Supplementary file 1
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).	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.	5, Supplementary file 2
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5
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, Supplementary file 3
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	-

PRISMA 2009 Checklist

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.	5-6

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).	5, Supplementary file 3
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	-
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.	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.	Table 1
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).	Supplementary file 3
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.	6-9
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	6-9
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	6-9
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	-
DISCUSSION			
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
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).	10
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	11
FUNDING			

PRISMA 2009 Checklist

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.	12

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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Job morale of physicians in low- and middle-income countries: a systematic literature review of qualitative studies

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Job morale of physicians in low- and middle-income countries: a systematic literature review of qualitative studies

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Abstract

Objectives: To systematically review the available literature on physicians' and dentists' experiences influencing job motivation, job satisfaction, burnout, well-being and symptoms of depression as indicators of job morale in low- and middle-income countries.

Design: The review was reported following PRISMA guidelines for studies evaluating outcomes of interest using qualitative methods. The framework method was used to analyse and integrate review findings.

Data sources: A primary search of electronic databases was performed by using a combination of search terms related to the following areas of interest: 'morale', 'physicians and dentists' and 'low- and middle-income countries'. A secondary search of the grey literature was conducted in addition to checking the reference list of included studies and review papers.

Results: Ten papers representing ten different studies and involving 581 participants across seven low- and middle-income countries met the inclusion criteria for the review. However, none of the studies focused on dentists' experiences was included. An analytical framework including four main categories was developed: work environment (physical and social); rewards (financial, non-financial and social respect); work content (workload, nature of work, job security/stability and safety); managerial context (staffing levels, protocols and guidelines consistency and political interference). The job morale of physicians working in low- and middle-income countries was mainly influenced by negative experiences. Increasing salaries, offering opportunities for career and professional development, improving the physical and social working environment, implementing clear professional guidelines and protocols and tackling healthcare staff shortage may influence physicians' job morale positively.

Conclusions: There were a limited number of studies and a great degree of heterogeneity of evidence. Further research is recommended to assist in scrutinizing context-specific issues and ways of addressing them to maximize their utility.

Keywords: Job morale, job motivation, job satisfaction, burnout, well-being and symptoms of depression, physicians, low- and middle-income countries

Strengths and limitations of this study:

1. Is novel in synthesising qualitative data from all available research on LMICs and provides conclusions based on findings from diverse countries, cultural backgrounds and clinical specialties.
2. Can inform the design of potential interventions and workforce policies and interventions in LMICs, therefore, their clinical utility can be advanced.
3. Limited availability and heterogeneity of studies allowed drawing only tentative conclusions.
4. Might be limited conceptually since a small number of studies were eligible.

BACKGROUND

The crisis in human resources for health has been defined as one of the most severe global health problems[1] and a major barrier to achieving universal health coverage and building a sustainable health system.[2] This crisis is especially acute for low- and middle-income countries (LMICs), many of which suffer from both a shortage and poor devotion of healthcare staff.[3]

Due to the far-reaching effect of job morale, interest in the issue among healthcare staff has increased considerably in recent decades.[4] Firstly, positive job morale is linked to a greater number of healthcare workers being recruited and retained[5], which appears to be essential in solving the pressing issue of healthcare staff maldistribution in LMICs.[2] Secondly, healthcare staff with positive job morale are more likely to provide higher quality care to patients.[6,7] Furthermore, improving staff well-being could save healthcare spending by decreasing financial investments in medical education[8] and lower spending on sickness absence and staff turnover.[9]

Despite its importance, there is no universally adopted definition for the concept of job morale nor an agreement on what it constitutes. This could partially explain why research studies aiming to measure job morale are somewhat sporadic.[10,11] Although several authors have tried to investigate job morale as a single entity[5,12-16], they ended up measuring its outcomes or explanatory variables.[4] Particularly, they referred to the significance of job motivation, job satisfaction, well-being, burnout and depressive symptoms. All these variables can be regarded as indicators of job morale.

Most studies on job morale in healthcare have focused on either nurses[10,11,17-21] or healthcare staff in general[5,13,22-25], although job morale has been shown to vary by professional group[22] and training status.[26-28] A limitation of the current academic literature is that relatively little is known about physicians' and dentists' experience of job morale in LMICs.[29-31] There is a lack of detailed description of contextual features and latent influences, which could be provided by qualitative research.[32] Identifying and dentists' experiences that influence job morale may help to create an analytical framework for analysing workforce policies and interventions with clinical and economic benefits.

Against this background, this review aimed to answer for the following research question: Which experiences influence job motivation, job satisfaction, burnout, well-being and symptoms of depression as indicators of job morale among physicians and dentists in LMICs?

METHODS

Search strategy

A systematic search of electronic databases and grey literature was performed according to the review protocol which has been developed and registered on PROSPERO (CRD42017082579). The following six electronic databases were searched: Scopus, Pubmed, PsycINFO, Embase, Web of Science, and The Cochrane Library up to May 2018. Search terms combined three overlapping areas with key words such as 'morale' OR 'job motivation' OR 'job satisfaction' OR 'well-being' OR 'burnout' OR 'depression symptoms' AND 'physicians' OR 'dentists' AND 'LMICs' (see supplementary file 1). Publication bias was reduced by searching conference papers and unpublished literature; hand

searches of key journals and reference lists were performed. This review was reported following PRISMA guidelines.[33]

Selection criteria

Studies were eligible if they assessed any one of the job morale constructs such as job motivation, job satisfaction, well-being, burnout and depression symptoms by using qualitative methods; if at least 50% of the sample were qualified physicians and/or dentists employed in public healthcare settings or if data about qualified physicians and/or dentists employed in public healthcare settings were provided separately; if at least 50% of the sample were from the LMICs as defined by World Bank criteria[34] or data from the country of interest was provided separately. Papers were excluded if more than 50% of the sample were not yet fully qualified physicians and (or) dentists who were undertaking training at the time of the study (medical students, residents, trainees, registrars, or junior physicians), and if they were not written using Latin alphabet, Russian or Kazakh. There was no restriction on the date the studies were conducted. All included articles were inspected independently by a second researcher (SZS) to verify inclusion.

Considering the definitional imprecision of job morale and the different dimensions used to characterize it, we employed an inclusive approach adopting of five indicators of interest, including job motivation, job satisfaction, well-being, burnout and depression symptoms.

Review strategy

Titles and abstracts of identified articles were exported into EndNote X8 and were screened by the first reviewer (AS) in order to exclude irrelevant studies and duplicates. Full-text articles were inspected again for the relevance according to the inclusion criteria. A random sample of 20% of the articles was independently screened by the second reviewer (SZS) at each stage. Discrepancies were resolved by involving a third reviewer (SP). Mismatches at the full-text screening stage were added up and inter-rater reliability calculated. The level of agreement between AS and SZS was 80%, between AS and SP was 75%.

Data extraction and quality assessment

Data from each paper, including study details, participant demographics and key results were extracted (see online supplementary file 2). In the case of mixed methods studies, only qualitative findings were extracted. The second reviewer (SZS) ensured the accuracy at this stage by extracting data from 20% of the included papers. One article written in Portuguese was extracted by involving a native speaker. Methodological quality was assessed using the Critical Appraisal Skills Programme (CASP) for qualitative studies.[35]

Data synthesis and risk of bias assessment

As part of the framework method[36], data from the results sections of included articles were coded in the reviewing software (EPPI-reviewer) and preliminary concepts describing physicians' experiences were defined inductively. Similar concepts were grouped into categories and sub-

categories independently by two reviewers (AS, SZS) and were discussed with other researchers (SP, FM, SN) to ensure the range and depth of the coding. The defined categories were then organized in the analytical framework. The framework matrix was used to provide a list of illustrative quotations. Additionally, vote counting[37] was used as a descriptive tool to indicate patterns across the included studies. We calculated the frequency of defined categories to present how prevalent each category was within the included studies.

Based on Critical Appraisal Skills Programme (CASP) studies were appraised in accordance with ten criteria, where the majority of studies were rated as appropriate with regard to aims, methodology and research findings (see supplementary file 3).

Patient and public involvement

The results of the analysis were solely based on the previously published literature, as this study did not involve patients or public.

RESULTS

The original search yielded 11,347 articles through database searching and 30 through other sources. 2021 articles were removed as duplicates and 9297 articles were excluded for not meeting the inclusion criteria. The full texts of the remaining 59 papers were examined, ten of which were included and represented ten unique studies. None of the studies focused on dentists' experiences met the inclusion criteria. The detailed selection process is presented in the PRISMA flow diagram (Figure 1).

Overview of included studies

Included studies were published between 2010 and 2017, in English, with the exception of one. They were conducted across seven LMICs, including four upper-middle income countries (South Africa, China, Brazil and Russia), two lower-income countries (Pakistan and Moldova) and one low income country (Uganda). With regards to the study design, four were mixed methods, and six were qualitative. The majority of studies were conducted in primary[31, 38-42] and secondary healthcare settings.[43,44] The included studies characteristics are summarised in Table 1.

Physicians' experiences influencing job morale

Identified concepts relevant to physicians' experiences of job morale were grouped into four main framework categories: work environment (I), rewards (II), work content (III) and managerial context (IV). The respective sub-categories within each of these categories are presented in the following section. Illustrative quotations within each category are provided in Table 2.

I. Work environment

Categories such as physical[31,38,40-46] and social[31,38,40-46] work environment appeared in all included studies.

1. *Physical*

Participants expressed that job morale was influenced considerably by working conditions, as a crucial source of job motivation[45] and satisfaction.[38,40] Few of them were "satisfied with physical environment"[31], but the majority of physicians felt "very disgusted"[46] and "very ashamed"[44] of the hospital infrastructure and constraints of resources, including lack of medicines and equipment deficiency.[31,38,40,44,46] Additionally, physicians noted that poor physical environment in the hospitals "annoyed patients"[31] and showed awareness that poor hygienic conditions were making patients "more sick".[46] The category addressing 'physical work environment' included residential living conditions for physicians who were based in more rural health settings.[31,40] They described their residences as "inhabitable" houses with poor "water and electricity connections"[31], that are "falling apart".[40] The limited options for schooling for their children[31,46] and underdeveloped road access[31] were frustrating and demotivating.

2. Social

Physicians described a sense of "collegiality" and "regular interactions" among staff in the healthcare facilities as a motivator[44] and perceived "poor interpersonal relations" as generally as demotivating.[45] Four main sub-categories contributed to defining the 'social environment' category: relationships with nurses and axillary staff[31,40, 41,44,45], relationships with other physicians[40,44]; relationships with patients[31,38,42-44] and relationships with managers/ supervisors.[31,40,43,44,46]

Participants questioned the professional "competency"[44] and "power"[41] of nurses and noticed that auxiliary staff were "unsupportive and apprehensive" and worked "often without a license to practice".[31]

Relationships with other fellow physicians were found to be "very stimulating"[44] not only within a hospital, but this view also emerged in case of "visiting consultants" in rural settings.[40]

There was inconsistency in experiences relating to physician-patient relationships. Some participants "seemed fairly happy"[44] and "expressed satisfaction with their current relationships".[38] However, others expressed the view that physicians "often had to see angry patients"[31], who "could not understand the physicians' work"[38] and tend to "bring all their problems [beyond health-related]".[42] It was emphasized that "difficult" patients are a significant cause of physicians' burnout.

Physicians indicated that relationships with managers/supervisors mainly depended on the provision of "adequate supervision"[46] with enough respect[40,44], support[44,46], recognition[31,44] and autonomy.[43,46] "Poor supervision"[45] demotivated physicians and "total control" by managers/supervisors contributed to their burnout.[43]

II. Rewards

Almost all papers discussed the importance of financial[31,38-40,43-46] and non-financial[31,38-40,44-46] rewards in medical practice.

1. Financial

The majority of physicians felt that their financial compensation was "not acceptable"[46], "low"[43] and "failed to reflect the job's value"[38], especially in rural areas[39,40] and considered their low salaries as a significant "demotivator".[45] However, some participants noted that medical practice has advantageous financial incentives, such as state pension, paid holidays and sabbatical leaves.[44]

2. Non-financial

Despite the importance of financial incentives, physicians highlighted that "money is not the most important factor for any clinician".[40] Career development appeared to be significant in determining physicians' job morale[31,40,44-46]. However, they showed the general sense of dissatisfaction "with overall process of promotions and transfers in the public health sector".[31] Conceptually, career development closely connected with the availability of learning, teaching and research opportunities[31,40,41,44,45] which were "necessary for the professional growth of physicians".[31] Moreover, social respect was also considered a non-financial incentive[31,38,39,42] which varied in terms of the professional reputation, gained by years of practice[39] and admiration of public servants, as a part of the community culture[31] and across different physicians' specialties.[42]

III. Work content

The overarching category of 'work content' sub-categories, such as workload, nature of work[31,39,42,44], job security[31,44,45], and physical and legal safety, was observed in almost all included papers as experiences influencing job morale.

1. Workload

The workload was mentioned broadly across all included studies[31,39,41-46]. Specifically, physicians complained about "too many working hours"[43] and the necessity to be "on the end of the phone".[44] Emergency duties and long working hours were especially discouraging for married female physicians and single mothers[44] because they worried that "their other responsibilities remain unattended".[31] Additional frustration was related to a large number of patients in-charge[39] and "fixed times for appointments".[42]

2. Nature of work

Despite the excessive workload, physicians have emphasized that the "serving" nature of medical profession[31,38,39,42,44] and the diversity[42,44] of work was extremely satisfying[38] and motivating.[45] Participants felt "a sense of achievement"[38] when they "get results and see patients feeling better".[42] They also expressed a "passion to serve their own communities".[31]

3. Job security/stability

Furthermore, some physicians reported that regardless of "whether you do it well or whether you don't do it so well"[44] working in public healthcare facilities "ensured job security for the rest of their careers"[31] and provided them with the "ability to support" their families.[45]

4. Physical and legal safety

The motivation experienced as a result of job security and stability was contrasted with the demotivation felt due to low levels of "personal safety"[45], especially for rural female physicians[31] and growing responsibility for patients, "in [a] legal sense".[44] However, it has been noted that medico-legal risk for physicians could be mitigated by interns, residents and registrars, who "shield" physicians from assuming complete medico-legal responsibility for all patients.[44]

IV. Managerial context

Experiences within the managerial aspect of medical practice were broadly discussed in terms of the staffing levels[31,38,40,42-44,46], protocols and guidelines consistency[31,41,44 46], and political interference[31,46].

1. Staffing levels

Low staffing levels of physicians, medical assistants and managers appeared to be a substantial cause of dissatisfaction[38,44] and contributed towards absenteeism[31,46] and retention problems.[44] Excessive workload caused by the deficit of physicians[46] and medical assistants[42] resulted in physicians being frequently "absent" from their duties[31] and "encourage[d] others to leave"[44] as well. Moreover, it seemed quite difficult to attract people to work in healthcare facilities, "despite the district posting the growing vacancies for multiple years, no applications had been received".[46] At the same time, physicians raised a concern that vacant posts may not be advertised properly.[40] The additional burden of paperwork[42,43] fell on physicians as a result of administrative staff deficiency[44], which could be alleviated by implementing electronic medical systems.[42]

2. Protocols and guidelines consistency

Physicians stated that job description, protocols and guidelines regulating the drug prescriptions[41] and performance appraisal[31] processes "needed to be revised to include the solutions to the current work place problems".[31] Nonetheless, the "growing requirements"[43] as a consequence of the increasing number of "regulations and rules"[44] were highlighted as a source of frustration [44] and burnout.[43]

3. Political interference

Certain physicians felt that managerial work context was possibly disrupted by "politically powerful persons"[31] interfering "in the decision making [process] at health facilities"[46] and their attempts to get a prioritized treatment for relatives.[31] Some participants believed that it was difficult to be promoted or transferred to a desired position "without links with any influential person"[31] and mentioned cases of "intimidation of health workers by local politicians".[46]

DISCUSSION

Main findings

The aim of our systematic review was to synthesize qualitative studies exploring physicians' experiences influencing job motivation, job satisfaction, burnout, well-being and symptoms of depression as indicators of job morale in LMICs.

The analytical framework that comprised four main categories of the work environment (I), rewards (II), work content (III) and managerial context (IV), was developed based on concepts that emerged from included studies. According to the vote counting results, workloads, working conditions and financial rewards were most frequently mentioned as influencing job morale and have been described in almost all studies. The majority of studies mentioned important experiences regarding staffing levels, career and professional development, relationships with nurses/auxiliary staff and managers/supervisors. Physicians from almost half of the included studies focused their attention on the nature of work, relationships with patients, protocols and guidelines consistency.

Physicians were quite consistent in defining whether their experiences were positive or negative. Experiences of excessive workload, low salaries, poor working and living conditions, fewer opportunities for career and professional development, staff shortage, tense physician-nurse and physician-manager/supervisor relationships, inconsistent professional guidelines and political interference were described as negative. Although physicians reported more negative experiences,

positive experiences were also underlined in terms of the serving nature of work, being given social respect, job stability and collegial relationships with other physicians.

Strengths and limitations

To our knowledge, this is the first systematic review of qualitative studies exploring physicians' experiences influencing job morale in LMICs. A further strength is that the review searched through papers from all LMICs and was not limited by physicians' specialty or to English language publications. This allowed for the inclusion of data from diverse countries, cultural backgrounds and clinical specialties. However, this approach presented some limitations. Firstly, although it was possible to extract general concepts in physicians' experiences, there is not enough evidence to assess whether these apply to all medical specialties and to other countries. There may be regional and clinical nuances that have not been identified in this review. Secondly, the prevalence of negative experiences over positive ones could be caused by a biased focus of studies on exploring difficulties. Thirdly, heterogeneity of studies due to imprecise definitions of the concept of 'job morale', made it challenging to provide firm conclusions. Although dentists were included in the literature search, none of the studies on dentists met the inclusion criteria; therefore, the results cannot be generalized to them.

Despite these limitations, the current review is a valuable collation of studies and specifies which experiences influence the job morale of physicians.

Comparison with literature from high-income countries

The present review supports qualitative findings from previous studies that have been conducted in high-income countries (HICs). It is particularly consistent with findings that serving and helping patients[13,47,48], working on diverse medical cases[13,22,48,49] and healthy relationships with other medical staff[13,14,48,50,51] constitute positive experiences and enhances workers' job morale. It supports evidence that excessive workload[16,22,49,50,52], insufficient staffing levels[13,16,51], administrative burden[16,22,50] and poor relationships and understanding between medical staff and managers[13,16,50] influence job morale negatively. In general, the tendency that professionals are more satisfied with the job content than with its structure and management can be observed not only among physicians. It applies also to employees of different occupations.

Contrary to our findings, healthcare staff employed in high-income countries indicated positive experiences regarding the consistency of existing protocols and guidelines[13,48], relationships with patients[47,50,51] and opportunities for continuing education.[53] The review also demonstrated some evidence regarding poor physical environment within healthcare facilities and constraints of resources, as has been recorded previously.[13,16,50] However, these findings should be interpreted with caution due to their context-dependency.[54] The context often includes increasing poverty[55], inequality[56] and collapsing healthcare systems.[57,58] The structural adjustment programmes promoted by international financial institutions and widely implemented across LMICs may influence the context.[59-62] In particular, the freezing of vacant posts and mandated ceilings on wages can be substantial barriers to recruiting and retaining healthcare staff. [56,63,64]

Quantitative findings from research on healthcare staff working in HICs helped to corroborate the results of this review. Single studies and reviews conducted in HICs also report associations between job morale and factors such as financial rewards[65-69], workload[4,65-67,69], recognition[13,23], support[16,23], autonomy[23,66,68], staffing levels[70], learning/teaching/research opportunities[65,70], workload[4,65-67,69], diversity of work[65,69], relationships with colleagues[23,65,66,68,70], job security and protocols and guidelines consistency.[16,68] This is consistent with what this review found in LMICs. Despite this consistency, it is not clear as to whether evidence from HICs can be simply transferred to LMICs and the other way around.

Implications for research and practice

By considering physicians' experiences across seven LMICs, the current review findings suggest that in order to advance current clinical practices by enhancing job morale, interventions and workforce policies should aim at increasing salaries, improving working and living conditions, tackling healthcare staff shortage and excessive workload and providing more opportunities for career and professional development. However, it is very difficult to achieve in resource-scarce settings. Finding the right balance between growing demands and limited resources is a key challenge. A critical approach to healthcare policy with a specific reference to ethics and a range of disciplines in social science are likely to be required to achieve and maintain that balance.[71,72] Also, findings suggest that professional guidelines, such as job descriptions, performance appraisal and protocols regulating drug prescriptions should be revised and effectively implemented. This may have a potential positive influence on physician-nurse relationships by maximizing role clarity.

There are at least four implications for future research. Firstly, in order to generate clear directives for improvements, future research studies should investigate whether job morale is perceived and valued differently by different medical specialties, and the research gap around dentists' experiences should be addressed. Secondly, the structural and social determinants of job morale of physicians in LMICs should be studied more systematically which requires funding for such research. Thirdly, contextual features should be considered as they might limit the applicability of findings from one healthcare setting and region to another. Fourthly, existing interventions and strategies should be assessed rigorously to define implementation requirements, cost-effectiveness and long-term changes.

CONCLUSIONS

The current review has identified that perceived threats to positive job morale of physicians in LMICs outweigh perceived incentives. It has highlighted several areas in which strategies aiming to improve physicians' job morale in in LMICs may be targeted. However, generalized conclusions are tentative because of the heterogeneity, limited number and inconsistent quality of the existing studies. Future research into physicians' experiences influencing job morale in LMICs should robustly examine context-specific issues and appropriate ways of addressing them, to ensure that the results can be translated into practical programmes for improving healthcare practice.

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Table 1. Characteristics of included studies

N	Authors, year	Country (income group)	Setting	Study design	Data collection	Sampling	Sample size	Gender	Age/average
1	Ashmore, 2013[44]	South Africa (upper-middle income)	Urban	Qualitative	Semi-structured interviews (primary and follow-ups)	Purposive	51 (28 dual practice doctors and 23 policymakers/managers)	64% - males 36% - females	29-63/not stated
2	Chen et al., 2017[38]	China (upper-middle income)	Rural	Qualitative	Focus groups	Not stated	39 doctors	59% - males 41% - females	Not stated/38-47 (in 5 different settings)
3	Feliciano et al., 2011[41]	Brazil (upper-middle income)	Urban	Qualitative	Semi-structured interviews	Purposive	24 doctors (12-pediatricians, 8 - GPs, psychiatrist, infectologists, obstetric gynecologist, anesthesiologist)	66.7% - males 33.3% - females	Not stated
4	Kotzee and Couper, 2006[40]	South Africa (upper- middle income)	Rural	Qualitative	Semi-structured interviews	Unclear – random or purposive (both stated)	10 non-specialist qualified doctors	60% - males 40% - females	25-36/not stated
5	Li et al., 2017[39]	China (upper-middle income)	Rural	Mixed methods	Semi-structured	Purposive	34 (21 village doctors and 13 managers)	76.5% - males	Not stated

					interviews			23.5% - females	
6	Liadova et al., 2017[43]	Russia (upper-middle income)	Urban	Mixed methods	In-depth interviews	Not stated	50 emergency doctors	60% - males 40% - females	25-50/not stated
7	Luboga et al., 2010[46]	Uganda (low income)	Not stated	Mixed methods	Focus groups	Stratified random	49 doctors	90% - males 10% - females	26-70/36
8	Malik et al., 2010[45]	Pakistan (lower-middle income)	Urban	Mixed methods	Open ended questionnaire	Stratified random	360 doctors	50% – males 50% - females	Not stated
9	Shah et al., 2016[31]	Pakistan (lower-middle income)	Rural	Qualitative	Semi-structured and in-depth interviews	Not stated	22 (16 doctors and 6 managers/administrators)	86.4% - males 13.6% - females	Not stated/38
10	Wallace and Brinister, 2010[42]	Moldova (lower-middle income)	Urban	Qualitative	In-depth interviews	Purposive	20 family physicians	100% - females	Not stated/ 42.4±7.2

Table 2. Illustrative quotations

Categories and sub-categories	Relevant studies (Vote-counting)	Supporting Quotations
I. Work environment		
1. Physical	**9 studies**[31,38,40-46]	
1.1. Working conditions	**8 studies**[31,38,40-42,44-46]	
1.1.2. Hospital infrastructure	**7 studies**[31,38,40,42,44-46]	*"Yes, it's [the hospital] not really good for really working…" (Kotzee and Couper, 2006)*
		"I think we make our patients more sick in the hospital - somebody can come with one disease and go away with five diseases. The infection control is very poor mainly because the facility is so bad. Sometimes you have no soap to wash the hands. These are the hopeless situations when you are working in such a place that you feel very disgusted when you look at the bed, you look at the mattress on bed and you look at the bed sheets the patient is sleeping in."(Luboga et al., 2011)
		"Okay, you just go and look at the lavatories, especially in the public areas . . . That's the consumer, but you know there are ways you can deal with that, and one of the ways to deal is that you have some sort of attendant, and constant cleaning of the lavatories. I mean a lot of patients come to me and . . . refuse to go to the lavatory because they say it's so filthy . . . And that makes one feel very ashamed . . . Telephones get stolen . . . bed linen gets stolen, and you're working in that environment . . . where there isn't a blanket to put on the patient, there isn't a pillow for her head and it' s because things have been nicked. So and all of that you know is difficult." (Ashmore, 2013)
		"When you are engaged in work, it is difficult to survive in summer without air conditioning, because it is extremely hot in the summer in Guangxi, with peak temperatures even up to 40◦C sometimes." (Chen et al.)
1.1.3. Availability of resources	**7 studies**[31,38,41,42,44-46]	*"Okay firstly… our casualty… there is virtually nothing you know related to emergency…if you want to attend to an emergency patient there isn't much you can use except maybe things like … IV lines… may be a drip stand; since I came here we didn't have simple things like glucometers. So every time a patient comes and you want to do the glucose level you have wait for the lab to do it. Recently they have introduced some glucometers but they wok only for a few months… maybe there is one BP machine, which is used by two or three different wards. They have to wait until the other ward is done so they can go and borrow so it is – yeah – it is a problem" (Kotzee and Couper, 2006)*
		"Then another thing is equipment. We are doing operations but we do not have some equipment like theatre lights. After complaining we were given a tube for operation, but even in the whole ward we do not have enough lights. And can you imagine the whole of this hospital with only two oxygen concentrators? At least every ward should be having one or two. We have only one for the paediatric ward after complaining so long. So if you are using it on the child, and someone else needs it you either remove the child to die or

		you wait for the other to die." (Luboga et al., 2011)
		"…you are in the teaching facility. I mean you would love to have all the modern things like the books the overseas people are talking about and you would love to impart that knowledge onto your students. But we don't have the equipment, I mean we have but you will find that they are outdated…" (Ashmore, 2013)
1.2. Living conditions	**3 studies**[31,40,46]	*"… the other most important thing is good accommodation; but anybody is going to struggle with accommodation they are not going to enjoy working there… you don't want to wake up in the morning and know that you are going to share your bathroom with four other people and staff like that…" (Kotzee and Couper, 2006)*
		"…I joined BHU because I hoped to get a house to live; but the BHU residence is not worth living…" (Shah et al., 2006)
		"Who will w willing to work in a BHU which doesn't even have road access? I have to walk two kilometres daily to reach the main road leading to the BHU where I work." (Shah et al., 2006)
2. Social	**9 studies**[31,38,40-46]	
2.1. Relationships with nurses and auxiliary staff	**5 studies**[31,40,41,44,45]	*"There is a difficulty I terms of the nursing staff and I don't think when I was a registrar it was better. I think the staff were trained differently, they were trained in general nursing and then midwifery so the midwives instead of doing 3 months or whatever it is in midwifery and a general training so they're less competent… the doctors picking up a lot of duties which the nurses should do automatically and they don't…Which makes it far less satisfying for the doctor, and far more stressful because… you can't trust the instructions are definitely going to be carried out." (Ashmore, 2013)*
		"…it was shock to me, because in training people did not exist the nurse with as much power as she has today in the family health unit, it was a very big shock when I arrived... I see nurse being a doctor, I was horrified, so I asked myself: what I am doing here, what is left for me?" (Feliciano et al., 2011)
2.2. Relationships with other physicians	**2 studies**[40,44]	*"… it is very stimulating to work in a collegial and academic environment where you're going to, you know, X-ray meetings and you're on wards rounds, with consultants that are giving their different inputs…" (Ashmore, 2013)*
		"…what has helped keep me stimulated is even though we are in rural area there are so many visiting consultants coming from Wits and Garankuwa and Polokwane… Just knowing that there's people coming every month or so that are interested in what you're doing: that can support you and you can always ask them; it definitely improves the quality of your work and the job satisfaction and you feel less out of touch and that you're doing the right thing, sometimes you need a bit of reassurance that you are doing the right things

		under the circumstances." (Kotzee and Couper, 2006)
2.3. Relationships with patients	**5 studies**[31,38,42-44]	*"…some of my patients do not want to be informed or listen to me." (Wallace and Brinister, 2010)*
		"Most patients with hypertension do not understand it. It is hard to convince them to come back to the clinic." Wallace and Brinister, 2010
		"Sometimes they cursed and shouted at us. Even worse, some patients doubted the value of our medical services," (Chen et al., 2017)
2.4. Relationships with managers/supervisors	**5 studies**[31,40,43,44,46]	
2.4.1 Respect	**2 studies**[40,44]	*"I don't think… [the administration]" quite realise the human resources they have available to them. I think sometimes they don't actually realise they're working with professionals, and they don't treat us as such…" (Ashmore, 2013)*
2.4.2. Support	**2 studies**[44,46]	*"You feel that you're being hamstrung at every turn by the state you're trying to do. They don't make an effort to find out what's required by people who are actually doing the job…" (Ashmore. 2013)*
2.4.3. Recognition	**2 studies**[31,44]	*"…In many other organizations, people with our skills and experience would be very highly valued and perceived as such. But you know here we don't get perceived or treated like that at all… " (Ashmore. 2013)*
2.4.4. Autonomy	**2 studies**[43,46]	*"…management gave appropriate autonomy to staff, while still providing adequate supervision." (Luboga et al., 2011)*
II. Rewards		
1. Financial	**8 studies**[31,38-40,43-46]	*"I am really willing to be a village doctor; it's a good job, you know. However, the income is too low to subsist on. I must earn what I need for living. " (Li et al., 2017)*
		"Now there are more and more people breeding silkworms. They even earn more than us (village doctors). " (Li et al., 2017)
		"Our main purpose (to work in BHUs) is salary; which does not match with our qualifications…" (Shah et al., 2006)
		"I earned below 2000 RMB (USD 303) per month, and sometimes I work more than 14 hours in one day." (Chen et al., 2017)
2. Non-financial		
2.1. Career development	**5 studies**[31,40,44-46]	*". . . when you go into a job you need something that's got a career path, and there aren't career paths [in public]. There's a few, a small little cadre at the top, a small group of people who get to principal or chief or specialist, and the rest of the people can spend their entire career as a senior specialist no matter how brilliant they are and much of a contribution they make." (Ashmore, 2013)*
2.2. Professional development		
2.2.1.Learning opportunities	**5 studies**[31,40,41,44,45]	*"…one of the things that is really distressing me for a few years, because [Family*

		Healthcare Strategy] stopped doing the education work…" (translation) (Feliciano et al., 2011)
		"Job satisfaction includes professional development, and there is no provision to allow us to further our qualification." (Luboga et al., 2010)
2.2.2.Teaching/research opportunities	**1 study**[44]	*"… it is good and interesting to have students around you. So the teaching component of it I've always found just varies your day. It adds a little bit of an extra dynamic to what your routines are, so it can be quite fan and it's… a little bit challenging, and it just…adds spice to all your humdrum things." (Ashmore, 2013)*
3. Social respect	**4 studies**[31,38,39,42]	*"Although there have been many changes along with rapid development, patients still looks for me when they get sick because of my reputation. All their family members know me and come to me for help." (Li et al., 2017)*
		"People hardly knew me when I just came back home for the job in 1998. At that time, patients didn't know of my abilities. Everything was difficult. It got better several years later, as I worked longer." (Li et al., 2017)
		"Wherever we go, people respect us, just like we have some guarantee. We're certainly satisfied by this." (Li et al., 2017)
		"People don't consider a family physician important in their lives. They don't appreciate their family physician, but they do specialists."(Wallace and Brinister, 2008)
		"Most of the patients here are local farmers. They are honest and full of integrity. They followed our advice and showed their appreciation to us." (Chen et al., 2017)
III. Work content		
1. Workload	**8 studies**[31,39,41-46]	*"Too much workload now. I am in charge of only one village, with about 1500 residents. However, thy live dispersedly. One is here, while another is quite far away. I run around all day long, but still can only offer public health services for several households." (Li et al., 2017)*
		"There is no time for my family and children." (Wallace and Brinister, 2008)
		"…the number of patients and the little time for consultation, so I have no conditions…" (translation) (Feliciano et al., 2011)
2. Nature of work	**5 studies**[31,38,39,42,44]	
2.1. Serving people	**4 studies**[31,38,39,42,44]	*"…you feel like you're making a tangible difference to people's lives" (Ashmore, 2013)*
		"I like the work because you get to know entire families. My patients are like my extended family. When I get results, it makes me very happy." (Wallace an Brinister, 2010)
		"When my patients are cured after treatment, I feel so fulfilled and delighted. One patient still maintains contact with me. Our friendship began when he came to me with appendicitis. He has been well for five years now." (Chen et al., 2017)
2.2. Diversity	**2 studies**[42,44]	*"You never know what the next case is. [Family medicine] forces you to use all the knowledge you learned at university" (Wallace an Brinister, 2010)*

3. Job security/stability	**3 studies**[31,44,45]	*"…the public sector is rick solid, so you basically have to do something bad to get fired. So there is a high degree of certainty in your job…" (Ashmore, 2013)*
3.1.Safety	**3 studies**[31,44,45]	
3.2.Physical	**2 studies**[31,45]	*"Female physicians usually do not like to work in BHUs. The reason may be the lack of security…" (Shah et al., 2006)*
3.3.Legal	**1 study**[44]	*"In state you've got three levels of people below you, so if you're…a state consultant, yes, you've got different stresses, you've got to give a lecture and you've got to give that, but I'm saying that's a different type of stress. But on a clinical responsibility level, between you and the patients, there is an intern and registrar… So the family's complaining… and that comes all the way through those two people before it gets you. So that's like you're three degrees removed." (Ashmore, 2013)*
IV. Managerial context		
1. Staffing levels	**7 studies**[31,38,40,42-44,46]	
1.1. Doctors' and assistants' deficiency	**5 studies**[31,38,40,44,46]	*"…If you fell you can't go away because there aren't people to cover your work then it creates tension in your ability to care for people. So resources around you do matter…The deficit falls on you to work hard." (Ashmore, 2013)*
		"There is only one medical assistant per family physician. That's just not enough." (Wallace and Brinister, 2010)
		"We lack the doctors we need to provide adequate services. The shortage has pushed us to work longer. If more doctors could join us, that may ease our burdens." (Chen et al., 2017)
1.1.1. Retention	**1 study**[44]	*"I mean… in our department…to retain people is quite difficult, people work for a year or two then they go to private or they go off somewhere else. And for those posts to be filled again, it takes a lot of time… and in between people are frustrated." (Ashmore, 2013)*
1.1.2. Absenteeism	**2 studies**[31,46]	*"…30% posts of physicians in the province are filled and most of them do no attend to their duties regularly." (Shah et al., 2006)*
1.1.3. Recruitment	**2 studies**[40,46]	*"…They [managers] don't advertise posts that are available, they'll tell you in human resources that the posts are there but even if you qualify for the posts they tell that because it hasn't been advertised, you can't get into." (Kotzee and Couper, 2006)*
1.2. Administrative staff deficiency	**3 studies**[42,44]	*"…within every department there are the obvious managerial requirements that some people take up. So somebody might do the roster allocation, somebody might do the leave allocation, somebody might do the budgeting, all that kind of stuff within any department. And that is left mostly to the members of the department to do even though we have very little training or no training whatsoever in management." (Ashmore, 2013)*
		"There's lots of paperwork, but it is easier now with the electronic medical record." (Wallace and Brinister, 2010)

2. Protocols and guidelines consistency	**4 studies**[31,41,44,46]	*"…if the performance reports are not analysed properly, then no actions are expected. The performance appraisals currently in practice must be updated. Job descriptions do not exist in health department; older version of the documents needs to be updated." (Shah et al., 2006)*
		"I think, medication prescription should be at the discretion of the physician…"(translation) (Feliciano et al., 2011)
3. Political interference	**2 studies**[31,46]	*"…Every patient is equal to us and we cannot give preference to a relative of a member of any political party. They try to influence us in several ways or they often threaten us to get us transferred to a remote BHU [Basic Healthcare Unit]" (Shah et al., 2016)*
		"We get political interference under decentralization…They look at negative aspects of our work and comment badly, coming anytime even after midnight to our homes. This is a member of parliament…" (Luboga et al., 2011)

References

1. Aluttis C, Bishaw T, Frank M. The workforce for health in a globalized context – global shortages and international migration2014.
2. WHO. Global strategy on Human Resources for health: Workforce 2030 Geneva, Switzerland: World Health Organisation; 2016 [Available from: http://www.who.int/hrh/resources/pub_globstrathrh-2030/en/.
3. WHO. The world health report 2006 - working together for health Geneva, Switzerland: World Health Organisation 2006 [Available from: http://www.who.int/whr/2006/en/.
4. Grieve S. Measuring morale - Does practice area deprivation affect doctors' well-being?1997.
5. Reininghaus U, Priebe S. Assessing morale in community mental health professionals: a pooled analysis of data from four European countries. *Social psychiatry and psychiatric epidemiology* 2007;42(3):237-43. doi: 10.1007/s00127-007-0154-7 [published Online First: 2007/02/03]
6. Department of Health. NHS Health and Wellbeing: Final Report.: Department of Health 2009 [Available from: http://webarchive.nationalarchives.gov.uk/20130124052412/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_108907.pdf.
7. Hall LH, Johnson J, Watt I, et al. Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. *PloS one* 2016;11(7):e0159015. doi: 10.1371/journal.pone.0159015
8. Mills EJ, Kanters S, Hagopian A, et al. The financial cost of doctors emigrating from sub-Saharan Africa: human capital analysis. *BMJ* 2011;343:d7031.
9. Chaudhury NHJ. Ghost Doctors: Absenteeism in Bangladeshi Health Facilities: The World Bank 2003.
10. McFadzean F, McFadzean E. Riding the emotional roller-coaster: a framework for improving nursing morale. *J Health Organ Manag* 2005;19(4-5):318-39. doi: 10.1108/14777260510615378 [published Online First: 2005/10/07]
11. Day G, Minichiello V, Madison J. Nursing morale: what does the literature reveal? 2006;30:516-24.
12. K. Johnsrud L. Measuring the Quality of Faculty and Administrative Worklife: Implications for College and University Campuses2002.
13. Totman J, Hundt G, Wearn E, et al. Factors affecting staff morale on inpatient mental health wards in England: A qualitative investigation2011.
14. Johnson S, Wood S, Paul M, et al. Inpatient Mental Health Staff Morale: a National Investigation2011.
15. Gulliver P, Towell D, Peck E. Staff morale in the merger of mental health and social care organizations in England. J Psychiatr Ment Health Nurs. England2003:101-7.
16. Cahill J, Gilbody S, Barkham M, et al. Systematic review of staff morale in inpatient units in mental health settings. 2018
17. Callaghan M. Nursing morale: what is it like and why? Journal of advanced nursing. England2003:82-9.
18. Cox KB. The effects of unit morale and interpersonal relations on conflict in the nursing unit. Journal of advanced nursing. England2001:17-25.

19. Haw MA, Claus EG, Durbin-Lafferty E, et al. [Improving job morale of nurses despite insurance cost control. 1: Organization assessment]. *Pflege* 2003;16(2):103-10. doi: 10.1024/1012-5302.16.2.103 [published Online First: 2003/05/22]
20. Yang KP, Huang CK. The effects of staff nurses' morale on patient satisfaction. *The journal of nursing research : JNR* 2005;13(2):141-52. [published Online First: 2005/06/30]
21. Hagopian A, Zuyderduin A, Kyobutungi N, et al. Job satisfaction and morale in the Ugandan health workforce. *Health Aff (Millwood)* 2009;28(5):w863-75. doi: 10.1377/hlthaff.28.5.w863 [published Online First: 2009/08/08]
22. Priebe S, Fakhoury WK, Hoffmann K, et al. Morale and job perception of community mental health professionals in Berlin and London. *Social psychiatry and psychiatric epidemiology* 2005;40(3):223-32. doi: 10.1007/s00127-005-0880-7 [published Online First: 2005/03/03]
23. Johnson S, Osborn D, Araya R, et al. Morale in the English mental health workforce: Questionnaire survey2012.
24. Bowers L, Allan T, Simpson A, et al. Morale is high in acute inpatient psychiatry. *Social psychiatry and psychiatric epidemiology* 2009;44(1):39-46. doi: 10.1007/s00127-008-0396-z [published Online First: 2008/07/08]
25. Abraham LJ, Thom O, Greenslade JH, et al. Morale, stress and coping strategies of staff working in the emergency department: A comparison of two different-sized departments. *Emergency medicine Australasia : EMA* 2018;30(3):375-81. doi: 10.1111/1742-6723.12895 [published Online First: 2018/01/25]
26. NHS Staff Surveys [Available from: http://www.nhsstaffsurveys.com/Page/1064/Latest-Results/2017-Results/.
27. Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med* 2014;89(3):443-51. doi: 10.1097/acm.0000000000000134 [published Online First: 2014/01/23]
28. Panagopoulou E, Montgomery A, Benos A. Burnout in internal medicine physicians: Differences between residents and specialists. Eur J Intern Med. Netherlands 2006:195-200.
29. Chopra M, Munro S, Lavis JN, et al. Effects of policy options for human resources for health: an analysis of systematic reviews. Lancet. England2008:668-74.
30. Mathauer I, Imhoff I. Health worker motivation in Africa: The role of non-financial incentives and human resource management tools. *Human resources for health* 2006;4 doi: 10.1186/1478-4491-4-24
31. Shah SM. Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakistan. 2016;5(8):467-75. doi:10.15171/ijhpm.2016.38
32. Victora CG, Habicht J-P, Bryce J. Evidence-Based Public Health: Moving Beyond Randomized Trials. *American journal of public health* 2004;94(3):400-05.
33. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6(7):e1000097.
34. World Bank Open Data 2018 [Available from: https://data.worldbank.org.
35. Critical Appraisal Skills Programme. CASP Qualitative 2018 [Available from: https://casp-uk.net/wp-content/uploads/2018/01/CASP-Qualitative-Checklist.pdf.

36. Gale NK, Heath G, Cameron E, et al. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol* 2013;13:117.
37. Popay J, Roberts H, Sowden A, et al. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC Methods Programme2006.
38. Chen Q, Yang L, Feng Q, et al. Job Satisfaction Analysis in Rural China: A Qualitative Study of Doctors in a Township Hospital. *Scientifica* 2017;2017:1964087. doi: 10.1155/2017/1964087 [published Online First: 2017/04/15]
39. Li T, Lei T, Sun F, et al. Determinants of village doctors' job satisfaction under China's health sector reform: a cross-sectional mixed methods study. *International journal for equity in health* 2017;16(1):64. doi: 10.1186/s12939-017-0560-8 [published Online First: 2017/04/20]
40. Kotzee TJ, Couper ID. What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? *Rural and remote health* 2006;6(3):581. [published Online First: 2006/09/13]
41. Feliciano KVO, Kovacs MH, Sarinho SW. Burnout among Family Healthcare physicians: The challenge of transformation in the workplace. *Ciencia e Saude Coletiva* 2011;16(8):3373-82. doi: 10.1590/S1413-81232011000900004
42. Wallace LS, Brinister I. Women family physicians' personal experiences in the republic of Moldova. *Journal of the American Board of Family Medicine* 2010;23(6):783-89. doi: 10.3122/jabfm.2010.06.100089
43. Liadova AV, Korkiya ED, Mamedov AK, et al. The burnout among emergency physicians: Evidence from Russia (sociological study). *Man in India* 2017;97(15):495-507.
44. Ashmore J. 'Going private': A qualitative comparison of medical specialists' job satisfaction in the public and private sectors of South Africa. 2013;11:1.
45. Malik AA, Yamamoto SS, Souares A, et al. Motivational determinants among physicians in Lahore, Pakistan. *BMC health services research* 2010;10:201. doi: 10.1186/1472-6963-10-201 [published Online First: 2010/07/14]
46. Luboga S, Hagopian A, Ndiku J, et al. Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals. *The International journal of health planning and management* 2011;26(1):2-17. doi: 10.1002/hpm.1036 [published Online First: 2011/01/01]
47. Zwack J, Schweitzer J. If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians. *Acad Med* 2013;88(3):382-9. doi: 10.1097/ACM.0b013e318281696b [published Online First: 2013/01/26]
48. Sofia Kjellström and Gunilla Avby and Kristina Areskoug-Josefsson and Boel Andersson Gäre and Monica Andersson B. Work motivation among healthcare professionals: A study of well-functioning primary healthcare centers in Sweden. *Journal of Health Organization and Management* 2017;31(4):487-502. doi: 10.1108/JHOM-04-2017-0074
49. Agana DF, Porter M, Hatch R, et al. Job Satisfaction Among Academic Family Physicians. *Fam Med* 2017;49(8):622-25. [published Online First: 2017/09/28]
50. Reid Y, Johnson S, Morant N, et al. Explanations for stress and satisfaction in mental health professionals: a qualitative study. *Social psychiatry and psychiatric epidemiology* 1999;34(6):301-8. [published Online First: 1999/07/28]

51. Hall L, Johnson J, Heyhoe J, et al. Strategies to improve General Practitioner wellbeing: A focus group study. 2017;35
52. Kruse GR, Chapula BT, Ikeda S, et al. Burnout and use of HIV services among health care workers in Lusaka District, Zambia: a cross-sectional study. *Human resources for health* 2009;7:55-55. doi: 10.1186/1478-4491-7-55
53. Priebe S, K H Fakhoury W, Hoffmann K-M, et al. Morale and job perception of community mental health professionals in Berlin and London2005.
54. Willis-Shattuck M, Bidwell P, Thomas S, et al. Motivation and retention of health workers in developing countries: a systematic review. *BMC health services research* 2008;8:247. doi: 10.1186/1472-6963-8-247 [published Online First: 2008/12/06]
55. Mohindra KS. Healthy public policy in poor countries: tackling macro-economic policies. Health Promot Int. England2007:163-9.
56. Kentikelenis AE. Structural adjustment and health: A conceptual framework and evidence on pathways. Soc Sci Med. England: 2017 Elsevier Ltd 2017:296-305.
57. Nolan T, Angos P, Cunha AJ, et al. Quality of hospital care for seriously ill children in less-developed countries. Lancet. England2001:106-10.
58. Travis P, Bennett S, Haines A, et al. Overcoming health-systems constraints to achieve the Millennium Development Goals. Lancet. England2004:900-6.
59. Beste J, Pfeiffer J. Mozambique's Debt and the International Monetary Fund's Influence on Poverty, Education, and Health. Int J Health Serv. United States: The Author(s) 2016. 2016:366-81.
60. Laurell AC. Three decades of neoliberalism in Mexico: the destruction of society. Int J Health Serv. United States: The Author(s) 2015 Reprints and permissions:]br]sagepub.co.uk/journalsPermissions.nav. 2015:246-64.
61. Coburn C, Restivo M, Shandra JM. The African Development Bank and women's health: a cross-national analysis of structural adjustment and maternal mortality. Soc Sci Res. United States: 2014 Elsevier Inc 2015:307-21.
62. Hossen MA, Westhues A. The medicine that might kill the patient: Structural Adjustment and its impacts on health care in Bangladesh. *Soc Work Public Health* 2012;27(3):213-28. doi: 10.1080/19371910903126754 [published Online First: 2012/04/11]
63. Kentikelenis AE, Stubbs TH, King LP. Structural adjustment and public spending on health: evidence from IMF programs in low-income countries. Soc Sci Med. England: 2014 Elsevier Ltd 2015:169-76.
64. Thomson M, Kentikelenis A, Stubbs T. Structural adjustment programmes adversely affect vulnerable populations: a systematic-narrative review of their effect on child and maternal health. *Public health reviews* 2017;38:13-13. doi: 10.1186/s40985-017-0059-2
65. Van Ham I, Verhoeven AA, Groenier KH, et al. Job satisfaction among general practitioners: a systematic literature review. Eur J Gen Pract. England2006:174-80.
66. Scheurer D, McKean S, Miller J, et al. U.S. physician satisfaction: a systematic review. *J Hosp Med* 2009;4(9):560-8. doi: 10.1002/jhm.496 [published Online First: 2009/12/17]
67. Tomljenovic M, Kolaric B, Stajduhar D, et al. Stress, depression and burnout among hospital physicians in Rijeka, Croatia. *Psychiatria Danubina* 2014;26 Suppl 3:450-8. [published Online First: 2014/12/30]

68. Goetz K, Jossen M, Szecsenyi J, et al. Job satisfaction of primary care physicians in Switzerland: an observational study. Family practice. England: The Author 2016. Published by Oxford University Press For permissions, please e-mail: journals.permissions@oup.com. 2016:498-503.
69. Joyce C, Wang WC. Job satisfaction among Australian doctors: the use of latent class analysis. J Health Serv Res Policy. England: The Author(s) 2015. 2015:224-30.
70. Janus K, Amelung VE, Gaitanides M, et al. German physicians "on strike"--shedding light on the roots of physician dissatisfaction. Health Policy. Ireland2007:357-65.
71. McCoy D. Critical Global Health: Responding to Poverty, Inequality and Climate Change Comment on "Politics, Power, Poverty and Global Health: Systems and Frames". *Int J Health Policy Manag* 2017;6(9):539-41.
72. Schrecker T. Interrogating scarcity: how to think about 'resource-scarce settings'. *Health Policy Plan* 2013;28(4):400-9.

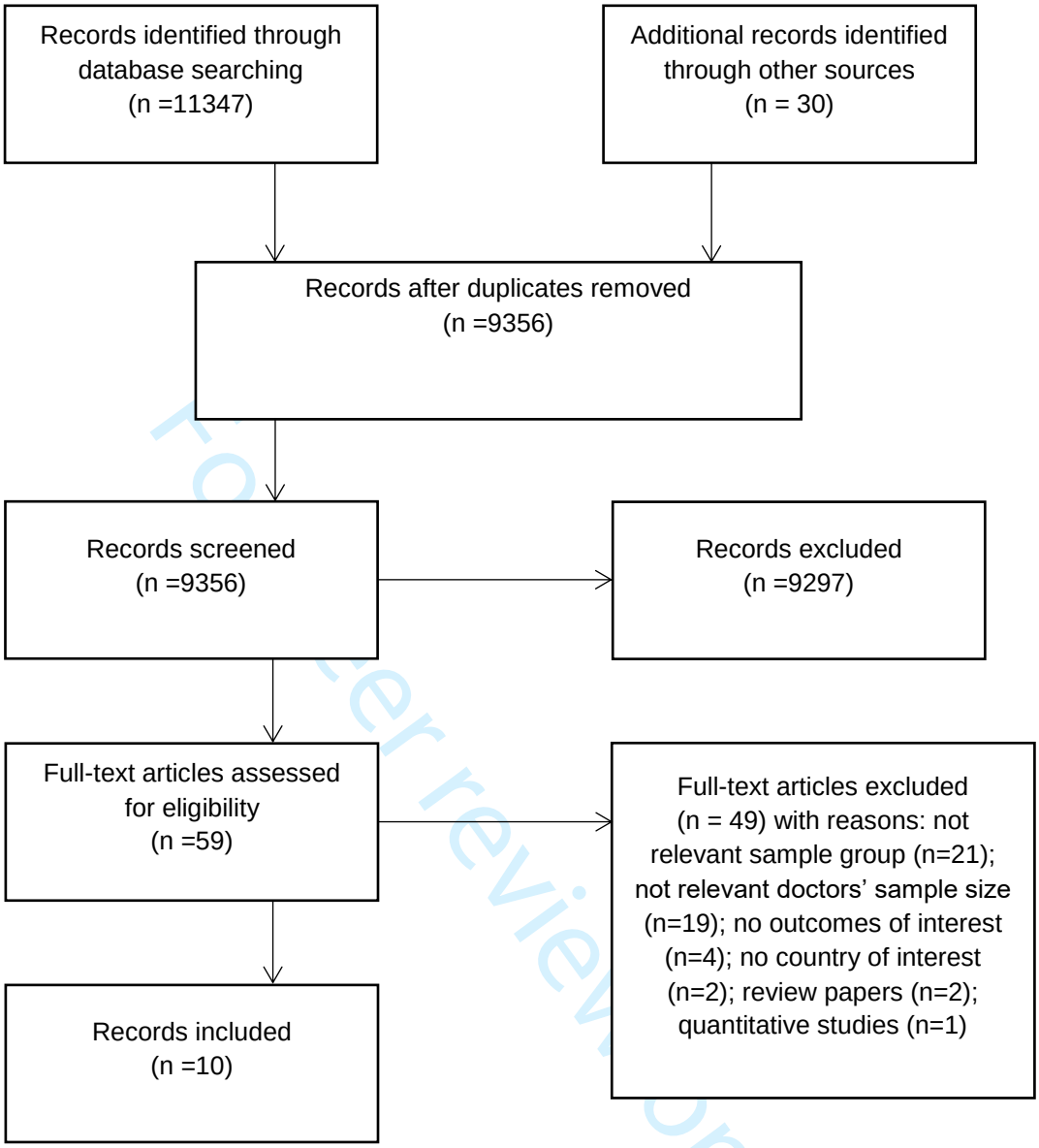

Figure 1. PRISMA flow diagram

Supplementary file 1. Search terms.

morale OR well-being OR "well being" OR wellbeing OR "job satisfaction" OR burnout OR burn-out OR "burn out" OR "job motivation" OR resilience OR depression OR "depression symptoms" OR "moral distress" OR "psychological distress" OR "depressive symptoms"

AND

"health workers" OR "healthcare professionals" OR "medical doctors" OR physicians OR "medical specialists" OR clinicians OR "clinical professionals" OR "medical professionals" OR "healthcare specialists" OR audiologists OR allergists OR andrologists OR anaesthesiologists OR cardiologists OR dentists OR dermatologists OR endocrinologists OR epidemiologists OR "family doctors" OR gastroenterologists OR gynaecologists OR haematologists OR hepatologists OR immunologists OR "infectious disease specialists" OR "internal medicine specialists" OR internists OR neonatologist OR nephrologists OR neurologist OR neurosurgeons OR obstetricians OR oncologists OR ophthalmologists OR "orthopaedic surgeons" OR "ENT specialists" OR otolaryngologists OR perinatologists OR "paleo pathologists" OR parasitologists OR pathologists OR paediatricians OR physiologists OR physiatrists OR podiatrists OR psychiatrists OR pulmonologists OR radiologists OR rheumatologists OR surgeons OR urologists OR "emergency doctors"

AND

"low- and middle-income countries" OR LMICs OR "low and middle income countries" OR Afghanistan OR "Gambia The" OR Niger OR Benin OR Guinea OR Rwanda OR "Burkina Faso" OR Guniea-Bisau OR "Sierra Leone" OR Burundi OR Haiti OR Somalia OR Cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR Liberia OR Tanzania OR Chad OR Madagascar OR Togo OR Comoros OR Malawi OR Uganda OR "Congo, Dem. Rep." OR Mali OR Zimbabwe OR Eritrea OR Mozambique OR Ethiopia OR Nepal OR Armenia OR Indonesia OR Samoa OR Bangladesh OR Kenya OR "Sao Tome and Principe" OR Bhutan OR Kiribati OR Senegal OR Bolivia OR Kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR Cameroon OR "Lao PDR" OR Sudan OR "Congo, Rep." OR Lesotho OR Swaziland OR "Cote divoire" OR Mauritania OR "Syrian Arab Republic" OR Djibouti OR "Micronesia, Fed. Sts." OR Tajikistan OR "Egypt, Arab Rep." OR Moldova OR Timor-Leste OR "El Salvador" OR Morocco OR Ukraine OR Georgia OR Myanmar OR Uzbekistan OR Ghana OR Nicaragua OR Vanuatu OR Guatemala OR Nigeria OR Vietnam OR Guyana OR Pakistan OR "West Bank and Gaza" OR Honduras OR "Papua New Guinea" OR "Yemen, Rep." OR India OR Philippines OR Zambia OR Albania OR Fiji OR Namibia OR Algeria OR Gabon OR Palau OR "American Samoa" OR Grenada OR Panama OR Angola OR "Iran, Islamic Rep." OR Paraguay OR Azerbaijan OR Iraq OR Peru OR Belarus OR Jamaica OR Romania OR Belize OR Jordan OR Serbia OR "Bosnia and Herzegovina" OR Kazakhstan OR "South Africa" OR Botswana OR Lebanon OR "St. Lucia" OR Brazil OR Libya OR "St. Vincent and the Grenadines" OR Bulgaria OR "Macedonia, FYR" OR Suriname OR China OR Malaysia OR Thailand OR Colombia OR Maldives OR Tonga OR "Costa Rica" OR "Marshall Islands" OR Tunisia OR Cuba OR Mauritius OR Turkey OR Dominica OR Mexico OR Turkmenistan OR "Dominican Republic" OR Mongolia OR Tuvalu Ecuador OR Montenegro

Full electronic search strategy for one database (Pubmed)

#4 Add Search ((((morale[Title/Abstract] OR well-being[Title/Abstract] OR "well being"[Title/Abstract] OR wellbeing[Title/Abstract] OR "job satisfaction"[Title/Abstract] OR burnout[Title/Abstract] OR burn-out[Title/Abstract] OR "burn out"[Title/Abstract] OR "job motivation"[Title/Abstract] OR resilience[Title/Abstract] OR depression[Title/Abstract] OR "depression symptoms"[Title/Abstract] OR "moral distress"[Title/Abstract] OR "psychological distress"[Title/Abstract] OR "depressive symptoms"[Title/Abstract]))) AND (("health workers"[Title/Abstract] OR "healthcare professionals"[Title/Abstract] OR "medical doctors"[Title/Abstract] OR physicians[Title/Abstract] OR "medical specialists"[Title/Abstract] OR clinicians[Title/Abstract] OR "clinical professionals"[Title/Abstract] OR "medical professionals"[Title/Abstract] OR "healthcare specialists"[Title/Abstract] OR audiologists[Title/Abstract] OR allergists[Title/Abstract] OR andrologists [Title/Abstract] OR anaesthesiologists [Title/Abstract] OR cardiologists[Title/Abstract] OR dentists[Title/Abstract] OR dermatologists[Title/Abstract] OR endocrinologists[Title/Abstract] OR epidemiologists[Title/Abstract] OR "family doctors"[Title/Abstract] OR gastroenterologists[Title/Abstract] OR gynaecologists[Title/Abstract] OR haematologists[Title/Abstract] OR hepatologists[Title/Abstract] OR immunologists[Title/Abstract] OR "infectious disease specialists"[Title/Abstract] OR "internal medicine specialists"[Title/Abstract] OR internists[Title/Abstract] OR neonatologist[Title/Abstract] OR nephrologists[Title/Abstract] OR neurologist[Title/Abstract] OR neurosurgeons[Title/Abstract] OR obstetricians[Title/Abstract] OR oncologists[Title/Abstract] OR ophthalmologists[Title/Abstract] OR "orthopaedic surgeons"[Title/Abstract] OR "ENT specialists"[Title/Abstract] OR otolaryngologists[Title/Abstract] OR perinatologists[Title/Abstract] OR "paleo pathologists"[Title/Abstract] OR parasitologists[Title/Abstract] OR pathologists[Title/Abstract] OR paediatricians[Title/Abstract] OR physiologists[Title/Abstract] OR physiatrists[Title/Abstract] OR podiatrists[Title/Abstract] OR psychiatrists[Title/Abstract] OR pulmonologists[Title/Abstract] OR radiologists[Title/Abstract] OR rheumatologists[Title/Abstract] OR surgeons[Title/Abstract] OR urologists[Title/Abstract] OR "emergency doctors"[Title/Abstract]))) AND (("low- and middle-income countries" OR lmics OR "low and middle income countries" OR afghanistan OR "Gambia The" OR niger OR benin OR guinea OR rwanda OR "Burkina Faso" OR guinea bissau OR "Sierra Leone" OR burundi OR haiti OR somalia OR cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR liberia OR tanzania OR chad OR madagascar OR togo OR comoros OR malawi OR uganda OR "Congo, Dem. Rep." OR mali OR zimbabwe OR eritrea OR mozambique OR ethiopia OR nepal OR armenia OR indonesia OR samoa OR bangladesh OR kenya OR "Sao Tome and Principe" OR bhutan OR kiribati OR senegal OR bolivia OR kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR cameroon OR "Lao PDR" OR sudan OR "Congo, Rep." OR lesotho OR swaziland OR "Cote divoire" OR mauritania OR "Syrian Arab Republic" OR djibouti OR "Micronesia, Fed. Sts." OR tajikistan OR "Egypt, Arab Rep." OR moldova OR timor-leste OR "El Salvador" OR morocco OR ukraine OR georgia OR myanmar OR uzbekistan OR ghana OR nicaragua OR vanuatu OR guatemala OR nigeria OR vietnam OR guyana OR pakistan OR "West Bank and Gaza" OR honduras OR "Papua New Guinea" OR "Yemen, Rep." OR india OR philippines OR zambia OR albania OR fiji OR namibia OR algeria OR gabon OR palau OR "American Samoa" OR grenada OR panama OR angola OR "Iran, Islamic Rep." OR paraguay OR azerbaijan OR iraq OR peru OR belarus OR jamaica OR romania OR belize OR jordan OR serbia OR "Bosnia and Herzegovina" OR kazakhstan OR "South Africa" OR

botswana OR lebanon OR "St. Lucia" OR brazil OR libya OR "St. Vincent and the Grenadines" OR bulgaria OR "Macedonia, FYR" OR suriname OR china OR malaysia OR thailand OR colombia OR maldives OR tonga OR "Costa Rica" OR "Marshall Islands" OR tunisia OR cuba OR mauritius OR turkey OR dominica OR mexico OR turkmenistan OR "Dominican Republic" OR mongolia OR tuvalu ecuador OR montenegro)) Sort by: PublicationDate 2475 06:23:48

#3 Add Search ("low- and middle-income countries" OR lmics OR "low and middle income countries" OR afghanistan OR "Gambia The" OR niger OR benin OR guinea OR rwanda OR "Burkina Faso" OR guinea bissau OR "Sierra Leone" OR burundi OR haiti OR somalia OR cambodia OR "Korea, Dem. Rep." OR "South Sudan" OR "Central African Republic" OR liberia OR tanzania OR chad OR madagascar OR togo OR comoros OR malawi OR uganda OR "Congo, Dem. Rep." OR mali OR zimbabwe OR eritrea OR mozambique OR ethiopia OR nepal OR armenia OR indonesia OR samoa OR bangladesh OR kenya OR "Sao Tome and Principe" OR bhutan OR kiribati OR senegal OR bolivia OR kosovo OR "Solomon Islands" OR "Cabo Verde" OR "Kyrgyz Republic" OR "Sri Lanka" OR cameroon OR "Lao PDR" OR sudan OR "Congo, Rep." OR lesotho OR swaziland OR "Cote divoire" OR mauritania OR "Syrian Arab Republic" OR djibouti OR "Micronesia, Fed. Sts." OR tajikistan OR "Egypt, Arab Rep." OR moldova OR timor-leste OR "El Salvador" OR morocco OR ukraine OR georgia OR myanmar OR uzbekistan OR ghana OR nicaragua OR vanuatu OR guatemala OR nigeria OR vietnam OR guyana OR pakistan OR "West Bank and Gaza" OR honduras OR "Papua New Guinea" OR "Yemen, Rep." OR india OR philippines OR zambia OR albania OR fiji OR namibia OR algeria OR gabon OR palau OR "American Samoa" OR grenada OR panama OR angola OR "Iran, Islamic Rep." OR paraguay OR azerbaijan OR iraq OR peru OR belarus OR jamaica OR romania OR belize OR jordan OR serbia OR "Bosnia and Herzegovina" OR kazakhstan OR "South Africa" OR botswana OR lebanon OR "St. Lucia" OR brazil OR libya OR "St. Vincent and the Grenadines" OR bulgaria OR "Macedonia, FYR" OR suriname OR china OR malaysia OR thailand OR colombia OR maldives OR tonga OR "Costa Rica" OR "Marshall Islands" OR tunisia OR cuba OR mauritius OR turkey OR dominica OR mexico OR turkmenistan OR "Dominican Republic" OR mongolia OR tuvalu ecuador OR montenegro) Sort by: PublicationDate3321846 06:23:29

#2 Add Search (“health workers”[Title/Abstract] OR “healthcare professionals”[Title/Abstract] OR “medical doctors”[Title/Abstract] OR physicians[Title/Abstract] OR “medical specialists”[Title/Abstract] OR clinicians[Title/Abstract] OR “clinical professionals”[Title/Abstract] OR “medical professionals”[Title/Abstract] OR “healthcare specialists”[Title/Abstract] OR audiologists[Title/Abstract] OR allergists[Title/Abstract] OR andrologists [Title/Abstract] OR anaesthesiologists [Title/Abstract] OR cardiologists[Title/Abstract] OR dentists[Title/Abstract] OR dermatologists[Title/Abstract] OR endocrinologists[Title/Abstract] OR epidemiologists[Title/Abstract] OR “family doctors”[Title/Abstract] OR gastroenterologists[Title/Abstract] OR gynaecologists[Title/Abstract] OR haematologists[Title/Abstract] OR hepatologists[Title/Abstract] OR immunologists[Title/Abstract] OR “infectious disease specialists”[Title/Abstract] OR “internal medicine specialists”[Title/Abstract] OR internists[Title/Abstract] OR neonatologist[Title/Abstract] OR nephrologists[Title/Abstract] OR neurologist[Title/Abstract] OR neurosurgeons[Title/Abstract] OR obstetricians[Title/Abstract] OR oncologists[Title/Abstract] OR ophthalmologists[Title/Abstract] OR “orthopaedic surgeons”[Title/Abstract] OR “ENT specialists”[Title/Abstract] OR otolaryngologists[Title/Abstract] OR perinatologists[Title/Abstract] OR “paleo pathologists”[Title/Abstract] OR parasitologists[Title/Abstract] OR pathologists[Title/Abstract] OR paediatricians[Title/Abstract] OR

physiologists[Title/Abstract] OR physiatrists[Title/Abstract] OR podiatrists[Title/Abstract] OR psychiatrists[Title/Abstract] OR pulmonologists[Title/Abstract] OR radiologists[Title/Abstract] OR rheumatologists[Title/Abstract] OR surgeons[Title/Abstract] OR urologists[Title/Abstract] OR "emergency doctors"[Title/Abstract]) Sort by: PublicationDate 601950 06:22:58

#1 Add Search (morale[Title/Abstract] OR well-being[Title/Abstract] OR "well being"[Title/Abstract] OR wellbeing[Title/Abstract] OR "job satisfaction"[Title/Abstract] OR burnout[Title/Abstract] OR burn-out[Title/Abstract] OR "burn out"[Title/Abstract] OR "job motivation"[Title/Abstract] OR resilience[Title/Abstract] OR depression[Title/Abstract] OR "depression symptoms"[Title/Abstract] OR "moral distress"[Title/Abstract] OR "psychological distress"[Title/Abstract] OR "depressive symptoms"[Title/Abstract]) Sort by: PublicationDate 393635 06:22:33

Supplementary file 2. Data extraction form.

General information		Study characteristics								Participant characteristics			Results		
Title Authors Year of publication	Country Income group	Aim(s)/objective(s) of the study	Study design	Outcome of interest	Inclusion criteria	Exclusion criteria	Type of interview	Questionnaire details	Recruitment/sampling	Sample size, n Professional group (s)	Response rate	Gender Age range/mean	Clinical experience /mean (years)	Key findings	Conclusion
Women family physicians' personal experiences in the Republic of Moldova Wallace and Brinister 2010	Moldova lower-middle income	to explore the personal experiences of female physicians in Chisinau, Moldova	qualitative (in-depth interviews)	job satisfaction	full-time practising female family physicians	not stated	in-depth, face to face, semi-structured	8 item: (1) Why did you choose to be a family doctor? (2) Can you please tell me what you do on a "typical" day? (3) How many patients do you see on a "typical" day? (4) In your opinion, what are the top 3 health problems facing Moldovans today? (5) Are your patients well informed (have a good understanding) about health issues? (6) Where do most of your patients "get" their health information? (7) What do you like the most about being a family doctor? And (8) What do you like the least about being a family doctor?	directors were contacted via email/telephone/ purposive	20 family physicians (11 Eleven of them did not originally complete residency training to become a family physician: paediatricians (n 10) and therapeutic physician (1))	not stated	females 100% 42.4±7.2	12.2±7.9	4 key themes: 1) family medicine as a speciality offered much diversity and personal satisfaction: (+) diversity of cases; possibility to treat entire families and all ages; personal satisfaction from positive outcomes. (-) Lower status in comparison with specialists; high professional demands and as a result lack of personal time. 2) appointment time restrains and paperwork - challenges to provide care: insufficient amount of time (15 min) per patient - needs of patients might be different; 1 assistant per family physician; 'false' home visits; travel difficulties during the home visits (street dogs etc.); unnecessary, but mandated paperwork; electronic medical records system made paperwork less time consuming. 3) problems faced by patients are complex and go beyond the leading causes: not only physical problems matter (difficult life situations, lack of money, patients unhappy by their lives, many patients exhibited symptoms of depression) 4) patients have limited knowledge about health, but improved access to it: patients are not well informed, do not get thought, do not want to listen, difficulties in working with chronic patients - do not feel ill, have to convince patients to come, internet is covering that knowledge gap, and younger generation is more responsible.	Working as a family physician was personally rewarding, but system related challenges influenced negatively on job satisfaction and quality of care.

Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakistan Shah et al 2016	Pakistan lower middle income	To identify factors affecting the retention and motivation of doctors working in PHC (primary healthcare) facilities of Pakistan.	qualitative (interviews)	job motivation	physicians employed by BHUs (basic healthcare units) and district and provincial government health managers	not stated	semi-structured and in-depth	not stated	not stated	22 16 physicians (medical doctors=GPs) + 6 managers	not stated	13.6% - females 38	9.83	1)individual/personal factors: gender - harder to females due to cultural and security reasons; marital status - difficult to relocate to BHUs (they are in rural areas) due to disruption for their personal lives, insufficient educational opportunities for their children; nature of the job - job in BHUs is flexible (no emergency calls), secure for the rest of their careers, good option for newly graduates; absenteeism - younger physicians are more motivated to stay in BHUs; residence - provided houses are uninhabitable; difficult to commute; 2) workplace level factors: participants were satisfied with the physical environment; dissatisfied with colleagues - unsupportive, auxiliary workers were working without licence; recognition by supervisors was encouraging; political interference - affected appointments and transfers of staff; 3) organizational factors: remuneration - not satisfied with salaries, unequal salaries in comparison with secondary or tertiary care hospitals; professional growth and training - limited educational opportunities; promotions and transfers - debates about need for the influential person to get a promotion; supplies and medical facilities - shortage of medicines, irregular supply; performance appraisal and job perceptions - limited knowledge of the staff about the performance appraisal, lack of proper supervision, on existent job descriptions; human resource management strategies - not stuffiest hr management documents and older ones needed to be revised.	Priority themes: lack of basic facilities for physicians and their families; remoteness and lack of education facilities - individual factors; nature of work respect - workplace factors; remuneration, job security, supplies and medical facilities, lack of promotions and politically influenced transfers, training and learning opportunities - organizational factors

Motivational determinants among physicians in Lahore, Pakistan Malik et al 2010	Pakistan lower middle income	To identify the determinants of job motivation among physicians, a neglected perspective, especially in developing countries.	mixed method	job motivation	physicians were selected from public primary, public secondary and public and private tertiary health facilities in the Lahore district, Pakistan; all registered physicians from the Pakistani medical and dentistry council working in the study health facilities at the time of recruitment	not stated	open-ended questionnaire	asked to list their 5 main motivators and demotivators in their own words	stratified random	360 physicians	not stated	50% of females	not stated	The general motivators, good pay, respect, serving people, good working conditions and career growth were common for both public and private health tertiary health care physicians. The only difference observed was that public sector physicians reported personal safety as a motivator rather than opportunities for higher qualification, as reported by those in the private sector.	
What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? Kotzee and Couper 2006	South Africa upper middle income	to identify interventions that will lead to improved retention of South African qualified doctors in rural hospital service in the Limpopo province of South Africa	qualitative (interviews)	job motivation	non-specialist South African qualified doctors working in Limpopo public hospitals during 2005 (mostly GPs)		semi-structured interviews	Main question: What would make it attractive for you to continue working longer-term in rural hospital service in Limpopo? (was given in advance) Follow-up questions about views on current career structure, significant demotivators, rural allowance, other incentives/disi	purposive or random? (both of these methods were stated but in different parts)	10 rural physicians (5-principal medical officers (GPs); 3-senior medical officers (registrars); 1- medical officer; 1 - chief medical officer)		60% - males 25-36	4-9 years	demotivators: 1) poor hospital infrastructure (road access, telephone connections, appropriate facilities and equipment) and working conditions (workload, understaffing, salaries); 2) poor hospital accommodation and social support (schooling for children, recreational facilities); 3) poor academic stimulation (lack of opportunities for continuing education; 4) difficulties with promotions; 5) poor hospital management (not enough support and respect from managers; bureaucracy, interference by non-clinical managers to work); 6) not enough opportunities to utilize annual leave (more annual, study, unpaid, sabbatical leaves are necessary) ; motivators: 1) specialists support (visiting consultants);	an incentive package should be introduced for rural doctors

								ncentives, 3 main issues. (main question and 5 follow-up questions)						2) relationship among staff	
Going private': A qualitative comparison of medical specialists' job satisfaction in the public and private sectors of South Africa Ashmore 2013	South Africa upper middle income	To elaborate what South African medical specialists find satisfying about working in the public and private sectors, at present, and how to better incentivize retention in the public sector.	qualitative (interviews)	job satisfaction	South African dual practice doctors working in urban, hospital settings: specialists and medical officers (GPs who work in hospitals)	GPs and rural doctors	semi-structured interviews	what dual practice specialists found comparatively satisfying About working in both the public and private sectors ('tell me about the history of your working life, starting from when you qualified as a doctor. I'm particularly interested in reasons for entering and leaving different jobs'; reasons for staying or leaving the public sector).	purposive (in 6 hospital departments)	74 interviews (included follow-up interviews) 23 - key informants (23 interviews) - (policymakers and managers); 28 - dual practice doctors (51 interviews)		36% - females 29-63		1) rewards (financial incentives and benefits): private (+) higher financial rewards (salaries) are the reason to work in the private sector, but income is not the only thing that doctors care about, so they are working in dual practice; (-) high migration costs (purchasing own equipment), no guarantee of a regular supply of private patients for specialists (no referral networks); public (+) public state pension, paid holidays, paid sabbatical leave, income stability, free use of research and academic facilities and less potentially costly medicolegal risk (lower probability of being sued), (-);low salaries. 2) work context: private - 'sell availability', 'be on the end of the phone', solely responsibility for patients and not having others under your service; public - fewer resources, less equipment and drugs available, resource constraints, 'political in-fighting' among departments, lack of administrative staff, lack of doctors, low opportunities for career progression; 3) social work environment: higher sense of collegiality in public hospitals, poor relationships between doctors and nurses (nurses are undertrained, supportive managers are good incentive, but doctors felt undervalued, most respondents felt quite happy with patient interactions, but had legitimate issues (private patients were overly demanding,); 4) work itself - highly intense, research and teaching opportunities are welcomed, because it added variety, doctors felt more needed in public hospitals; more opportunities for more interesting and complex pathology in public; more autonomy in private	advantages and disadvantages of public and private clinics were given. Interventions should be developed based on these findings.

Burnout among Family Healthcare physicians: The challenge of transformation in the workplace Feliciano et al 2011	Brazil upper middle income	To understand how conflicts with the institution and disagreements regarding team members' attributions are interpreted by Family Healthcare physicians from the burnout perspective.	qualitative (interviews)	burnout	family healthcare (special program) physicians in Recife, Brazil with an experience more than one year		semi-structured interviews	1) discrepancies between institutional values and individual desires; 2) disagreement with the team members' competence; 3)negative consequences of the work	purposive (based on management evaluation)	24 physicians (12-pediatricians, 8 - GPs, psychiatrist, infectologists, obstetric gynaecologist, anaesthesiologist)		66.7% - females	3 month - 10 years	1) Discrepancy between institutional values and individual desires: high workload (feel suffocated), bur resources are low; discrepancy in efforts made and results gained; excessive demands and low organizational support; problems are greater than available resources, high expectations during the education and then dissatisfaction; low professional achievement, low opportunities to continue education, lack of personal identity among organizational goals, values, tasks; 2) disagreement with team members' competences: uncertainty between the demands of the profession and knowledge/skills; luck of trust within the team; bureaucracy; lack of nurses competences, but they are powerful (act like doctors and prescribe drugs) - no place for the doctor - lower recognition; 3) negative consequences of work insufficient institutional support, high stress triggered new illnesses and exacerbated existed ones	1) the role of the physician is not determined sufficiently, also, not clear roles between physician and nurse, lack of identity between physicians' values and organizational values; 2) expectations vs reality 3) high level of stress; 4) insufficient organizational support
Determinants of village doctors' job satisfaction under China's health sector reform: a cross-sectional mixed methods study Li et al 2017	China upper middle income	to describe village doctors' job satisfaction under the context of health sector reform and investigate the associated factors	mixed methods of	job satisfaction	village doctors who worked in the 12 chosen counties for more than six month or health managers who were responsible for village doctors issues.		semi-structured interviews		purposive (gender, age, geographic location, and levels of seniority)	34 interviews 21 with village doctors and 13 with managers		23.5% of females		1) years of experience (age) - higher professional reputation with ages, higher trust from the patients - older participants had higher job satisfaction; 2) income - is low - strong reason for job dissatisfaction; 3) pension plan - low pension rate for village doctors; 4) workload - transportation problems; 4) integrated management (attempt to manage village doctors as regular doctors) - increased respect among population, more responsibilities	village doctors in China transformed from barefoot doctors, but the education process of them is not clear, seems like only 3 years of medical training are required (Hu et al., 2017)

The burnout among emergency physicians: Evidence from Russia (sociological study) Liadova et al 2017	Russia upper middle income	to determine the prevalence burnout and its reasons among doctors occupied in emergency aid departments	mixed methods	burnout	physicians, who provide emergency care service for 24 hours a day and are occupied in emergency trauma aid department in one of the central public clinics in Moscow, Russia.		in-depth interviews (stated in the paper), but seems like semi-structured	What are the burnout causes? (personal and workplace conflicts, their cases, work satisfaction, opportunities for professional progress, ways to compensate occupational stress).		50 interviews emergency care physicians		40 % of females 25-50	less than 5 years - more than 20 years	1) excessive workload and low wage level - 99% (low salary 99% and too many work hours - 56%); 2) 'difficult patients' - 53%; 3) total control and growing requirements - 51%; 4) night shifts - 46%; 5) increasing medical documentation - 41%; 6) organizational hierarchy - 33%; 7) family problems - 21%; 8) personal relationship - 11%. In addition to these questions, the respondents were asked about their ways to compensate for occupational stress. The most part (60%) of our respondents reported reliance on psychotropic substances (drinking alcohol, smoking, and drugs), 30% of them go in for sports, 10% do nothing.	physicians in the study were highly dissatisfied

Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals Luboga et al 2010	Uganda low income	To explore physician reasons for staying, how satisfied they are with their current positions, what could entice them to stay longer, and their future career intentions.	mixed-methods	job motivation, satisfaction	physicians who were working at 10 facilities in Uganda		focus groups	working and living conditions	stratified random sampling	11 focus groups	49 physicians	females 10% 26-70/36	almost 10 years in their professions, in their current positions an average 6.5	1) quality of management: respect and support from supervisors; assisting in problem-solving, enough autonomy to staff, adequate supervision, sense of ownership and responsibility instillation. 2) availability of equipment, supplies and drugs: infrastructure issues, complaining about lack of clean water or electricity, not enough beds fro patients or space in the ward, and poor infection control. 3) staffing and workload: physicians shortage, the single physician was playing multiple roles in the facility (surgeon, on-call doctor), unreasonable patient loads, lack of available specialists, positions that have gone unfilled for months or years. 4) political influence: lack of confirmation of their positions, interference by district-level politicians in the decision making at health facilities, and intimidation of health workers by local politicians - politicians with no health knowledge should not be put in a decision-making role for health issues in the district. 5) community and location: lack of opportunities for study leave, learning in more high-tech or well-resourced environments, and the lack of promotion or growth available. 6) compensation and job security: none of the physicians felt their compensation acceptable combined with job insecurity.	

Job Satisfaction Analysis in Rural China: A Qualitative Study of Doctors in a Township Hospital Chen et al 2017	China upper-middle income	to understand the level of job satisfaction as felt by primary Health care providers.	qualitative	job satisfaction	doctor employed in a township health center, willing to deliver consent to participate documentation during the FGDs, and was able to communicate in the Mandarin Chinese or the local dialect (		focus groups	The guide included questions and queries on the following six themes: attitudes towards working conditions; views about workload and financial rewards; willingness to provide health care; attitudes towards job achievement; attitudes towards doctor-patient relationships; and measures are taken to improve doctors' job satisfaction.		5 focus groups	39 doctors	59% females /47; 39; 42; 38; 45	more than 10 years	Thefindings revealed six main themes relating to doctors' job satisfaction in township health centres: attitudes towards working conditions; views related to workload and financial rewards; willingness to provide health care; attitudes towards job achievement; attitudes towards doctor-patient relationships; and measures are taken to improve the doctor's job satisfaction.	

Supplementary file 3. Quality assessment form.

Author, year	1. Was there a clear statement of the aims of the research?	2. Is a qualitative methodology appropriate?	3. Was the research design appropriate to address the aims of the research?	4. Was the recruitment strategy appropriate to the aims of the research?	5. Was the data collected in a way that addressed the research issue?	6. Has the relationship between researcher and participants been adequately considered?	7. Have ethical issues been taken into consideration?	8. Was the data analysis sufficiently rigorous?	9. Is there a clear statement of findings?	10. How valuable is the research?
Wallace and Brinister, 2010	yes	yes	yes (but authors did not discussed how they decided to use qualitative methods)	can't tell (researcher has explained how participants were selected , but didn't provide reasons for selection and drop outs)	yes	yes	yes	yes	yes	yes (but identification of new areas where research is necessary not clear stated)
Shah et al , 2016	yes	can't tell	yes (rationale for using qualitative methods were given)	yes (but drop outs were not discussed)	yes	can't tell	yes	yes	yes	yes
Malik et al , 2010	yes	can't tell	can't tell	yes	no	can't tell	yes	no	yes	yes
Kotzee and Couper, 2006	yes	can't tell	can't tell	no	yes	can't tell	yes	no	yes	yes
Ashmore, 2013	yes	yes	yes	yes	yes	can't tell	yes	no	yes	yes
Feliciano et al, 2011	yes	yes	yes	can't tell	yes	can't tell	yes	yes	yes	yes

Li et al, 2017	yes	yes	yes	can't tell	yes	can’t tell	yes	yes	yes	yes
Liadove et al, 2017	yes	yes	yes	can't tell	no	no	can’t tell	can't tell	no	yes
Luboga et al, 2010	yes	can't tell	yes	yes	yes	can’t tell	yes	can't tell	yes	yes
Chen et al., 2017	yes	yes	yes	yes	yes	can't tell	yes	yes	yes	can't tell

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
ABSTRACT			
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
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
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.	4
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.	5
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.	Supplementary file 1
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).	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.	5, Supplementary file 2
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5
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, Supplementary file 3
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	-

PRISMA 2009 Checklist

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.	5-6

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).	5, Supplementary file 3
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	-
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.	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.	Table 1
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).	Supplementary file 3
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.	6-9
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	6-9
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	6-9
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	-
DISCUSSION			
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
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).	10
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	11
FUNDING			

PRISMA 2009 Checklist

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.	12

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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