Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

JOB SATISFACTION AMONG SUDANESE PUBLIC HEALTH PHYSICIANS IN PUBLIC SECTOR: A CROSS-SECTIONAL STUDY

Nadia Ahmed Babiker[1], Maria Blesilda B. Llaguno[2], Safia Belal[3], Elfatih M. Malik[4], Joanne C. Jaramillo[5], Bachir Yahia Khelif [6] and Yousif M. Elmosaad[7]

[1,4]Department of Community Medicine, Faculty of Medicine, University of Khartoum, Khartoum, Sudan
[2,3,5]College of Applied Medical Sciences, Department of Nursing, King Faisal Univesity, Al-ahsa, Saudi Arabia
[6,7]College of Applied Medical Sciences, Department of Public Health, King Faisal Univesity, Al-ahsa, Saudi Arabia

ABSTRACT
Introduction: Job satisfaction is organizational behavior, a vital element in an employee's lifecycle that significantly affects the productivity, quality of services, and efficient use of the organization's resources.
Methods: A cross-sectional study was conducted among 172 Public Health professionals (PHP's) working in governmental public health institutions in the 18 states in North - Sudan. Data were collected utilizing a modified Minnesota Job Satisfaction Questionnaire (MSQ), with a Cronbach's alpha (0.80). The data were analyzed using SPSS version 24, including descriptive statistics, independent sample t-test, Pearson correlations, Chi-square, one-way ANOVA, and multiple logistic regression. The tests, applied at 95 % confidence interval, $p<0.05$, were considered significant, and odds ratio (OR) with 95 % confidence interval (CI) were used to explain the presence of an association between dependent and independent variables.
Results: Majority (75.3%) of the public health physician-respondents noted that their interest led them to practice in the field. The PHP's job satisfaction was greatly affected by intrinsic factors and human resource management (HRM) factors ($P<0.001$). Their job satisfaction increased with their satisfaction with intrinsic and HRM factors, with (r) value ranging between (0.56-0.89). Gender is associated with job satisfaction, wherein males (($Л^2$= 0. 272) are more satisfied with their jobs than females ($Л^2$= 0. 173). However, the satisfaction score related to HRM factors was not associated with employer, age, highest qualification, area of practice, and position ($p> 0.05$). Multivariate logistic regression analysis showed that those working in state MOH are less likely to be satisfied with their job [(B= -1.16; OR = 0.31; 95% CI. (0.10 - 1.00); p=0,050]. The work experience in public health has a positive and significant association with job satisfaction [(B=0.20; 1.52; 2.32) 95% OR= 1.22; 4.59; 10.20)].
Conclusion: The overall level of job satisfaction among the respondents was low; their satisfaction level was greatly affected by the intrinsic and extrinsic factors and the HRM variables. Males who have accumulated more work experience are more satisfied with their jobs. Policymakers must develop and implement interventions to increase their levels of job satisfaction among females.
Keywords: Job satisfaction, Public Health Professionals, Human Resource Management, North - Sudan

Introduction

The most valuable asset of an organization is its human resource; it works as a cornerstone for providing a sustainable service delivery (1). An effective human resource management system contributes to qualified and motivated workers (2). Health care organizations depend on highly competent, motivated, and skilled health care providers (3, 4). Efficient and productive health care providers depend upon many factors. Of utmost importance is job satisfaction because it significantly influences

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

personnel motivation, health, work relations, and the quality of work within an organization (5, 6).

Job satisfaction theories argued that satisfaction is determined by a discrepancy between what one wants in a job and what one has in a job (7). In the light of Dispositional Theory, it suggests that people have innate dispositions that cause them to have tendencies toward a certain level of satisfaction, regardless of one's job. This approach explains that job satisfaction tends to be stable over time and across careers and jobs (8).

Another job satisfaction theory, Frederick Herzberg's two-factor theory, states that satisfaction and dissatisfaction are driven by motivation and hygiene factors in the workplace (9, 10). Motivation can be seen as an inner force that drives individuals to attain personal and organizational goals. At the same time, hygiene is used in the sense that these are maintenance factors, e.g., status, job security, salary, fringe benefits, work conditions, good pay, paid insurance, vacations, and extrinsic to the work itself such as company policies and supervisory practices (11, 9, 10).

Job satisfaction is an organizational behavior that largely determines the productivity, quality of services, and efficiency of human resources (1). Many researchers agreed on several important determinants of job satisfaction like teamwork, environment, job responsibilities, job autonomy, time pressure, the behavior of the leadership, organizational commitment, nature of work, and resources (12, 13). In contrast, dissatisfaction results in unfavorable outcomes due to high turnover with the resulting loss of qualified and competent staff (14). However, they are not sure about the impact of each of these determinants in different conditions and environments.

At present, people worldwide demand that Universal Health Coverage (UHC) be of good quality to ensure their access to health care services when needed and not become a financial burden for users (15). This dream of UHC can become a reality through a well-functioning health system equipped with a skilled workforce as consumers of the health system today have higher expectations from their healthcare providers. Hence, today's health care systems emphasize, more than ever, that the workforce does not only need to be upgraded, well abreast with knowledge and skills, more so, they must be satisfied with their jobs (16). Several studies that explored the factors influencing healthcare workers' job satisfaction level conducted in developed and developing countries suggest that the main factors affecting their job satisfaction include pay incentives, working conditions, doctor-patient relationship, stress, and interrelations and opportunities for promotion (17, 18). Based on the above findings, a conclusion can be drawn that healthcare workers' job satisfaction, which is affected by many factors, is a pivotal parameter that influences productivity, commitment to work, healthcare costs, and quality of work (19).

As with other developing countries, the Sudan public health sector is still in its early stage and is challenged by different issues related to human resource management, including production, training, management, and retention; factors that can impact the job satisfaction of health personnel. As revealed in the National Health Workforce Survey 2011 and other studies assessing job satisfaction level among public

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

physicians, there was a discrepancy in overall job satisfaction ranging between 30-60% (20) while there was only 34.6 % in another study (21).

These findings bring far-reaching consequences, such as external and internal brain drain. About 60% of the registered doctors have migrated to work abroad, and 70% of the health workforce are working in urban settings, serving only 30% of the population. The great majority of the health personnel are employed in the public sector, while only 9.3% of the health workforce are in the private sector (20). According to World Health Organization (2010), 2.5 health personnel are required per 1000 population to attain adequate coverage of essential health interventions and core Millennium Development Goals (MDG) related health services. It can then be posited that Sudan is still within the critical shortage zone (22).

This study aims to build on the previous studies on job satisfaction among healthcare workers (HCW's), which were conducted in developing countries including Sudan; suggesting a low level of job satisfaction which resulted in a high turnover, low coverage rate, poor quality, yet the high cost of services. The preceding statements motivated the authors to conduct this study, aiming to assess the level of and factors influencing the Sudanese Public Health physicians' satisfaction with the challenging public health practice settings. The study findings will become a springboard in designing triangulated methods to address the critical issue of job satisfaction, considering the changes in the context of the health system, and thus providing updated evidence that can be useful in human resources development and decision making.

Methods

Study Design

A cross-sectional study was conducted to assess the level of and factors influencing job satisfaction among Sudanese Public Health professionals working in governmental public health institutions in the 18 states in Sudan.

Study Populations

- **Source Population**: All Public Health Physicians (MBBS) with postgraduate qualifications including MD community medicine, and master's degree in the field of public health, who are practicing in any area related to public health, and those working in the government sector, including the Federal Ministry of Health, state MOH and governmental universities, were included in this study.
- **Study Population**: All the public health physicians who meet the study inclusion criteria were considered.

Sampling Technique and Sample Size

The study included a total enumeration of all public health physicians who met the study inclusion criteria to participate in the study. A total of (172) public health physicians were included.

Inclusion Criteria

All public health physicians (MBBS) of both genders, with postgraduate qualifications (MD community medicine, and master's degree in the field of public health), practicing

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

in any area related to public health, permanently employed as public health chief residents and/or heads of each department/unit for not less than one year at any governmental public health institutions (Federal Ministry of Health, state MOH and government universities), were considered.

Exclusion Criteria

Community medicine registrars, those with a dual practice (working in both clinical and private practice), and those on leave during the study period were excluded.

Data Collection Process

Data collection was conducted from March-August 2019 utilizing a self-administered, researcher-structured questionnaire composed of two parts: Part 1 included variables about the respondent's sociodemographic characteristics, work history, practice details, and a section on job satisfaction assessment in Part 2.

The items under job satisfaction, culled from different sources, were assessed in response to how participants would describe the level of satisfaction with their work, using a 5-point Likert scale ranging from (1 to 5), where five (5) implies very satisfied, four (4) satisfied, three (3) neutral, two (2) dissatisfied, and one (1), strongly dissatisfied.

This consisted of general job satisfaction factors (intrinsic and extrinsic) and Human Resource Management Functions (HRMF) such as employment, retention, support, and development. The general job satisfaction factors have been adapted from the Minnesota Job Satisfaction Questionnaire (MSQ), a standardized questionnaire developed to measure satisfaction for different job categories (23). On the other hand, the HRM functions were based on the Framework for Human Resource Development (Omar, 2014).

To ensure the clarity and relevance of the questions and to determine the time required to answer all items, the questionnaire was pilot tested among a sample of health care workers using a simple random sample to check its format, language, sequence, and comprehension of the questions and duration. The reliability and validity of the tool were checked using Cronbach’s alpha test it was (0.80).

Informed consent was obtained from each respondent, and they were informed about the purpose of the study, the confidentiality and privacy of data gathered, and that the data were used only for the intended purposes of this study.

The questionnaire was in the English language. Since the researchers are working and residing in Khartoum, hard copies of the questionnaires were personally distributed to the respondents. For participants from other states, soft copies were sent through email. A maximum of three reminders were sent to all of them, and those who did not complete the questionnaire after three reminders were considered non-respondents.

Data Analysis:

The data were analysed using the Statistical Package for Social Sciences (SPSS) version 24. Descriptive statistics (frequency and percentage) were utilized to describe the sociodemographic characteristics of the study participants. Moreover, means and

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

standard deviations were obtained to describe the level of job satisfaction factors.

The physician's level of job satisfaction was dichotomized through its weighted mean, using this scale: 1 to 3.40 will be interpreted as dissatisfied, and 3.41 to 5.00, satisfied.

Independent sample t-test, Pearson correlations, Chi-square, One way ANOVA, and Multiple logistic regression were used for the inferential analysis of the variables. The tests applied at 95 % confidence interval, p values less than 0.05 were considered significant, and old ratio (OR) with 95 % confidence interval (CI) were used to explain the association between dependent and independent variables. The instrument reliability and validity were tested by using Cronbach's alpha test.

Ethical Considerations:

Ethical approval was obtained from the ethical committee at the Sudan Medical Specialization Board (SMSB) and the ethical committee at the Federal Ministry of Health prior to the start of the study. The participants were informed that participation is voluntary, they can withdraw from the study at any time, and their consent was taken before data collection. The identity of participants was also kept confidential.

Results

1. Sociodemographic Characteristics of the Public Health Professionals in North Sudan

Table 1 shows the sociodemographic characteristics of the public health physicians in North Sudan. There was an almost equal number of respondents in gender; 90 (55.6%) were females while 72 (44.4) were males.

As with age, almost half of the respondents (90 or 55.6) fall into the 26 to 40 age range; 53 (32.7) were 41 to 55 years old, while only 19 (11.7) are 56 years old and above. The mean age is (42.02±9.8) years. The majority of the public health physician-respondents (112 or 69.1) were married, 45 (27.8) were single, and only 5 (3.1) were divorced.

Table 1

Socio-Demographic Characteristics of the Public Health Physicians in North Sudan

Socio-Demographic Variables	Frequency (N=162)	Percentage
Gender		
- Male	72	44.4
- Female	90	55.6
Age in years		
- 26-40 years age/ total part	90	55.6
- 41-55 years	53	32.7
- >56 years	19	11.7

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

Marital status		
- Single	45	27.8
- Married	112	69.1
- Divorced	5	3.1
Employer		
- Federal Ministry of Health (FMOH)	90	55.6
- State MOH	34	21.0
- University	26	16.0
- Others	12	7.4
Highest Educational Qualification		
- MD/PhD	85	52.5
- Master's degree	77	47.5

In terms of their employers, more than half of them (90 or 55.6) were employed by the Federal Ministry of Health (FMOH), while the remaining half were working elsewhere. There were (34 or 21.0) employed in the State MOH, (26 or 16.1) from the universities, and (12 or 7.4) in other institutions. Out of the 162 respondents, 85 (47.5) are theremaining 77 (47.5) have master's degree doctorate holders, whiles.

2. Practice Details

This study considered the practice details of the public health physicians, which include: their job title, years of service in the present position, total years of experience in public health, and reasons for choosing public health. These are shown in Table 2.

Table 2

Practice Details

Area of Practice	Count	Percent
Job Title		
- Administration	49	30.2
- Academia	27	16.7
- Technical assistance	11	6.8
- Mixed	75	46.3

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

Years of service in the present position		
- Less than one year	9	5.6
- 1-5 years	109	67.3
- 6-10 years	34	21.0
- >10	10	6.2
Work experience in public health		
- Less than 5 years	51	31.5
- 6-10 years	52	32.1
- 11- 15 years	34	21.0
- >15 years	25	15.4
Reasons for choosing public health		
- Personal interest	122	75.3
- Better job opportunities	11	6.8
- Social and family obligations	12	7.4
- no chance in other specialties	7	4.3
- others	10	6.2

Almost half of the job titles (75 or 46.3) have mixed roles; 49 or 30.2 are administrators, 27 or 16.7 are in the academe, and 11 or 6.8 render technical assistance.

For their years of service in their present position, a large majority of the doctors (109 or 67.3) have been working for 1 to 5 years, 34 or 21.0 already stayed for 6 to 10 years; there were only 10 (or 6.2) who have been working for more than ten (10) years, while only 9 or 5.6 are relatively new, having stayed for less than a year.

As with their length of work experience in public health, a big bulk of them have been in public health for 6 to 10 years (52 or 32.1), and 51 (or 31.5) have been serving the public for less than five (5) years. Only 34 (or 21.0) and 25 (or 15.4) have been in public heath for 11 to 15 years and more than 15 years, respectively.

The majority of the respondents (122 or 75.3) noted that their interest led them to practice in the field. The other reasons mentioned by the respondents in their reasons for embarking on a career in public health were social and family obligations (12 or 7.4), better job opportunities (11 or 6.8), no chance in other specialties (7 or 4.3), and other reasons not previously mentioned (10 or 6.2).

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

3. Level of Job Satisfaction

This study considered two main variables under job satisfaction: the general (including intrinsic and extrinsic) and the human resource management functions (HRMF).

A. General Job Satisfaction Factors (Intrinsic and Extrinsic)

It can be gleaned from Table 3 that in terms of general job satisfaction factors, the public health physicians were "satisfied" with the intrinsic factors as shown by a mean score of (3.48±0.83) and "dissatisfied" for the extrinsic factors, yielding to a mean of (3.13±0.70).

Intrinsic Factors. The respondents were "satisfied" with all the items under this category. It can be gleaned from Table 3 that all the physicians were satisfied with all the variables under intrinsic factors, except for authority, with a mean of 3.39±1.12. The most vital points relate to ability utilization yielding a mean of (3.59±1.11) followed by creativity, with a mean of (3.54±1.06). The weaknesses under intrinsic factors are achievement and social status, as shown by their means: (3.43±1.01) for the former and (3.43±1.13) for the latter, respectively.

Table 3

Level of Job Satisfaction related to General Job Satisfaction Factors (Intrinsic and Extrinsic)

No.	Variables	Satisfied No./ %	Dissatisfied No./%	Total Mean Score	Interpretation
A. Intrinsic Factors					
1	Ability Utilization	102 (63.0)	60 (37.0)	3.59±1.11	Satisfied
2	Authority	88 (54.3)	74 (45.7)	3.39±1.12	Dissatisfied
3	Creativity	101 (62.3)	61(37.7)	3.54±1.06	Satisfied
4	Achievement	79(48.8)	83(51.2)	3.43±1.01	Satisfied
5	Social Status	93(57.4)	69 (42.6)	3.43±1.13	Satisfied
Total		**82(50.6)**	**80(49.4)**	**3.48±0.83**	**Satisfied**
B. Extrinsic Factors					
1	Compensation	15 (9.3)	147 (90.7)	2.02±1.01	Dissatisfied
2	Advancement	50 (30.9)	112 (69.1)	2.78±1.12	Dissatisfied
3	Co-workers	116 (71.6)	46 (28.4)	**3.75±0.97**	Satisfied

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

4	Recognition	88 (54.3)	74 9(46.7)	3.44±1.02	Satisfied
5	Responsibility	105 (64.8)	57 (35.2)	3.59±0.98	Satisfied
6	Security	35 (21.6)	127(78.4)	2.51±1.09	Dissatisfied
7	Supervision-Human Relations	80 (49.4)	82(50.6)	3.31±1.12	Dissatisfied
8	Supervision-Technical	81 (50.0)	81(50.0)	3.31±1.08	Dissatisfied
9	Variety	88 (54.3)	74(46.7)	3.45±1.02	Satisfied
10	Working Conditions	80 (49.4)	82(50.6)	3.15±1.25	Dissatisfied
Total		**55 (34.0)**	**107(66.0)**	**3.13±0.70**	Dissatisfied

- 44.4% of the Public Health Professionals were satisfied with their jobs (Intrinsic and Extrinsic)
- Mean Classification: {(1.0 - 3.40) = Dissatisfied & (3.41 - 5.0) = satisfied}

Extrinsic Factors. The highest mean (3.75±0.97) under this category pertains to co-workers, an item considered "satisfied." Other items that also fall under this level, "dissatisfied." are responsibility (3.59±0.98), variety (3.45±1.02), and recognition (3.44±1.02). Areas considered to fall in the neutral level of satisfaction (dissatisfied) are supervision - human relations (3.31±1.12), supervision - technical (3.31±1.08), working conditions (3.15±1.25), and advancement (2.78±1.12). The weakest areas are compensation (2.02±1.01) and security (2.51±1.09).

B. Human Resource Management Factors (HRMF)

The second area considered under job satisfaction is the human resource management functions. It can be gleaned from Table 4 that the level of job satisfaction related to human resource management factors falls in the dissatisfaction level (dissatisfied), with a mean of (2.86±0.69). All the variables under HRMF fall at this level. The areas with the highest dissatisfaction level pertain to support, development, and employment, yielding a total mean of (3.15±0.93), (2.88±0.86), and (2.82±0.81) respectively. The minor area of dissatisfaction relates to retention and change with a total mean of (2.60±0.88).

Table 4
Level of Job Satisfaction related to Human Resource Management Factors

No.	Variables	Satisfied (%)	Dissatisfied (%)	Total Mean Score	Interpretation
1	Employment	36(22.2)	126(77.8)	2.82±0.81	**Dissatisfied**
2	Retention & Change	34(21.0)	128(79.0)	2.60±0.88	**Dissatisfied**
3	Support	79 (48.8)	83(51.2)	3.15±0.93	**Dissatisfied**

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

4	Development	38(23.5)	124(76.5)	2.88±0.86	**Dissatisfied**
Total		**34(21.0)**	**128(79.0)**	**2.86±0.69**	**Dissatisfied**
- Only (21.0%) of Public Health Professionals satisfied with the human resource management factors (HRMF)					

4. Over-all Level of Job Satisfaction

Figure 1 shows that in public health physicians' overall job satisfaction, 60.5% were dissatisfied, while only 39.5% were satisfied. It is also noteworthy that in terms of the HRMF, 79.0% were dissatisfied while 21.0% were satisfied. As with the general job satisfaction (extrinsic and extrinsic) factors, 55.6% were dissatisfied while 44.4%, satisfied.

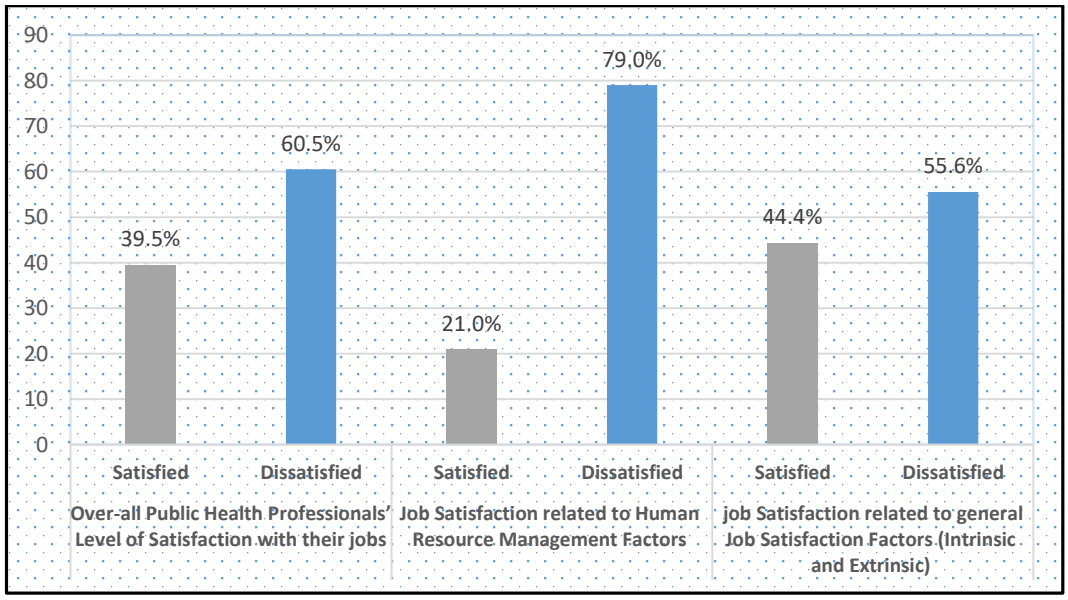

Fig. 1. Overall Public Health Professionals' Level of Satisfaction with their jobs

5. Satisfaction Factors associated with the Over-all Level of Job Satisfaction

This study considered the overall job satisfaction score as an outcome variable and was calculated by computing for the composite of the satisfaction variables and then putting them on a Likert scale. As can be gleaned from Table 6, the respondents who were satisfied with their jobs were also significantly satisfied with the general job satisfaction factors (intrinsic, extrinsic) and the HRM variables (employment, retention, support, and development functions) and overall, with job satisfaction ($P < 0.001$).

Table 5

Satisfaction Factors associated with the Over-all Level of Job Satisfaction

Satisfaction Variable	Mean Score (SD)		t- value	P-Value
	Satisfied	Dissatisfied		
Intrinsic	4.17 (0.52)	3.07 (0.70)	10.60	**0.001**
Extrinsic	3.75 (0.48)	2.77 (0.53)	11.71	**0.001**

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

HRM employment function	3.73 (0.76)	2.49 (0.65)	7.86	**0.001**
HRM retention function	3.41 (0.93)	2.34 (0.75)	5.20	**0.001**
HRM Support function	3.68 (0.70)	2.83(0.90)	6.28	**0.001**
HRM Development function	3.52 (0.76)	2.51 (0.68)	8.77	**0.001**

6. Correlations between the Physicians' Overall Level of Job Satisfaction with the General Job Satisfaction Factors (Intrinsic and Extrinsic) and HRM Factors

Overall, the general satisfaction factors have a strong positive relationship with each job satisfaction dimension (r), with the value ranging between (0.56-0.89) and the overall satisfaction with human resources management functions (r) value ranging from (0.695- 0.805). These positive correlations indicate that the satisfaction of public health physicians toward their job increase with the increase of their satisfaction with general job satisfaction factors (intrinsic and extrinsic) and HRM factors. This is shown in Table 6.

Table 6

Pearson Correlations between the Physicians' Overall Level of Job Satisfaction with the General Job Satisfaction Factors (Intrinsic and Extrinsic) and HRM Factors

Variables	Overall job satisfaction	Employment	Retention & Change	Support	Development	Overall satisfaction about HRMF
Overall job satisfaction	1					
Employment	0.626**	1				
Retention & Change	0.466**	0.510**	1			
Support	0.495**	0.515**	0.444**	1		
Development	0.627**	0.552**	0.512**	0.499**	1	
Overall satisfaction about HRMF	0.695**	0.803**	0.779**	0.785**	0.805**	1

** Correlation is significant at the 0.01 level (2-tailed)

HRMF: human resources management functions

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

7. Association of General Job Satisfaction Factors (Intrinsic and Extrinsic) with the Sociodemographic variables

The association of general job satisfaction factors (intrinsic and extrinsic) with the physician's sociodemographic variables can be gleaned from Table 7. It is noteworthy that statistically, gender is associated with job satisfaction. The overall contribution with the level of job satisfaction is at a rate of 30%, where the Eta square value is ($Л^2$= 0. 30), wherein the males (27.2%) are more satisfied with their jobs than females wherein 17.3% of them were satisfied with their jobs. Moreover, their work experiences in public health were also statistically associated with job satisfaction by 28%, where Eta square value is ($Л^2$= 0. 28), where those who have a work experience of 6-10 years were found to be more satisfied than the other groups. However, the younger physicians (26-40 years old), were 38.4% of them were less satisfied by 26.0% where Eta square value is ($Л^2$= 0. 26). The other sociodemographic variables were not associated with the general job satisfaction factors (intrinsic and extrinsic).

Table 7
Association of General Job Satisfaction Factors (Intrinsic and Extrinsic) with the Sociodemographic Variables

Sociodemographic variables	Frequency	Percent	Dissatisfied (no = 90) %	Satisfied (no = 72) %	Sign. level	Eta value
Gender						
- Male	72	44.4	17.3	27.2	0.000	0.30
- Female	90	55.6	38.3	17.3		
Age in year						
- 26-40 years	90	55.6	36.4	19.1	0.004	0.26
- 41-55 years	53	32.7	16.0	16.7		
- >56 years	19	11.7	3.1	8.6		
Marital status						
- Single	45	27.8	15.4	12.3	0.979	0.006
- Married	112	69.1	38.3	30.9		
- Divorced	5	3.1	1.9	1.2		
Highest Degree						
- MD/PhD	85	52.5	30.9	21.6	0.235	0.069
- Master degree	77	47.5	24.7	22.8		
Area of practice						
- Administration	49	30.2	18.5	11.7	0.285	0.007
- Academia	27	16.7	6.8	9.9		
- Technical assistance	11	6.8	3.1	3.7		
- Mixed	75	46.3	27.2	19.1		
Years Current Position						
- Less than one year	9	5.6	3.7	1.9	0.063	0.13
- 1-5 years	109	67.3	40.7	26.5		
- 6-10 years	34	21.0	7.4	13.6		

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

- >10	10	6.2	3.7	2.5		
Work experience in public health						
- Less than 5 years	51	31.5	11.1	20.4	0.001	0.28
- 6-10 years	52	32.1	10.5	21.6		
- 11- 15 years	34	21.0	11.1	9.9		
- >15 years	25	15.4	11.7	3.7		
Reasons to choose public health						
- Personal interest	122	75.3	38.9	36.4	0.324	0.091
- Better job opportunities	11	6.8	5.6	1.2		
- Social and family obligations	12	7.4	4.3	3.1		
- no chance in other specialties	7	4.3	3.1	1.2		
- Others	10	6.2	3.7	2.5		
Recommend public health as a career for your colleagues and relatives						
- Yes	127	78.4	38.3	40.1	0.001	0.26
- No	35	21.6	17.3	4.3		

Eta value: effect size: the quantify and direction of relationship with outcome

8. Association of Human Resources Management Factors with the Sociodemographic Variables

Table 8 summarizes the respondents' satisfaction score of HRM factors and their sociodemographic characteristics. It can be noted that males and those who practiced in public health were associated with higher satisfaction related to HRM factors than females ($p < 0.05$). However, the satisfaction score related to HRM factors was not associated with their employer, age, highest qualification, area of practice, and position ($p > 0.05$).

Table 8

Mean scores (SD) by demographic and satisfaction about functions of Human Resources Management Factors (N=160)

Socio-Demographic	HRM Score Mean (SD)	
	Satisfied	Dissatisfied
Gender		*
- Male	3.34(0.58)	2.67(3.7)
- Female	3.26(0.58)	2.43(0.59)
Employer:		

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

- FMOH	3.72 (0.41)	2.53 (0.53)
- State MOH	3.95 (0.57)	2.71 (0.37)
- University	3.92 (0.45)	2.67 (0.57)
- Other	3.71 (0.12)	2.81 (0.36)
Age		
- 15 – 29 years	3.75 (0.39)	2.51 (0.52)
- 30 – 44 years	3.76 (0.43)	2.69 (0.44)
- >45 years	4.08 (0.43)	2.96 (0.31)
Highest qualification:		
- PhD	3.83 (0.38)	2.59 (0.54)
- Master's degree	3.79 (0.46)	2.62 (0.46)
Area of practice:		
- Administration	3.63 (0.18)	2.70 (0.43)
- Academia	3.96 (0.65)	2.60 (0.56)
- Technical assistance	3.54 (0.0)	2.64 (0.38)
- Mixed	3.85 (0.40)	2.54 (0.54)
Position:		
- Less than one year	3.65 (0.17)	2.32 (0.53)
- 1-5 years	3.74 (0.39)	2.60 (0.50)
- 6-10 years	3.92 (0.54)	2.71 (0.47)
- >10 years	4.10 (0.41)	2.66 (0.50)
Practiced in public health	*	*
- Less than 5 years	3.68 (0.22)	2.56 (0.49)
- 6-10 years	3.76 (0.32)	2.53 (0.51)
- 11- 15 years	3.86 (0.64)	2.58 (0.52)
- >15 years	4.00 (0.39)	2.93 (0.36)
Recommend		
- Yes	3.77 (0.37)	2.65 (0.48)
- No	4.02(0.63)	2.47 (0.54)

** Statistically significant with the category differences, $p \leq 0.05$*

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

9. Multiple Logistic Regression to Explain a Predictor of Job Satisfaction:
Multivariate logistic regression analysis showed that gender was significantly associated with job satisfaction [(B=-0.96; OR = 0.48; 95% CI. (0.15 - 0.98); p=0,045]. Then the negative co-efficient would be taken as an indicator that females are less likely to be satisfied with their job as public health physicians.

As gleaned from Table 9, their employer was significantly associated with job satisfaction [(B= -1.16; OR = 0.31; 95% CI. (0.10 - 1.00); p=0,050]. This indicates that public health physicians working in state MOH are less likely to be satisfied with their job.

Table 9
Multiple logistic regression model for sociodemographic variables as factors associated with overall job satisfaction of public health physicians

Variables	B	S.E.	Sig.	OR	[95.0% C.I. for OR]	
Gender					Lower	Upper
- Male	Ref.					
- Female	-0.96	0.48	0.045	0.38	(0.15 - 0.98)	
Age in years						
- 26-40 years			0.597			
- 41-55 years	0.54	0.55	0.321	1.72	(0.59- 5.05)	
- >56 years	0.25	0.89	0.776	1.29		
Marital status					(0.23 - 7.38_	
- Single	Ref.		0.444			
- Married	-0.36	0.51	0.481	0.70	(0.26 - 1.90)	
- Divorced	-2.14	1.75	0.221	0.12	(0.00 - 3.63)	
Employer						
- FMOH	Ref.		0.086			
- State MOH	-1.16	0.59	0.050	0.31	(0.10 - 1.00)	
- University	0.20	0.79	0.803	1.22	(0.26 - 5.74)	
- Other	0.98	0.86	0.255	2.65	(0.49 - 14.21)	
Highest qualification						
- MD/PhD	Ref.					
- Master's degree	0.67	0.50	0.183	1.94	(0.73 - 5.18)	
Area of practice						
- Administration	Ref.		0.383			
- Academia	0.62	0.85	0.465	1.86	(0.35 - 9.89)	
- Technical assistance	1.37	0.86	0.113	3.93	(0.72 - 21.33)	
- Mixed	0.76	0.53	0.153	2.14	(0.75 - 6.05)	

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

Work experience in public health						
- Less than 5 years	Ref.		0.012			
- 6-10 years	0.20	0.61	0.741	1.22	(0.37 - 4.06)	
- 11- 15 years	1.52	0.67	0.023	4.59	(1.23 - 17.14)	
- >15 years	2.32	0.89	0.009	10.20	(1.77 - 58.81)	
Years Current Position						
- Less than one year	Ref.		0.391			
- 1-5 years	-0.57	0.84	0.497	0.56	(0.11 - 2.95)	
- 6-10 years	0.26	0.98	0.788	1.30	(0.19 - 8.93)	
- >10	0.35	1.35	0.794	1.42	(0.10 - 19.87)	
Reasons for choosing public health						
- Personal interest	Ref.		0.797			
- Better job opportunities	-0.75	0.90	0.407	0.47	(0.08 - 2.77)	
- Social and family obligations	0.07	0.85	0.936	1.07	(0.20 - 5.64)	
- no chance in other specialties	0.00	1.10	0.999	1.00	(0.11 - 8.68)	
- Others	0.79	0.83	0.341	2.21	(0.43 - 11.33)	

** R-squared = 0.2454 "The model predictors explained 24.4 % of the variance in job" satisfaction*.

Their work experience in public health has a positive and significant association with job satisfaction [(B=0.20; 1.52; 2.32) 95% OR=1.22; 4.59; 10.20)]. This debits that those with more work experience are more likely to be satisfied than those with less work experience. However, age, marital status, qualification, area of practice, years in current position, and reasons for choosing public health were not associated with job satisfaction**.**

Discussion

Job satisfaction theories argued that satisfaction is determined by a discrepancy between what one wants in a job and what one has in a job. Public health professionals' satisfaction plays a significant role in their performance that impacts the quality of the service delivery for their societies. This study aimed to assess the level of and factors influencing the Sudanese public health physicians' satisfaction with the challenging public health practice settings.

This undertaking showed that most of the public health professionals noted that their interest led them to practice in the field of public health. This finding is aligned with the study conducted in Pakistan, where the professionals selected this field based on their interests (25). Literature shows that personal interest has significant consequences on

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

employee satisfaction; bringing happiness tends to have a high level of satisfaction and positively affects their performance (6, 26).

The present study indicated that the public health professionals' satisfaction is significantly impacted by intrinsic factors such as ability utilization, creativity, achievement, and social status. This is identical to the findings of Olajide et al. (2020), who reported that intrinsic factors such as achievement and recognition positively influence job satisfaction among nurses (27). Similarly, Frederick Herzberg's Two-Factor Theory hypothesized that two different sets of factors govern job satisfaction and job dissatisfaction: hygiene factors and motivation factors. Herzberg's theory described factors responsible for employees' job satisfaction as intrinsic factors, which he believed, are internally generated motivational variables directly related to the job content (9, 10).

The extrinsic factors such as supervision - human relations, technical, working conditions, advancement, and compensation were found to harm job satisfaction. These findings are consistent with Olajide et al. (2020) and Asuquo et al. (2016), who reported that poor working conditions were the highest cause of job dissatisfaction among the participants. (27, 28). Correspondingly, a study conducted in Pakistan indicated that good working conditions were positively related to job satisfaction (1).

The overall level of satisfaction among public health physician-respondents showed that 39.5% of them were satisfied. This was similar to the studies conducted in Pakistan and Ethiopia among public health professionals working in the public sector in which the overall level of job satisfaction was 41.1% and 41.5%, respectively (1, 29).

Similar studies conducted in Greece, India, and China, revealed that the overall level of job satisfaction was far higher than his study, with 74.6%, 75.3%, and 83.3%, respectively (30, 31, 32). This difference might be attributed to the fact that these countries' working conditions, social aspects, and economic status are better than those in Sudan (33).

In this undertaking, Sudanese Public Health Professionals were dissatisfied with human resource management factors retention & change, employment, development, and support. This might be because of retention, training policy, regulatory authorities, recognition and rewards, factors that affect employees' job satisfaction. Human resource managers should conduct efficient reviews to assist in developing policies to manage public health professionals' dissatisfaction.

We report that Sudanese Public Health professionals who were satisfied with their jobs were also significantly satisfied with the general job satisfaction factors (intrinsic, extrinsic) and the HRM variables and overall job satisfaction ($P < 0.001$). Our results were consistent with studies from Turkey and Thailand, which noted a positive relationship between HRM factors and job satisfaction (34), contrasting with the study conducted in Malaysia (35).

The present study indicates that the job satisfaction of Public Health Physicians increased with the increase in their satisfaction with intrinsic and extrinsic factors and HRM factors. This is in line with the opinions of William et al. (2017), who reported that

Xi'an ShiyouDaxueXuebao (ZiranKexue Ban)/
Journal of Xi'an Shiyou University, Natural Sciences Edition
ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

attention to intrinsic and extrinsic job factors and HRM is more important for promoting high levels of job satisfaction (36). These findings must be disseminated to policymakers as “clear calls to action” to adequately address the subject of job dissatisfaction of the Public Health Workforce because of its far-reaching consequences to the organization and patient care. Healthcare organizations need to improve job satisfaction because the high level of job satisfaction is translated to happy, motivated, and productive employees who will give their best to deliver safe and high-quality care to patients. It likewise lowers the costs for hiring and training new personnel and lowers the costs for sickness or absences. At the same time, it cannot be denied that the employees deserve to be treated with love and respect. (37).

It is recommended that interventions be implemented to increase job satisfaction among Public Health Care Professionals by reinforcing the human resources polices, improving the working conditions, and revising the motivation strategies.

Regarding the association between HRM and sociodemographic variables, this study suggests that males were associated with higher satisfaction scores related to HRM factors compared with females. This might be due to the actual situation dominant in Sudan, in which males are working in leadership positions; they participate in the decision-making process associated with human resource management, which makes their level of satisfaction higher than that of females. This argument is consistent with the study conducted by Khamlub et al. (2013), who reported that an employee occupying a high position in any organization had higher job satisfaction (38). Moreover, previous studies have likewise reported that handling a higher position is likely to produce a high level of job satisfaction (39, 40).

As revealed in the multiple logistic regression model for sociodemographic as factors associated with overall job satisfaction of public health professionals, it is noteworthy that males (27.2%) are more satisfied with their jobs than females wherein (17.3%) of them were satisfied with their jobs. This is consistent with similar studies conducted in health centers in Sudan, West Ethiopia, Turkey, and Pakistan (41, 29, 42, 1). However, the studies conducted in Germany (43) and Spain reported opposite results (44). Moreover, many reviews indicated that gender is not a predictor of job satisfaction (45, 46). The difference might be due to policy, work environment, regulations, and cultural variations in communities' values in these countries.

On the other hand, our results indicated that public health professionals who have accumulated more years of work experience were found to have a higher level of job satisfaction than the other groups. This is consistent with the previous study, which reported that professionals who accumulated several years of experience were found to have a higher level of job satisfaction (38).

The researchers conclude that the overall job satisfaction among public health professionals was low; their satisfaction level was greatly affected by the intrinsic and extrinsic factors and the HRM variables. The male participants reported higher scores of satisfactions related to overall job satisfaction and HRM factors than females. The multiple logistic regression model explained that males and those who have accumulated more work experience are more satisfied with their jobs. Policymakers must develop and implement interventions to increase their levels of job satisfaction

ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

among females since job satisfaction has a strong correlation with extrinsic factors by reinforcing relevant human resources policies and improving working conditions and the health system.

Acknowledgments
We acknowledge the support we received from the heads of the Public Health Directorate in the 18 states in North Sudan, who assisted in the data collection. Moreover, we are grateful to the Public Health Specialists for investing time in this study. We also thank King Faisal University in Saudi Arabia for completing this article.

Authors' contributions

NB and FM initially conceptualized this study. NB collected data with supervision from FM. MB & YM took the lead in data analysis and interpretation. YM, SB,J wrote the first draft with support from MB. All authors read and approved the final document.

List of abbreviations

CI: Confident Interval; OR: Odds Ratio; S.E: Standard Error; SPSS: Statistical Package for Social Sciences; HRM: Human Resources Management; SD: Standard Deviation; HRMF: Human Resource Management Factors; MOH: Ministry of Health; MBBS: Bachelor of Medicine, Bachelor of Surgery; WHO: World Health Organization; UHC: Universal Health Coverage.

Declaration:
Ethical approval and consent to participate in the study:

The Ethical Committee of the Medical and Health Studies Board, University of Khartoum approved “Job Satisfaction among Sudanese Public Health Physicians in Public Sector: a descriptive cross-sectional study". Participants were informed that participation is voluntary. They can withdraw from the study at any time, and their consent was taken before the interview, and confidentiality of data was ensured.
Conflict of interest

The authors declare that there is no conflict of interest associated with the material presented in this article.

Availability of data and material
Data is available with the corresponding author. It will be provided on reasonable request.
Funding
None.

References

1. Kumar, R., Ahmed, J., Shaikh, B. T., Hafeez, R., & Hafeez, A. (2013). Job satisfaction among public health professionals working in public sector: a cross sectional study from Pakistan. *Human resources for health*, *11*(1), 2.
2. Homedes, N., & Ugalde, A. (2005). Human resources: the Cinderella of health sector reform in Latin America. *Human Resources for Health*, *3*(1), 1.
3. Franco, L. M., EnCompass, L. L. C., Bennett, S. C., & Kanfer, R. (1999). *Public sector health worker motivation and health sector reform: a conceptual framework*. Partnerships for Health Reform Project, Abt Associates Incorporated.
4. Al-Kharji, N. A. (2014). Factors Affecting Performance of Nurses at Prince Sultan Military Medical City (PSMMC) Riyadh, Saudi Arabia. *Middle-East Journal of Scientific Research*, *22*(8), 1242-1252.
5. Rožman, M., Treven, S., & Čančer, V. (2017). Motivation and Satisfaction of Employees in the Workplace. *Business systems research journal: international journal of the Society for Advancing Business & Information Technology (BIT)*, *8*(2), 14-25.
6. Rafferty, A. E., & Griffin, M. A. (2009). Job satisfaction in organizational research. *The Sage handbook of organizational research methods*, 196-212.

ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

7. Locke, E. A. (1976). The nature and causes of job satisfaction. *Handbook of industrial and organizational psychology*.
8. Gerhart, B. (2005). The (affective) dispositional approach to job satisfaction: Sorting out the policy implications. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *26*(1), 79-97.
9. Herzberg, Frederick; Mausner, Bernard; Snyderman, Barbara B. (1959). The Motivation to Work (2nd ed.). New York: *John Wiley. ISBN 0471373893*
10. Dartey- Baah, K., & Amoako, G. K. (2011). Application of Frederick Herzberg's Two-Factor theory in assessing and understanding employee motivation at work: a Ghanaian Perspective. *European Journal of Business and Management*, *3*(9), 1-8.
11. Jaiswal, R. K., Dash, S., & Mishra, A. (2016). Why Do Indian Military Officers Want to Leave? An Empirical Investigation. *Armed Forces & Society*, *42*(2), 386-406.
12. Shader, K., Broome, M. E., Broome, C. D., West, M. E., & Nash, M. (2001). Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. *JONA: The Journal of Nursing Administration*, *31*(4), 210-216.
13. Rana, M. S. (2015). Job satisfaction effecting factors of employees in Bangladesh banking sector. *International Journal of Economics, Finance and Management Sciences*, *3*(4), 352-357.
14. Asegid, A., Belachew, T., & Yimam, E. (2014). Factors influencing job satisfaction and anticipated turnover among nurses in Sidama zone public health facilities, South Ethiopia. *Nursing research and practice*, *2014*.
15. Tasneem, S., Cagatan, A. S., Avci, M. Z., & Basustaoglu, A. C. (2018). Job satisfaction of health service providers working in a public tertiary care hospital of Pakistan. *The Open Public Health Journal*, *11*(1).
16. Janicijevic, I., Seke, K., Djokovic, A., & Filipovic, T. (2013). Healthcare workers satisfaction and patient satisfaction–where is the linkage?. *Hippokratia*, *17*(2), 157.
17. Romig B, O'Sullivan Maillet J, Denmark RM. Factors affecting allied health faculty job satisfaction: a literature review. J Allied Health 2011;40:3-14.
18. Witter S, Thi Thu Ha B, Shengalia B, et al. Understanding the 'four directions of travel': qualitative research into the factors affecting recruitment and retention of doctors in rural Vietnam. Hum Resour Health 2011; 9:20.
19. Nikic D, Arandjelovic M, Nikolic M, Stankovic A. Job Satisfaction in Health Care Workers. Acta Medica Medianae. 2008; 47: 9-12
20. Federal Ministry of Health of Sudan (2012). The Republic of Sudan's Health Sector Strategic Plan (HSSP) II for 2012-2016.
21. Abdelah, E.A., Physicians' job satisfaction at Khartoum central hospitals. 2009, Sudan Medical Specialization Board: Khartoum.
22. World Health Organization (2010). *Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations*.
23. Weiss, D. J., Dawis, R. V., & England, G. W. (1967). Manual for the Minnesota Satisfaction Questionnaire. *Minnesota Studies in Vocational Rehabilitation, 22,* 120.
24. Omar Yousef Rida AL-Hourani (2014). The Impact of Human Resources Management Practices on the Job Satisfaction of Front office Employees in Five- Star Hotels, Amman-Jordan, Unpublished master's thesis, Accessed from https://www.uop.edu.jo/En/Research/Theses/Documents/Omar%20Yousef%20Rida%20AL-Hourani.pdf last March 11, 2021,
25. Aslam, S., Aslam, S., & Saleem, R. (2015). Determinants of Employee Satisfaction: A case study of Banking Sector in Lahore, Pakistan. *Journal of Poverty, Investment, and Development, 14, 73-80.)*
26. Abuhashesh, M., Al-Dmour, R., & Masa'deh, R. (2019). Factors that affect employees job satisfaction and performance to increase customers' satisfactions. *Journal of Human Resources Management Research, 2019, 1-23.*
27. Olajide, A. O., Sowunmi, C. O., & Adeleke, B. O. Intrinsic and Extrinsic Factors Influencing Job Satisfaction among Nurses Working in two Selected Government Owned Hospital in Lagos, Nigeria, *Journal of Medical Science and Clinical Research, 08:04, 2020*

ISSN: 1673-064X
E-Publication:Online Open Access
Vol: 65 Issue 03 | 2022
DOI 10.17605/OSF.IO/4RXPS

28. Asuquo, E. O., Imaledo, J. A., Thomp Onyekwelu, C., Abara, N. L., & Agugua, C. C. (2016). Job satisfaction among nurses in the University of Port-Harcourt Teaching Hospital, Port Harcourt, Nigeria. Int. J. Curr. Res. Med. Sci, 2(7), 59-70.
29. Kebede, B., Ololo, S., & Megersa, B. (2017). Health professionals' job satisfaction and associated factors at public health centers in West Ethiopia.
30. Aletras VH. Development and preliminary validation of a questionnaire to measure satisfaction with home care in Greece. BMC Health Serv Res. 2010; 10:189
31. Singh, T., Kaur, M., Verma, M., & Kumar, R. (2019). Job satisfaction among health care providers: A cross-sectional study in public health facilities of Punjab, India. Journal of family medicine and primary care, 8(10), 3268.
32. Walters BL. Job satisfaction and its modeling among township health center employees in rural China. 2010
33. Kekana HP, du Rand EA, van Wyk NC: Job satisfaction of registered nurses in a community hospital in the Limpopo Province in South Africa. Curationis 2007, 30(2):24–35.
34. Koc, M., & Çavuş, M. F. (2014). Human resource management practices, job satisfaction and organizational commitment. Thailand et al., 2015)
35. Teoh, W. M. Y., Kit-Wei, T. A. N., Chonghong, S. C., & Lew-Sian, W. O. O. I. (2012). Job satisfaction level among human resource employees: Malaysia's perspective. African journal of business management, 6(2), 595-607.
36. Williams ES, Manwell LB, Konrad TR, Linzer M. The relationship of organizational culture, stress, satisfaction, and burnout with physician reported error and suboptimal patient care: results from the MEMO study. Health Care Manage Rev. 2007;32:203–12
37. Rana, Akshay (2014). Job Satisfaction among Healthcare Employees in Public and Private Sector Hospitals in Punjab. Doctoral Dissertation.
38. Khamlub, S., Harun-Or-Rashid, M. D., Sarker, M. A. B., Hirosawa, T., Outavong, P., & Sakamoto, J. (2013). Job satisfaction of healthcare workers at health centers in Vientiane Capital and Bolikhamsai Province, Lao PDR. Nagoya journal of medical science, 75(3-4), 233.
39. Abdullah MM, Uli J, Parasuraman B. Job satisfaction among secondary school teachers. Jurnal Kemanusiaan, 2009; 13: 11–18. 28)
40. Nielsen I, Smyth R. Job satisfaction and response to incentives among China's urban workforce. The Journal of Socio-Economics, 2008; 37: 1921–1936.
41. Simsaa, A. E., Modawy, M. E., Abdallah, O. I., & Hamdoon, A. A. Job Satisfaction among Sudanese Community physicians.
42. Bodur S. Job satisfaction of healthcare staff employed at health centers in Turkey. Occup Med J. 2002;52(No. 6: 353–355). occmed.oxfordjournals.org/ content/52/6/353.full.pdf. 28.
43. Behmann M, Schmiemann G, Lingner H, Kühne F, Hummers-Pradier E, Schneider N. Job satisfaction among primary care physicians. Dtsch Aerzteblatt Online. 2012;109:193–200.
44. Carrillo-García C, Solano-Ruíz M del C, Martínez-Roche ME, Gómez-García CI. Job satisfaction among health care workers: The role of gender and age. Rev Lat Am Enfermagem. 2013;21:1314–20
45. Keeton K, Fenner DE, Johnson TRB, Hayward RA. Predictors of physician career satisfaction, work–life balance, and burnout. Obstet Gynecol. 2007;109:949–55.
46. Cujec B, Oancia T, Bohm C, Johnson D. Career and parenting satisfaction among medical students, residents and physician teachers at a Canadian medical school. CMAJ. 2000; 162:637–40.