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Associations between healthcare worker participation in workplace wellness activities and job satisfaction, occupational stress and burnout: a cross-sectional study in Botswana

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ABSTRACT

Objectives Healthcare workers (HWs) are prone to high levels of stress and burnout, particularly when caring for people with HIV/AIDS. This study assessed whether participation in Botswana's Workplace Wellness Programme (WWP) for HWs was associated with job satisfaction, occupational stress, well-being and burnout.

Methods Using multistage sampling, a paper-based questionnaire was distributed to 1856 randomly selected HWs at 135 public facilities across Botswana. Well-validated scales assessed key outcomes. Analysis of covariance models were built for psychosocial factors associated with WWP participation, controlling for associated demographics.

Results Response rate was 73% (n=1348). The majority of respondents were female (62%), not married (65%) and had children (84%). Mean age was 40.0 years (SD±9.9). Respondents were roughly split between participation in no WWP activities (29.4%), 1–6 WWP activities (38.9%) and seven or more WWP activities (31.7%) in the past year. High participation was associated with older age, being a doctor or other professional, working at hospitals or District Health Management Teams, working longer in health services or working longer at a facility. In unadjusted analyses, high participation was significantly associated (P<0.05) with higher satisfaction with overall job, work, supervision, promotion, pay and professional efficacy and lower stress, exhaustion and cynicism. All associations remained significant in controlled analyses except cynicism.

Conclusions Results from this study suggest that participation in workplace wellness activities is associated with higher satisfaction with multiple job facets and lower stress, exhaustion and cynicism. Introduction of these activities may help ameliorate high occupational stress levels among HWs.

Strengths and limitations of this study

- ► Strengths include a multilevel random sampling methodology and use of previously validated scales.
- ► The survey had a relatively high response rate (73%).
- ► Limitations include an inability to determine the direction of causality due to the cross-sectional nature of the survey.

INTRODUCTION

Healthcare professionals are prone to high levels of occupational stress. When stress is experienced chronically, it results in burnout, an exhaustion of physical and emotional resources.[1] This is due to long hours and the emotional weight of treating sick patients[2] and is especially common among providers who work with People Living with HIV/AIDS (PLHA).[3] In the early years of the HIV epidemic, the stress was primarily due to stigma around the disease, lack of understanding of transmission and treatment and the extremely high mortality rate.[4] The introduction of highly active antiretroviral therapy and increased community and clinical HIV knowledge has lessened stress on providers. However, many providers still experience stress from the emotional toll of caring for sick patients, workplace demands, lack of supervision, unresolved grief, feelings of helplessness and ineffectiveness and an absence of gratitude from individuals and communities.[4 5] Accordingly to the Maslach Burnout Model, this persistent stress eventually results in burnout, composed of 'overwhelming' exhaustion, cynicism and a sense of ineffectiveness.[1]

In sub-Saharan Africa, high demand for services and insufficient resources are still commonplace, resulting in tense environments for health workers involved in HIV treatment, care and support. This situation may be compound by the new Joint United Nations Programme on HIV/AIDS

(UNAIDS) targets of having 90% of PLHA know their status, 90% of people who know they have HIV on antiretroviral (ARV) treatment and 90% of PLHA on treatment virally suppressed.[6]

Botswana, with an 18.5% prevalence rate, has been one of the countries most affected by the HIV epidemic.[7] A survey conducted in 2006 indicated there were high levels of stress and burnout among health workers in Botswana, due in part to the rising burden of patients with HIV/AIDS and the related pressure on the healthcare system.[8] In response, the Botswana Ministry of Health (MOH) began implementing a comprehensive Workplace Wellness Programme (WWP) for healthcare workers in 2007.[9] This initiative aimed to improve health and well-being and reduce stress among health workers in government facilities by empowering them with knowledge and skills to manage the dynamic demands of the healthcare system.[8] WWP implementation has been described previously.[10] Briefly, the programme focused on holistic improvements in health and well-being through activities focusing on: health screening, treatment and care; health promotion; stress management and team building; occupational health and safety; psychosocial and spiritual care and therapeutic recreation.

Data from high-income settings suggest that WWPs can have numerous benefits, including lowered healthcare costs, reduced absenteeism, increased productivity and positive economic impact.[11–15] However, the situation is different in less resourced countries, with higher reported levels of anxiety, depression and health risks[16] and lower nutritional habits and physical activity.[17] Thus, little is known about the effectiveness of WWPs when implemented to improve occupational health among health workers in these settings, outside of a few studies in South Africa.[18–21] Therefore, a nationally representative survey of health workers in Botswana was conducted to determine if there were associations between participation in WWP activities with individuals' levels of job satisfaction, psychological well-being, burnout and sources of stress.

METHODS

This was a cross-sectional survey of staff employed at public health facilities in Botswana. Individuals had to be employed in a selected public health facility to be eligible to participate. A self-administered questionnaire was distributed to randomly selected health workers in public health facilities using multistage sampling. The first sampling stage was to select the health facilities, using a random number generator to select five facilities in each of Botswana's 27 health districts. For each district, one facility was selected from each of the following five types of health facilities: district health management teams, hospitals, clinics with maternity services, clinics without maternity services and health posts. When no facility was available in a particular category, an additional facility was selected at random. If a district had less than five facilities, all were chosen. The second stage of sampling was to select healthcare workers. For each selected facility, employees were categorised according to four cadres: doctors and nurses providing clinical care, administrative personnel (doctors and nurses acting in administrative capacity, human resources staff, data clerks), other professionals (social workers, pharmacists, nutritionists, allied health professionals including radiographers and pharmacist technicians, paraprofessionals including lay counsellors and health education assistants), and support staff (drivers, cleaners, gardeners). Four participants and two alternates were randomly selected per cadre at each facility. If a facility had fewer than four employees in a cadre, all were selected. One district had fewer than five facilities and many cadres had fewer than four people. In total, surveys were distributed to 1856 health workers in 134 facilities (32 clinics with maternity, 29 clinics without maternity, 26 health posts, 26 District Health Management Teams (DHMTs) and 21 health posts), which represents 9.3% of the estimated 20 000 health workers in the country.[22] This sample size was calculated to provide a confidence level of 95% and CI of 5% among the smallest employee category (other professionals, n=4751) working at public health facilities.

Surveys were administered by district WWP focal people. To ensure uniform administration, these individuals received a 1-week training including general research topics, research ethics, the survey tool and the distribution process. In rare cases, where a participant had limited literacy and/or English skills, focal people supported completion of the survey. Participants completed the questionnaire, sealed it in an envelope and returned it to the district WWP focal person. Envelopes were sent through government transport, post or courier to the research team in Gaborone.

Questionnaire

The self-administered questionnaire consisted of quantitative, closed-ended questions assessing demographics (age, gender, marital status, children, education, employment cadre, type of facility, length of time in healthcare, length of time working at current facility, citizenship). It also assessed participation in WWP activities, job satisfaction, stress level, well-being, burnout and sources of stress.

Participation in WWP services was assessed using a question about each of the five activity types (health promotion, psychosocial and spiritual care, stress management and team building, therapeutic recreation, occupational health and safety). The number of times an individual had participated in each activity was assessed. Total number of activities was calculated by averaging the midpoint number from each response category across the five activity types.

Job satisfaction was assessed using the abridged Job Descriptive Index (JDI),[23] a shortened form of the JDI, both psychometrically well-validated tools[24] to measure satisfaction with work, co-workers, compensation, promotion opportunity and supervision. Respondents were asked to think about each job facet and respond to six adjectives/short phrases with 'yes', 'no' or 'cannot

decide.' Responses were summed using the recommended cleaning and scoring procedures including eliminating 'straight line responses', dropping response with significant missing data and reverse-scoring negative phrases. The eight-item Job In General (JIG) scale was used to measure overall job satisfaction and cleaned in the same fashion. Occupational stress was assessed with the Stress in General (SIG) scale,[25] using the same format as the JDI and JIG.

Psychological well-being was assessed with the General Health Questionnaire-12 (GHQ-12), a psychometrically well-validated, widely used tool,[26] including in low-income settings.[27] The GHQ comprises 12 items such as 'Have you recently been able to concentrate on what you're doing?' with responses on a four-point Likert-type scale (not at all, no more than usual, rather more than usual, much more than usual). Responses were summed using the author-recommended 0/0/1/1 scoring.

Burnout was assessed using the 16-item Maslach Burnout Inventory-General Survey (MBI-GS), developed over 25 years ago[28] show to have strong psychometric properties across settings and occupations.[29–31] The GS version focuses on staff not providing direct human services and measures three subscales of exhaustion, cynicism and professional efficiency using five or six items each.

Sources of stress were measured using an investigator-adapted instrument from the 2006 Botswana Healthcare Worker Survey asking participants to rate whether 10 topics were sources of work-related stress on a five-point Likert scale (strongly agree, agree, not sure, disagree, strongly disagree). A response of 'strongly agree' or 'agree' was used to indicate stress.

Statistics

Data were entered and managed using Research Electronic Data Capture (REDcap) electronic data capture tools hosted at University of Washington.[32] REDCap is a secure, web-based application designed to support data capture for research studies, providing an intuitive interface for validated data entry, audit trails for tracking data manipulation and export procedures, automated export procedures for seamless data downloads to common statistical packages and procedures for importing data from external sources. Data were exported to STATA V.14.2 for analysis.

Participants who did not respond to questions on WWP participation were removed from analysis. Descriptive statistics were generated to characterise the respondents' demographics, participation in WWP activities and psychosocial measures. Respondents were categorised into three WWP participation groups based on number of activities completed in the past year: 0 activities, 1–6 activities or 7+ activities. Associations between demographics and WWP programme participation as well as psychosocial factors and WWP participation were analysed with X^2 (categorical) and analysis of variance models (continuous). For psychosocial factors found to be associated with WWP participation, analysis of covariance models were built, controlling for associated demographics. Post hoc pairwise comparisons were conducted using the Bonferroni method. No sensitivity analyses were conducted.

Ethics approval

The evaluation was approved by the MOH Health Research and Development Committee Reference #PPME: 13/18/1 Vol VIII (434), and non-research determination was received by the University of Washington's Internal Review Board Application #45194EJ. It was conducted by the International Training and Education Centre for Health (I-TECH), which is a collaboration between the University of Washington and University of California, San Francisco under the guidance of a reference group of healthcare stakeholders which included representation from the Botswana Ministry of Health Departments of Corporate Services, HIV/AIDS Prevention and Care, Clinical Services and Public Health; the Seventh Day Adventist Mission Hospital in Kanye; Directorate of Public Service Management, Office of the President; the WHO and CDC Botswana.

RESULTS

Of the 1856 forms distributed, questionnaires were completed and returned by 1348 health workers, a response rate of 73%. There were 30 respondents who did not answer questions on WWP participation and were removed from the analyses. Nearly two-thirds of respondents were female (62.4%) and similar amounts were not married (65.2%) (table 1). Of respondents, 2.9% were doctors, 29.2% were nurses, 27.4% were other professionals, 10.4% were administrative and 27.2% were support staff. The mean age was 40.0 years (SD ±9.9). About half worked in hospitals (26.9%) or clinics with maternity (24.9%).

Participants were split into roughly thirds of those who in the last year had participated in 0 WWP activities (n=387, 29.4%), 1–6 activities (n=513, 38.9%) and seven or more activities (n=418, 31.7%). Among those who had participated in seven or more activities in the past year, psychosocial and spiritual care activities were the best attended, with 13.6% of participants attending seven or more in the last year, while only 2.8% of participants had attended the same quantity of occupational health and safety (OHSA) activities.

High participation in WWP activities was associated with older age, working longer in health services, working longer at a facility, being a doctor or other professional staff and being posted at hospitals and the DHMT. The strongest association was seen with facility type.

In unadjusted analyses, overall job satisfaction assessed by the JIG was significantly higher for health workers that participated in seven or more WWP activities, as compared with those who did not participate in any WWP activities ($p<0.001$). There were similar findings with the JDI subscales related to satisfaction with work, supervision, promotion opportunities and pay, with the highest levels found among those participating in seven or more WWP activities (all $p\leq0.005$). Psychological well-being measured by the GHQ-12

Table 1 Demographic characteristics and workplace wellness programme (WWP) participation in the past year of 1318 WWP national survey participants

			WWP participation in last year						
	Total		0 Activities		1–6 Activities		7+ Activities		
Characteristic	%	n=1318*	%	n=387*	%	n=513*	%	n=418*	P values†
Age (years)*		39.9±9.9		39.9±10.1		39.2±9.6		40.9±10.1	0.027
Gender									
Female	62.2	820	66.7	258	60.6	311	60.0	251	0.116
Male	37.5	494	33.3	129	38.8	199	39.7	166	
Marital status									
Not married	65.2	859	65.6	254	66.9	343	62.7	262	0.364
Married	33.8	445	33.1	128	32.2	165	36.4	152	
Number of children									
0	16.2	213	17.6	68	17.5	90	13.2	55	0.407
1–2	47.7	629	47.0	182	47.4	243	48.8	204	
3–4	27.6	364	28.9	112	26.3	135	28.0	117	
5+	7.2	95	5.9	23	7.0	36	8.6	36	
Highest education completed									
Less than high school	30.5	402	30.0	116	27.7	142	34.4	144	0.292
Senior secondary school	16.0	211	15.2	59	17.2	88	15.3	64	
More than high school	50.5	666	50.6	196	52.4	269	48.1	201	
Botswana citizen	93.8	1236	95.6	370	93.4	479	92.6	387	0.341
Years worked in health services*		11.9±9.0		11.7±8.7		11.2±8.7		12.9±9.4	0.014
Years worked in facility*		3.1±1.3		2.9±1.3		3.1±1.3		3.2±1.3	0.001
Cadre									
Doctor	2.9	38	2.1	8	2.9	15	3.6	15	0.001
Nurse	29.2	385	35.1	136	29.6	152	23.2	97	
Other professional	27.4	361	21.4	83	28.3	145	31.8	133	
Administrative	10.4	137	10.3	40	12.3	63	8.1	34	
Support	27.2	358	27.9	108	23.8	122	30.6	128	
Facility type									
Hospital	26.8	353	17.6	68	29.8	153	31.6	132	<0.001
Clinic with maternity	24.8	327	30.7	119	24.8	127	19.4	81	
District health management team	19.9	262	15.2	59	19.3	99	24.9	104	
Clinic without maternity	17.6	232	24.0	93	15.0	77	14.8	62	
Health post	8.8	116	10.3	40	8.6	44	7.7	32	
WWP activity participation‡ (n)									
Health promotion	1290	1.8±2.9		0		1.4±1.3		4.0±4.0	

Continued

Table 1 Continued

Characteristic	Total		WWP participation in last year: 0 Activities		1–6 Activities		7+ Activities		P values†
	%	n=1318*	%	n=387*	%	n=513*	%	n=418*	
Psychosocial and spiritual care	1281	2.2±3.9		0		0.7±1.2		6.0±5.0	
Stress management and team building	1298	0.9±2.2		0		0.4±0.8		2.4±3.3	
Therapeutic recreation	1278	0.9±2.5		0		0.4±0.8		2.5±3.8	
Occupational health and safety	1288	0.7±2.0		0		0.4±0.8		1.9±3.2	

*N (%) may not be equal to total due to missing data or rounding. Percentages are calculated using missing data.
†P value calculated from X^2 test for categorical variables and analysis of variance for continuous variables.
‡Mean±SD.

did not differ significantly by level of WWP participation. However, levels of stress from the SIG as well as measures of exhaustion and cynicism from the MBI were significantly lower among those with high participation in WWP activities. All associations remained the same in analyses controlled for age, cadre, and facility type, except for the MBI subscale of cynicism, which became non-significant. Post hoc analyses of differences between groups are presented in table 2.

The three most commonly reported sources of stress were shortages of staff (78.0%), insufficient resources and supplies (76.7%) and too much work (72.7%) (table 3). Compared to the 2006 survey, fewer participants in 2014 indicated each category was a source of stress. The only exception was for 'non-supportive supervisors' which saw a slight increase from 58% in 2006 to 59.5% in 2013.

Table 2 Association of job satisfaction, stress, well-being and burnout with workplace wellness programme (WWP) participation in the past year among 1291 WWP national survey participants

	Overall		WWP participation in the last year: 0 Activities	1–6 activities	7+activities	P values (unadjusted)	P values (adjusted)
	n=1291	Mean±SD	n=376	n=503	n=412		
Job in general	1012	15.0±6.8	13.9±7.4[a]	14.7±6.5[ab]	16.5±6.3[b]	<0.001	0.004
Job Descriptive Index							
Co-workers	1031	12.2±6.0	12.0±6.0	12.3±5.9	12.3±6.0	0.759	0.703
Work in present job	1027	10.3±5.6	9.1±5.8[a]	10.1±5.6[ab]	11.6±5.4[b]	<0.001	<0.001
Supervision	989	10.3±5.8	9.6±6.1[a]	10.0±5.7[ab]	11.4±5.6[b]	<0.001	0.043
Opportunities for promotion	986	5.9±5.0	5.0±4.7[a]	6.0±4.9 [b]	6.6±5.2[b]	<0.001	0.003
Pay	1023	4.4±4.6	3.9±4.6*	4.2±4.3[ab]	5.1±5.0[b]	0.005	0.007
Stress in general	970	12.9±7.7	14.1±8.0[a]	13.1±7.6[ab]	11.7±7.4[b]	<0.001	0.006
General Health Questionnaire	1278	4.0±2.6	4.2±2.7	4.1±2.7	3.8±2.4	0.138	0.307
Maslach burnout inventory							
Professional efficacy	1257	4.9±1.1	4.9±1.1[a]	4.9±1.1[a]	5.1±0.9[b]	0.043	0.017
Exhaustion	1260	2.3±1.7	2.6±1.8[a]	2.3±1.7[b]	2.0±1.5[b]	<0.001	<0.001
Cynicism	1246	2.4±1.4	2.5±1.4	2.4±1.4	2.2±1.4	0.022	0.418

All outcome variables were continuous and tested with one-way analysis of variances. Adjusted analyses used analysis of covariances, controlling for age (continuous), cadre (five levels) and facility type (five levels). Mean values with different superscript letters are significantly different using Bonferroni pairwise comparisons.

Table 3 Comparison of sources of stress between participants in the 2013 workplace wellness programme national survey and 2006 healthcare worker survey

Sources of stress (agree/strongly agree)	2013		2006	
	%	(n=1313)	%	(n=223)
Shortage of staff	78.0	1051	91	201
Insufficient resources and supplies	76.7	1034	–	–
Too much work	72.7	980	88	196
Not being appreciated for the work I do	64.1	864	76	169
Non-supportive supervisors	59.5	802	58	129
Balancing demands of work and family	51.3	691	–	–
Providing care for many patients	49.0	660	85	190
Providing care for many patients with HIV/AIDS	42.3	570	76	169
Providing support for relatives of patients	41.3	557	55	123
Conflict with co-workers	39.7	535	–	–

DISCUSSION

Data from this nationally representative survey of health workers in Botswana found that participation in workplace wellness activities was associated with higher levels of job satisfaction and professional efficacy. Participation in workplace wellness activities was also associated with lower levels of stress and exhaustion. To the authors' knowledge, this is the first report of the effectiveness of a national workplace health promotion initiative for public health workers in middle-income or low-income countries. Health workers were more likely to participate in WWP activities if they were of older age, worked longer in health services, worked longer at a facility, were a doctor or other professional staff or were posted at hospitals and the DHMT. This last and strongest association was possibly due to greater access to activities at these sites.

While there is a large body of literature on health-promotion activities in high-income countries, workplace health promotion programmes in middle-income or low-income countries have been reported less frequently,[13 20 33] particularly in healthcare settings.[34] Much of the existing research comes from the Healthy Company Index, which was developed by a large health insurer in South Africa to promote healthy lifestyles among insurees.[17–20] Data from this programme indicate that WWPs are positively associated with employee health. Specifically, employees at companies providing health promotion facilities are more likely to meet the guidelines for physical activity and daily consumption of fruits and vegetables.[18] The Maslach Burnout Model indicates that burnout is a result of chronic stress[1]; however, a recent literature review indicates that the interplay between workplace stress, burnout, job satisfaction and general health is not well understood.[35] Thus, the mechanism by which WWPs may improve well-being is unclear.

Additional research from the Healthy Company Index shows that leadership support of WWPs influences the provision of health promotion facilities and policies, resulting in higher employee well-being and increased perceived organisational commitment to well-being.[19] The authors argue based on social exchange theory (SET),[36] WWPs may have benefits beyond those created by their direct use. Even employees who do not participate in the programmes may still benefit through the perception that the organisation they work cares about their health. The importance of enacting such programmes and policies is an important implication for policymakers charged with caring for the public health workforce.

The data on sources of stress can be directly compared with the 2006 survey conducted before the implementation of the WWP. In the recent study, fewer respondents reported providing care for HIV/AIDS (42% vs 76%), caring for many patients (49.0% vs 85%), too much work (72.7% vs 88%) and staff shortages (78% vs 91%) as a source of stress.[37] These results are encouraging, as they suggest there have been improvements in reducing workplace stress. However, it is unclear what these changes are attributable to, including increased familiarity with HIV/AIDS, more straightforward treatment regimens, programmes like WWP, increased human resources in the health field or other changes. In addition, the continuing high level of staff shortages and slight rise in non-supportive supervisors (59.5% vs 58%) is notable, as other research in the region highlights that stress related to staff issues may be a key factor for burnout among healthcare professionals.[38]

These conclusions must be interpreted within the context of this study design. As a cross-sectional survey, it is impossible to determine the direction of causality. Participation in workplace wellness activities may have increased feelings of job satisfaction and efficacy and decreased stress and burnout. However, it is equally plausible that individuals who felt more satisfied and efficacious and less stressed and burnt out were more likely to participate in workplace wellness activities. Strengths of this study include a multilevel random sampling methodology, use of previously validated scales and a relatively high response rate (73%). Given the representative nature of the study, the results are likely generalisable to public health workforces in other low-income and middle-income countries.

The health systems of middle-income and low-income countries are facing a particularly important and challenging time. There has been marked progress towards key international initiatives including the United Nations Development Programme sustainable development goals, the UNAIDS 90-90-90 HIV treatment goals and the WHO initiatives for the elimination of mother to child transmission of HIV and syphilis. However, achievement of these ambitious goals requires intensified efforts. This can create tense environments for healthcare workers, leading high levels of stress, burnout and job dissatisfaction. This study has highlighted WWPs

as a potential avenue to support these vital staff. Further, it is possible that providing these types of activities may facilitate higher job satisfaction and lower levels of stress and burnout. Further, SET reinforces the implications of having such programmes formally codified as organisational policy. Piloting of similar programmes in similar strained healthcare systems could be extremely helpful in the attainment of key international public health and development goals.

Contributors JHL and NJK prepared the first draft, finalised the report based on feedback from other authors and analysed and interpreted the data. JHL, MM, HM, SM, B-wS and GOM helped provide overall guidance to the conduct of the study and were involved in the origination and development of the concept of the study. All authors reviewed the manuscript and provided comments.

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