The prevalence of burnout and depression in medical doctors working in the Cape Town Metropolitan Municipality community healthcare clinics and district hospitals of the Provincial Government of the Western Cape: a cross-sectional study

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Abstract

Aim: This study investigated burnout and depression in medical doctors in the context of work-related conditions and the role of resilience as a modifiable factor.

Method: A cross-sectional, observational study was conducted on consenting medical doctors (n = 132) working at Cape Town Metropolitan Municipality primary healthcare facilities of the Provincial Government of the Western Cape. Data were collected from doctors at 27 facilities by means of a self-administered questionnaire battery, containing socio-demographic information, the Beck Depression Inventory (BDI), the Maslach Burnout Inventory (MBI) and the Connor-Davidson Resilience Scale (CD-RISC).

Results: Of 132 doctors included in the analysis, 76% experienced burnout, as indicated by high scores in either the emotional exhaustion or depersonalisation subscales. In addition, 27% of doctors had cut-off scores on the BDI indicating moderate depression, while 3% were identified to have severe depression. The number of hours, work load, working conditions and system-related frustrations were ranked as the most important contributing factors to burnout. More experienced doctors and those with higher resilience scores had lower levels of burnout, as evident by their lower scores in the emotional exhaustion and depersonalisation domains of the MBI.

Conclusion: Both burnout and depression are prevalent problems in doctors working at district level and in communities. Resilience appears to be protective and may be a useful target for future intervention.

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Introduction

In South Africa, over the past few years, a central concern in healthcare services has been the inability to retain doctors.[1-4] The presence of depression and burnout in South African doctors, as possible contributory factors to global migration and the delivery of poor quality care by an overburdened healthcare system, is a topic of interest.

Burnout is a "a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, and is accompanied by distress, a sense of reduced effectiveness, decreased motivation and the development of dysfunctional attitudes and behaviour at work".[5] Three elements define the concept, namely emotional exhaustion, depersonalisation and low personal accomplishment.[6,7]

Studies carried out internationally have documented that between 22% and 60% of doctors reported experiencing burnout.[8-12] Locally conducted studies have been small in size, and have used a wide variety of measuring instruments, limiting the extrapolation of findings and comparisons across studies.[13-20] A national survey on randomly selected South African medical practitioners (n = 402 doctors) conducted in 2003, documented high levels of burnout (emotional exhaustion and depersonalisation).[17] A cross-sectional study performed on anxiety or depression in doctors working in Tygerberg Hospital found that 2% of doctors reported severe symptoms of depression and anxiety, 21% had moderate symptoms and 47% were symptom free.[18] According to Center et al,[21] depression, with a lifetime prevalence of 12.8%, seems to be as common in physicians as that in the general population. In South Africa, the life time prevalence of mood disorders in the general population between 2002 and 2004 was reported to be 9.8%.[22]

Common factors that contribute to burnout in doctors include an excessive workload, bad organisational work

culture, inappropriate training for work requirements, equipment and management problems, long working hours, little vacation time and a lack of support systems.[6,12,23-28] Burnout has also been associated with absent days from work, the inability to stay at one workplace, decreased job satisfaction and importantly, suboptimal patient care.[5,6,9,18,25,27]

Working in the district and community health services is a challenging task, and these settings provide a possible breeding ground for burnout and depression in medical doctors.[23] This study aimed to define the magnitude of the problem in order to motivate the development of an action plan that is within the reach of doctors who work in these settings. The objectives were to determine the prevalence of burnout and depression in these doctors, to explore contributory factors in these settings, to compare rates of burnout and depression in doctors working for different lengths of time (hours) and at varying experience levels, to explore the impact of burnout and depression on perceived patient care, to describe help-seeking behaviour and treatment taken, and to evaluate the level of resilience present.

Method

Study design

A cross-sectional, observational survey was conducted on medical doctors working in the Cape Town Metropolitan Municipality in community healthcare clinics and district hospitals of the Provincial Government of Western Cape.

Study population

An institution-based sample was used. This consisted of willing medical doctors working in the Cape Town Metropolitan Municipality district of the Provincial Government of the Western Cape. A list of the primary healthcare facilities in the Provincial Government of the Western Cape was obtained. Permission to conduct the study was obtained from the Provincial Government of Western Cape for the listed clinics and district hospitals. Woodstock and Area Community Health Centre (CHC) (five doctors) and Vanguard CHC (six doctors) were excluded owing to their settings being saturated by current research activities.

Inclusion criteria comprised:

- *Category of staff as per job description:* Interns in medicine, community service medical officers, medical officers, family medicine registrars, and family physicians or specialists working in the primary healthcare settings who met the inclusion criteria.
- To be eligible, doctors had to have worked in a primary healthcare facility, including a CHC, a community clinic or a district hospital of the Provincial Government of the Western Cape in the Cape Metropolitan Municipality for one month or longer.

Exclusion criteria were:

- Doctors exclusively performing locums.
- Doctors working mainly in the private sector.
- Doctors having worked for less than one month in the primary care public sector.
- Doctors working in city health clinics.
- Doctors working outside of the Cape Town Metropolitan Municipality area.

Doctors working at city health clinics (facilities run by the Cape Town municipality) were not included owing to working conditions, salaries and working hours differing substantially from conditions in the Provincial Government of the Western Cape. Until recently, Victoria Hospital, Karl Bremer Hospital, Somerset Hospital and Helderberg Hospital were classified as secondary hospitals, and were therefore excluded.

Facilities included: Bishop Lavis CHC, Crossroads CHC, Dr Abdurahman CHC, Elsies River CHC, Grassy Park CHC, Greenpoint CHC, Hanover Park CHC, Heideveld CHC, Khayelitsha CHC, Kraaifontein CHC, Lady Michaelis CHC, Lotus River CHC, Macassar CHC, Maitland CHC, Michaeal Mapongwana CHC, Mitchell's Plain CHC, Nolungile CHC, Nyanga CHC, Parow CHC, Reed Street CHC, Retreat CHC, Robbie Nurock CHC, Ruyterwacht CHC, Eerste Rivier Hospital, False Bay Hospital, Wesfleur Hospital and Khayelitsha District Hospital.

Data collection methods

Data were collected in the form of a structured and semi-structured, self-administered questionnaire. The questionnaire consisted of four parts. Part A included socio-demographic data and factors that contribute to burnout. A list of factors that are an issue in burnout was compiled from the evidence base[6,12,23-28] (Table I). Respondents were asked to rank the five most important factors ("1" being the most important and "5" being the least). Part B consisted of the Beck's Depression Inventory (BDI), Part C the Maslach Burnout Inventory (MBI), and Part D the Connor-Davidson Resilience Scale (CD-RISC) scale.

The BDI is a well-established questionnaire that has been widely used.[29] Reliability (Cronbach's alpha 0.86) and validity (coefficients 0.65 and 0.67) have been demonstrated in the literature.[29] The inventory consists of 21 items presented in a multiple-choice format. Numerical responses are summated to categorise depression according to a scoring key (Table II).

The CD-RISC has sound psychometric properties, with a Cronbach's alpha of 0.89.[28] In addition, convergent and discriminant validity has been shown in the literature.[28] It contains 25 items, all of which carry a 5-point Likert scale. Summation is carried out on the responses. A higher CD-RISC score corresponds to higher resilience.

The MBI was originally designed for the use in human service

Table I: Factors contributing to burnout, as used in the questionnaire

Factors
Number of hours[6,12,23-26]
Work load[23,26]
Working conditions[25,26]
Public system-related frustration[23,24]
Work stress and anxiety[6]
Balancing work and personal life[21,25]
Vacation limit[21]
Equipment[23]
Lack of management support[23]
Low work satisfaction[6,16,23,24,27]
Organisational work culture[5,26]
Threat of disease[19]
Tendency to overwork[27]
Personality traits[25,27,28]
Management problems[23,24]
Physical safety[19,23]
Lack of future opportunities[23]
Regret of career choice[25]
Lack of supervision[5,23,24]
Large body of knowledge needed[5,25]
Lack of on-site training[24]
Financial problems[23,27]
Insufficient training[5,23-26]
Rapid advancing technology[5,25]
Substance use[27,28]
Business and insurance concerns[25]

occupations, and is both a reliable and valid instrument.[6] The MBI has been tested extensively and internal reliability has been shown (Cronbach's alpha 0.71-0.9).[6] It contains a 7-point frequency scale for 22 items, ranging from "never" to "every day". Participants were given the option of not filling in an item or could write "never" if they "never" felt that way. Each of the subscales, emotional exhaustion, depersonalisation and personal accomplishment, were considered separately and not combined.[6] A scoring key adjusted specifically to measure burnout in the medical human service occupations (MBI-Human Services Survey) was used, and computed the total of the items in the frequency scale for every subscale in order to classify burnout in the low, average or high range, as demonstrated in Table II. The emotional exhaustion subscale assesses feelings of being emotionally overextended and exhausted by one's work. In addition, the depersonalisation subscale measures unfeeling and impersonal responses by the recipient towards the service, treatment, care or instruction. Finally, the personal accomplishment subscale assesses the lack of feelings of competence and successful achievement in the work with people. The higher the scores on the emotional exhaustion and depersonalisation subscale, the higher the degree of burnout. By contrast, the lower the score on the personal accomplishment scale, the higher the degree of burnout. A high score in emotional exhaustion or depersonalisation is considered to be indicative of clinically significant burnout.[6]

Table II: Categorisation of burnout and depression

Maslach Burnout Inventory classification			
Category	**Low range**	**Average range**	**High range**
Emotional exhaustion	≤ 18	19-26	≥ 27
Depersonalisation	≤ 5	6-9	≥ 10
Personal accomplishment	≥ 40	39-34	≤ 33
Beck Depression Inventory classification			
Total score	**Mild depression**	**Moderate depression**	**Severe depression**
	< 15	15-30	> 30

Prior to the period of data collection, facilities were telephonically contacted to introduce the study to managers, to identify a contact person, to obtain a list of doctors working there at the time of data collection, and to distribute advertising material ahead of time. Managers were asked permission for an appropriate time to invite doctors working at the facility and to distribute written invitations and conduct data collection. Laminated posters were placed at strategic sites with the arranged time of data collection stated, and e-mail advertisements sent to contact persons.

Approval to conduct the study was obtained from the University of Stellenbosch Health Research Ethics Committee. Participation was voluntary, anonymous, and by means of informed consent. The dilemma of maintaining anonymity and confidentiality versus the need for beneficence was addressed by supplying participants with written instructions of where help for symptoms of depression and/or burnout could be obtained. A psychologist and psychiatrist formed part of the research team in the event of emotional distress caused by the study. There were no adverse events and no conflict of interest pertaining to this study.

Data collection

A pilot study was conducted on 22 October 2010 at Paarl Hospital on a sample of 13 doctors with characteristics that were as close as possible to those in the intended study population, to obtain information on the sampling frame, quality of the questionnaire from participant responses and the completion rate. These participants were not included in the final study. Research assistants were trained and accompanied by the researcher, where possible.

Data were collected between 1 November 2010 and 15 December 2010. Facilities were visited in a prearranged

timeslot, a presentation with information on the study and procedures was carried out, and confectionery supplied. The presentation included information on the aim and objectives of the study, the structure of the questionnaire and how to fill it in, informed consent, anonymity and how to give feedback. Doctors were given contact detail cards to contact the research team if any distress was experienced, or help needed. Participants could provide their contact details for notification of the results, and were provided with a scoring key for the questionnaire after placing it in a closed container. The scoring key also enabled participants to calculate their own scores and facilitated interpretation of the findings.

Statistical analyses

Frequency tables, means and standard deviations were used for summary purposes. The prevalence of burnout and depression was correlated with socio-demographic variables. Spearman correlations were calculated to investigate relationships between continuous variables, and one-way analysis of variance used to compare the means of continuous variables between different groupings of doctors. Statistical significance was reported on a 95% confidence interval. The tests were two sided and a 5% significance level (p-value < 0.05) was used as a guideline to determine significant relationships.

Results

Demographic characteristics of the sample

One hundred and thirty-five medical doctors participated from a total 147 eligible candidates (a response rate of 92%). Eight participants were on leave during the data collection period, and four participants did not want to participate. Two questionnaires were filled in incorrectly. One participant was a locum doctor. Thus, 132 questionnaires were used for data analysis (Figure 1).

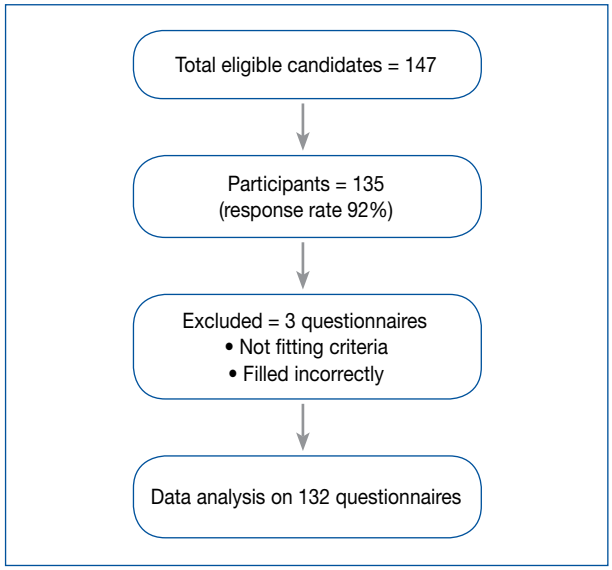


Figure 1: Participant selection

Table III contains the socio-demographic data of the respondents. The majority were male (52%) and married (58%). Most doctors (85%) worked overtime, and notably, 54% worked 64 or more hours of overtime per month. Medical officers formed the dominant group (82%). Sixty-five per cent of medical practitioners worked at primary healthcare facilities, 24% at district hospital level, and 11% at both types of facilities.

Burnout and depression

Twenty-seven per cent (36 participants) were classified as having moderate depression and 3% (four participants) as having severe depression (Figure 2). Seventy per cent of participants had symptoms suggestive of mild depression. High levels of burnout were experienced in the domains of emotional exhaustion (53%), depersonalisation (64%) and personal accomplishment (43%), as indicated in Figure 3. Seventy-six per cent (100 of 132) of participants scored high on either the emotional exhaustion or the depersonalisation subscales of the MBI (Table IV). Only 5% (6 of 132) of participants had low levels of burnout in all subscales. The most important factors cited as contributing to burnout and depression are provided in Table V.

Relationship between selected respondent characteristics, burnout, depression and resilience

Time employed in the primary care setting and years qualified negatively correlated with both emotional exhaustion (p-value < 0.01) and depersonalisation (p-value < 0.01) scores. Years qualified correlated negatively (p-value 0.04)

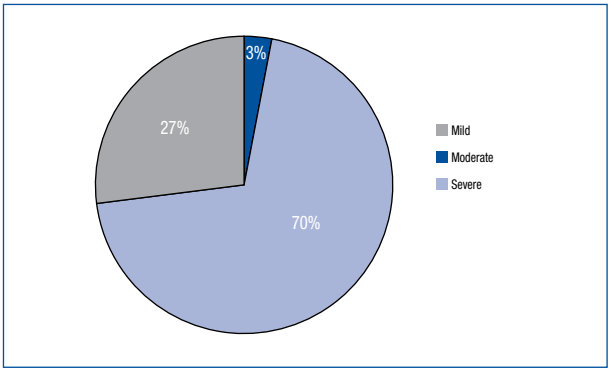


Figure 2: Depression experienced by primary healthcare doctors

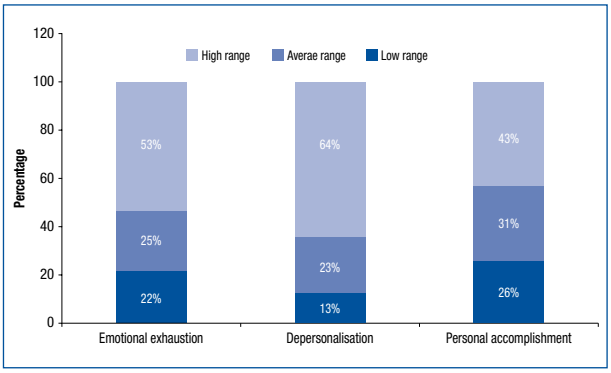


Figure 3: Burnout experienced by primary healthcare doctors

Table III: The socio-demographic and job characteristics of respondents (n = 132)

Variables	n	%
Gender		
Male	68	52
Female	64	48
Marital status		
Married	76	58
Single	37	28
Living together	13	10
Other	6	5
Job description		
Intern	11	8
Community service officer	32	24
Medical officer	18	14
Senior medical officer	29	22
Principal medical officer	29	22
Registrar	3	2
Family physician	7	5
Specialist	3	2
Facility worked in		
Community health centre	86	65
District hospital	32	24
Both (community health centre and district hospital)	14	11
Years qualified		
Mean (standard deviation)	9.49 (SD 9.69)	
Time employed in primary care (months)		
Mean (standard deviation)	60.13 (SD 83.01)	
Overtime hours per month		
Nil	20	15
1-31 hours	23	17
32-63 hours	17	13
64-79 hours	49	37
80 or more hours	23	17
Presence of life change		
Yes	42	32
No	90	68
Perceived delivered quality of care		
Extremely poor	2	2
Poor	8	6
Acceptable	36	27
Good	72	55
Extremely good	14	11

SD: standard deviation

with the BDI score. In addition, community service officers had significantly (p-value < 0.01) higher depersonalisation scores than other job categories. Furthermore, the number of overtime hours worked was negatively correlated with scores of personal accomplishment (p-value 0.03).

Table IV: Burnout experienced by primary healthcare doctors

Score range of burnout (MBI)	Number of participants	Percentage n = 132
High range in any subscale	111	84
High range in emotional exhaustion or depersonalisation	100	76
High range in emotional exhaustion and depersonalisation	55	42
No high range in any subscale	21	16
Low range in all subscales (engagement)	6	5

MBI: Maslach Burnout Inventory

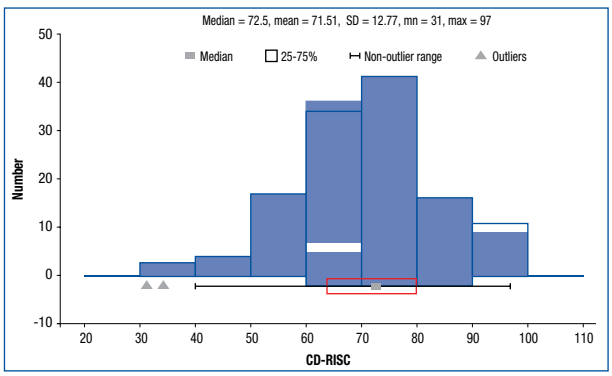
Perceived delivered quality of care also correlated negatively with emotional exhaustion (p-value < 0.01), depersonalisation (p-value < 0.01), personal accomplishment (p-value < 0.01) and BDI scores (p-value < 0.01). The use of treatment was positively associated with emotional exhaustion (p-value < 0.01) and BDI scores (p-value < 0.01). The presence of life changes was not associated with burnout or depression.

The median score of respondents on the CD-RISC was 72.5 (standard deviaion 12.77, minimum 31, maximum 97), and is displayed in Figure 4. The CD-RISC score correlated negatively with emotional exhaustion (p-value < 0.01), depersonalisation (p-value < 0.01) and the BDI score (p-value < 0.01). Furthermore, CD-RISC scores correlated positively with scores of personal accomplishment (p-value < 0.01) and delivered quality of care (p-value < 0.01). In addition, participants using medication had a lower CD-RISC score (p-value 0.03). There were no statistically significant correlations between the CD-RISC score and gender, marital status, job description, overtime hours, years qualified or time employed.

Table V lists the factors that contribute to burnout in primary healthcare doctors.

Medication or treatment use

Twenty-three per cent (30 of 132) of medical practitioners were using medications or another form of treatment



CD-RISC: Connor-Davidson Resilience Scale, max: maximum, min: minimum, SD: standard deviation

Figure 4: Distribution of Connor-Davidson Resilience Scale scores of the participants

Table V: Factors that contribute to burnout in primary healthcare doctors

Mean ranking of factors in order of perceived importance	Variable
1	Number of hours
2	Work load
3	Working conditions
4	Public system-related frustration
5	Work stress and anxiety
6	Balancing work and personal life
7	Vacation limit
8	Equipment
9	Lack of management support
10	Low work satisfaction

for anxiety or depression symptoms. This comprised antidepressants in 16% and anxiolytics in 7%. Other treatment included counselling (7%), psychotherapy (6%) and alternative medication (5%).

Of the 40 patients categorised with moderate to severe depression, 45% reported taking medication or another treatment. Of the 76% (100 of 132) of doctors who scored in the high range of burnout in either the depersonalisation or emotional exhaustion subscales, only 27% had received treatment (any form), 8% had received psychotherapy, 7% counselling, 8% anxiolytics and 18% antidepressants.

Discussion

The key findings in this study are that burnout and depression were common in district and community level doctors, and that resilience and experience were protective against burnout. It is notable that 76% of doctors experienced clinically significant burnout, as indicated by high scores in either the emotional exhaustion or depersonalisation subscales. Of these, 53% of medical doctors had high scores for emotional exhaustion. This suggests that more than half of doctors working in these primary care settings feel emotionally overextended and exhausted by their work.[6] Furthermore, 43% of doctors feel unhappy with themselves and are dissatisfied with their job accomplishments, as indicated by low scores in the personal accomplishment subscale.[6] The relatively high levels of burnout in the subscale of personal accomplishment may reflect the circumstances that relate to working in a primary healthcare setting, as well as feelings of being ill-equipped to deal with these circumstances.

It is also concerning that 64% of doctors had a callous or even dehumanised perception of their patients, as indicated by high depersonalisation scores.[6] Community service medical officers had a significantly higher score as a group in the depersonalisation subscale than those in other job descriptions. These results highlight the urgent need for policy-makers to address the work circumstances of these medical practitioners, and to create a system that will enhance motivation and job satisfaction.

Our study found higher mean scores for emotional exhaustion (28.3 vs. 24.2) and depersonalisation (13.8 vs. 11.4), when compared to the mean scores of a national survey on South African medical practitioners.[17] Furthermore, our results suggest higher rates of emotional distress in medical doctors in these primary care settings, compared to doctors in a tertiary care setting (Tygerberg Hospital).[18]

According to Maslach et al,[6] the state that is opposite to burnout is engagement, which is characterised by low emotional exhaustion, low depersonalisation and high personal accomplishment.[6] In this study, only 5% of doctors experienced engagement with their work. Twenty-seven per cent of doctors experienced moderate depression and 3% severe depression. This rate is considerably higher than the lifetime prevalence of depression (9.8%) that has been documented in the South African general population.[22] The number of hours worked, the work load, working conditions and public system-related frustrations were ranked as the most important factors that contributed to burnout. This corresponds with existing data, and with current circumstances in primary care settings, where doctors are limited in number, and yet services are needed 24 hours a day. These are important factors to consider when devising management and organisational strategies as they can be "push" factors for the migration of doctors.[23] Doctors who worked longer hours felt that they had accomplished less as demonstrated by lower personal accomplishment scores, with decreased productivity after a certain number of hours worked. This highlights the need for this to be considered for after-hours protocols. The longer a primary care doctor was qualified or employed in the primary care setting, the lower the levels of emotional exhaustion and depersonalisation experienced. This means that the employment and retention of more senior doctors is required who can play a pivotal role in supervising and supporting younger colleagues. Supervision and management are factors that influence the competencies of junior doctors.[23] In the present study, the impact of burnout and/or depression on the delivery of patient care was underscored by the association of lower emotional exhaustion, depersonalisation and/or depression scores, with better perceived delivered quality of care.

Twenty-three per cent of doctors took medication or another form of treatment for anxiety and depression. The more depressive symptoms a doctor had, the more likely he or she was to be taking treatment. However, 55% of doctors classified with moderate to severe depression, and 73% of participants with a high range of burnout in either the emotional exhaustion or depersonalisation subscales, were not using any treatment. This might be because of stigma or denial relating to symptoms, an inability to self-diagnose,

and/or delays in initiating health-seeking behaviour.[30,31] The relatively higher use of antidepressants may reflect an "easier way" of dealing with the symptoms.

Higher levels of resilience correlated with lower scores with regard to emotional exhaustion, depersonalisation and depression. In addition, the greater the resilience, the higher the personal accomplishment scores. Resilience is a measure of a person's stress coping ability, and can be seen as a target for interventional measures when combating burnout.[28] Thus, improving resilience in doctors in primary healthcare settings is likely to increase their feelings of accomplishment and job satisfaction and to decrease burnout.

There were several limitations to this study. The cross-sectional nature of the study excluded participants who were on leave. The period during which the study was conducted (November and December) may also have contributed to inflation in the rates of burnout and depression. However, MBI scores have been found to be stable over a period of three months to one year.[6] Finally, while both the MBI and BDI are gold-standard measures for the assessment of the constructs investigated here, they are self-report measures and prone to subjectivity bias.

Conclusion

Burnout and depression are common problems in doctors at district and community level in the Western Cape, and are likely to impact negatively upon the delivery of quality care. Efforts that focus on supporting junior doctors, improve work circumstances and retain experienced doctors, are critical. This study suggests that resilience is a useful target for future intervention. In addition, the degree of work engagement is important to include as a measure in quality improvement cycles. Other intervention strategies to prevent burnout in doctors should focus on job satisfaction, management structures, organisational climate, person-directed methods and the use of health technology.

Future research in other provinces utilising the BDI and the MBI is suggested to allow for a cross-provincial comparison, and a better overall description of the problem in the South African primary healthcare system. Furthermore, an urgent action plan to address burnout and depression in these settings needs to be developed and its efficacy evaluated.

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