The prevalence of burnout and depression among medical doctors working in the Cape Town metropole community health care clinics and district hospitals of the Provincial Government of the Western Cape: A Cross-Sectional Study

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Declaration

I, the undersigned, hereby declare that the work contained in this assignment is my original work and that I have not previously submitted it, in its entirety or in part, at any university for a degree.

Signature: LRossouw

Date: 20/8/2011

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Abstract

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

Methods: A cross-sectional, observational study was conducted on all consenting medical doctors (N=132) working at Cape Town metropole primary health care 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 on 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 with 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 lower scores on the emotional exhaustion and depersonalisation domains of the MBI.

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

Background

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

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

Studies done internationally have documented that between 22 – 60 % of doctors report experiencing burnout.[8-12] Locally conducted studies have been small in size and have used a wide variety of measuring instruments, limiting extrapolation of findings and comparisons across studies.[13-20] A National Survey among randomly selected South African medical practitioners (N=402 doctors) conducted in 2003, documented high levels of burnout (emotional exhaustion and depersonalization).[17] A cross-sectional study done on anxiety or depression in doctors working in Tygerberg Hospital found that 2 % of doctors reported severe symptoms of depression/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 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 contributing to burnout in doctors include excessive workload, bad organizational work culture, inappropriate training for actual work requirements, equipment problems, 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, inability to stay at one workplace, decreased job satisfaction and importantly suboptimal patient care.[5,6,9,18,25,29]

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 for the development of an action plan within reach of doctors working in these settings. The objectives were to determine the prevalence of burnout and depression among these doctors, to explore contributory factors in these settings, to compare rates of burnout and depression in doctors working different amounts of time (hours) and at different 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.

Methods

Study design

A cross-sectional, observational survey was conducted among medical doctors working in the Cape Town metropole in community health care clinics and district hospitals of the Provincial Government of Western Cape.

Study population

An institution-based sample was used. This consisted of all willing medical doctors working in the Cape Town metropole District of the Provincial Government of the Western Cape. A list of all the primary health care facilities in the PGWC was obtained. Permission to conduct the study was obtained from the Provincial Government of Western Cape (PGWC) for all listed clinics and district hospitals. Woodstock CHC (5 doctors) and Vanguard CHC (6 doctors) were excluded owing to their settings being saturated by current research activities.

Inclusion criteria comprised: 1) Category of staff as per job description: interns in medicine or community service medical officers or medical officers or family medicine registrars or family physicians or specialists working in the primary health care settings that met the inclusion criteria. 2) To be eligible, all doctors had to have worked in a primary health care facility including a community health centre (CHC), a community clinic or a district hospital of the PGWC in the Cape Metropole for 1 month or longer.

Exclusion criteria were: 1) doctors exclusively doing locums, 2) doctors working mainly in the private sector, 3) doctors having worked for less than 1 month in public sector primary care, 4) doctors working in city health clinics, 5) doctors working outside of the Cape Town metropole 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 services (PGWC). Victoria Hospital, Karl Bremer Hospital, Somerset Hospital and Helderberg Hospital were, until recently, 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 M 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 was 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 contributing to burnout. A list of factors contributing to burnout was compiled from the evidence-base[6,12,23-28] as displayed in 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 Beck Depression Inventory is a well-established questionnaire that has been widely used.[30] Reliability (Cronbach alpha: 0.86) and validity (coefficients: 0.65, 0.67) have been demonstrated in the literature.[30] 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 I).

The Connor-Davidson Resilience scale (CD-RISC) has sound psychometric properties with a Cronbach alpha of 0.89.[31] In addition convergent and discriminant validity has been shown in the literature.[31] It contains 25 items, all of which carry a 5-point likert scale and summation is done of the responses. A higher CD-RISC score corresponds to higher resilience.

The Maslach Burnout Inventory (MBI) was originally designed for the use in human service 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 of 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 (EE), depersonalisation (DP) and personal accomplishment (PA), were considered separately and not combined.[6] A scoring key adjusted specifically to measure burnout in the medical human service occupations (MBI-HSS) 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 toward the recipient of one's service, treatment care or instruction. Finally, the personal accomplishment subscale assesses the lack of feelings of competence and successful achievement in one's work with people. The higher the scores on the emotional exhaustion and depersonalisation subscale, the higher the degree of burnout. In contrast, the lower the score on the personal accomplishment scale, the higher the degree of burnout. A high score in emotional exhaustion or depersonalization is considered to be indicative of clinically significant burnout.[6,29]

Prior to the period of data collection, all 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 all doctors working at the facility by distributing written invitations and to conduct data collection. Laminated posters were placed at strategic sites with the arranged time of data collection stated and e-mail advertisements were 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 case of emotional distress caused by the study. There were no adverse events and no conflicts of interest pertaining to this study.

Table I. Factors contributing to burnout as used in the questionnaire

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

Table II. Categorisation of Burnout and Depression

MASLACH BURNOUT INVENTORY CLASSIFICATION			
Category	Low Range	Average Range	High Range
EE (Emotional Exhaustion)	≤18	19-26	≥27
DP (Depersonalisation)	≤5	6-9	≥10
PA (Personal Accomplishment)	≥40	39-34	≤33
BECK DEPRESSION INVENTORY CLASSIFICATION			
	Mild Depression	Moderate Depression	Severe Depression
Total score	<15	15-30	>30

Data collection

A pilot study was conducted on 22/10/2010 at Paarl Hospital on a sample of 13 doctors with characteristics as close as possible to 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 was collected between 1/11/2010 and 15/12/2010. Facilities were visited in a prearranged timeslot, a presentation with information regarding the study and procedures was done and confectionaries were 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 the giving of feed-back. Doctors were given contact detail cards, to contact the research team if any distress was experienced or if help was 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 the interpretation of findings.

Statistical analyses

For summary purposes frequency tables, means and standard deviations were used. 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 (ANOVA) was used to compare means of continuous variables between different groupings of doctors. Statistical significance was reported on a 95 % confidence interval, all tests were two-sided and a 5 % significance level ($p<0.05$) was used as guideline for determining significant relationships.

Results

Demographic characteristics of the sample

A total of 135 medical doctors participated out of a total 147 eligible candidates (response rate 92%). Eight participants were on leave during the period of data collection and 4 participants did not want to participate. Two questionnaires were filled in incorrectly and one participant was a locum doctor. Thus 132 questionnaires were used for data analysis (Figure 1).

Table III contain the socio-demographic data of respondents. The majority of respondents 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 percent of medical practitioners worked at primary health care facilities, 24 % at district hospital level and 11 % worked at both types of facilities.

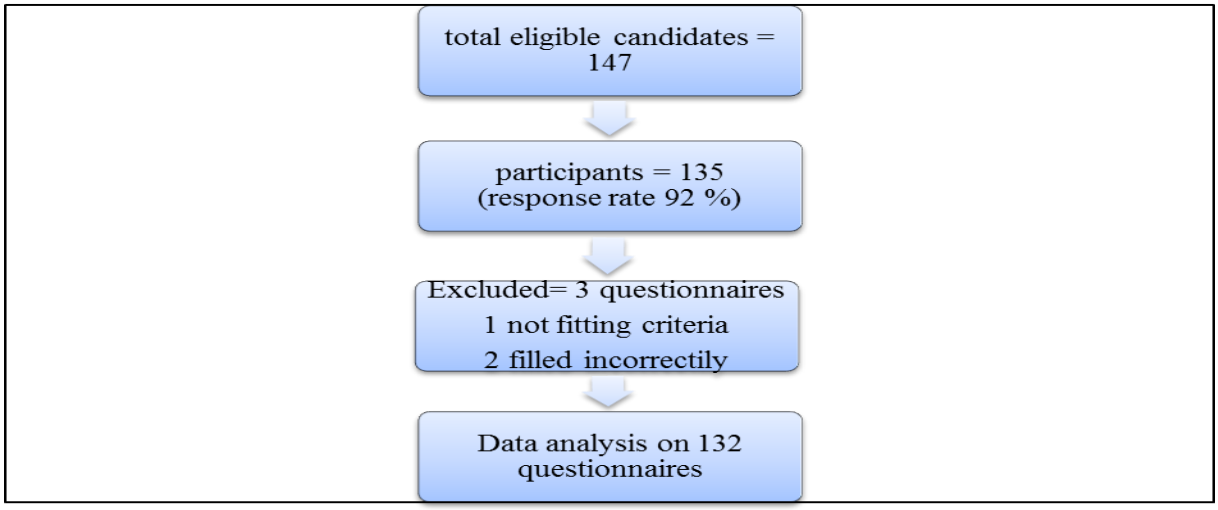

Figure 1. Participant selection

Table III. 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 (COSMO)	32	24
Medical Officer (MO)	18	14
Senior Medical Officer (SMO)	29	22
Principal Medical Officer (PMO)	29	22
Registrar	3	2
Family Physician	7	5
Specialist	3	2
Facility worked in		
Community Health Centre (CHC)	86	65
District Hospital (DH)	32	24
Both (CHC + DH)	14	11
Years qualified		
Mean (SD)	9.49 (SD: 9.69)	
Time Employed in Primary Care (months)		
Mean (SD)	60.13 (SD: 83.01)	
Overtime hours per month		
Nil	20	15
1-31 hrs	23	17
32-63 hrs	17	13
64-79 hrs	49	37
80/more hrs	23	17
Presence of Life Change		
Yes	42	32
No	90	68
Perceived quality of care delivered		
Extremely poor	2	2
Poor	8	6
Acceptable	36	27
Good	72	55
Extremely good	14	11

Burnout and depression

Twenty-seven percent (36 participants) were classified as having moderate depression and 3 % (4 participants) as having severe depression (Figure 2). Seventy percent of participants had symptoms suggestive of mild depression. High levels of burnout were experienced on domains of emotional exhaustion (53 %), depersonalisation (64 %) and personal accomplishment (43 %) as displayed in Figure 3. Seventy-six percent (100 out of 132) of participants scored high on either the emotional exhaustion or the depersonalisation subscales of the MBI (Table IV). Only 5 % (6 out 132) of participants had low levels of burnout in all subscales. The most important factors cited as contributing to burnout and depression are displayed in Table V.

Relationship between selected respondent characteristics, burnout, depression and resilience

Time employed in the primary care setting and years qualified were negatively correlated with both emotional exhaustion (P<0.01) and depersonalisation (p<0.01) scores. Years qualified correlated negatively (p= 0.04) with the BDI score. In addition community service officers had significantly (p<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=0.03).

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

The median score of respondents on the Connor Davidson Resilience Scale (CD-RISC) was 72.5 (SD: 12.77 min=31.0 max=97.0) and is displayed in Figure 4. The CD-RISC score correlated negatively with emotional exhaustion (<0.01), depersonalisation (p<0.01) and the BDI score (p<0.01). Furthermore, CD-RISC scores correlated positively with scores of personal accomplishment (p<0.01) and quality of care delivered (<0.01). In addition, participants using medication had a lower CD-RISC score (p=0.03) and 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 IV. Burnout experienced by primary health doctors

Score range of Burnout (MBI)	**Number of participants**	**Percentage (n=132)**
High range in Any Subscale	111	84%
High range in EE or DP	100	76%
High range in EE and DP	55	42%
No High range in Any Subscale	21	16%
Low range in All Subscales (engagement)	6	5 %

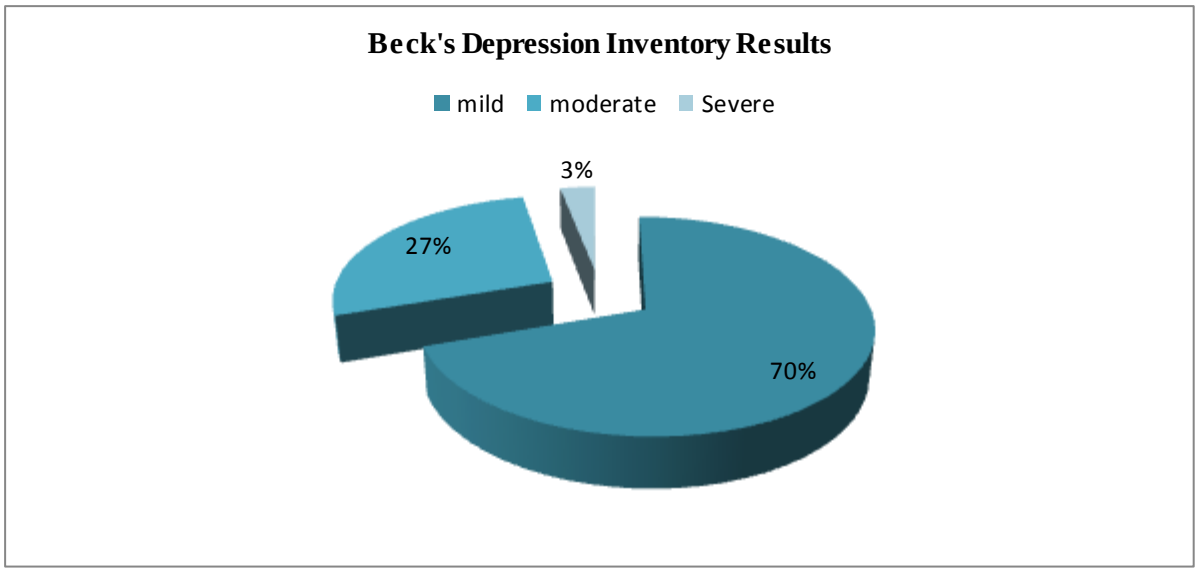

Figure 2. Depression experienced by primary health care doctors

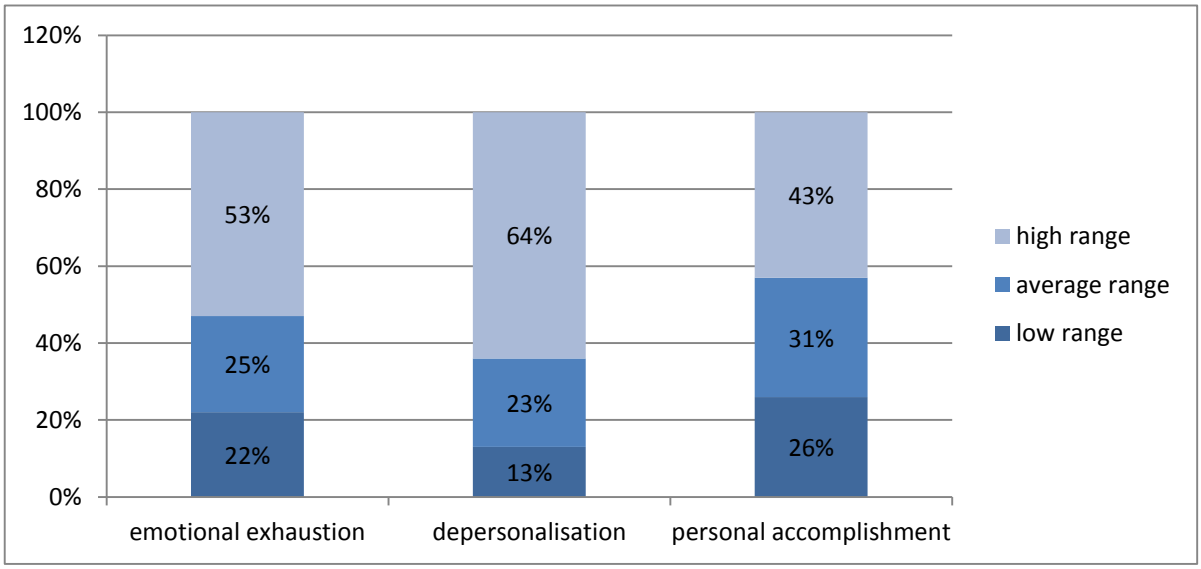

Figure 3. Burnout experienced by primary health care doctors

Table V. Factors contributing to burnout in primary health care 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

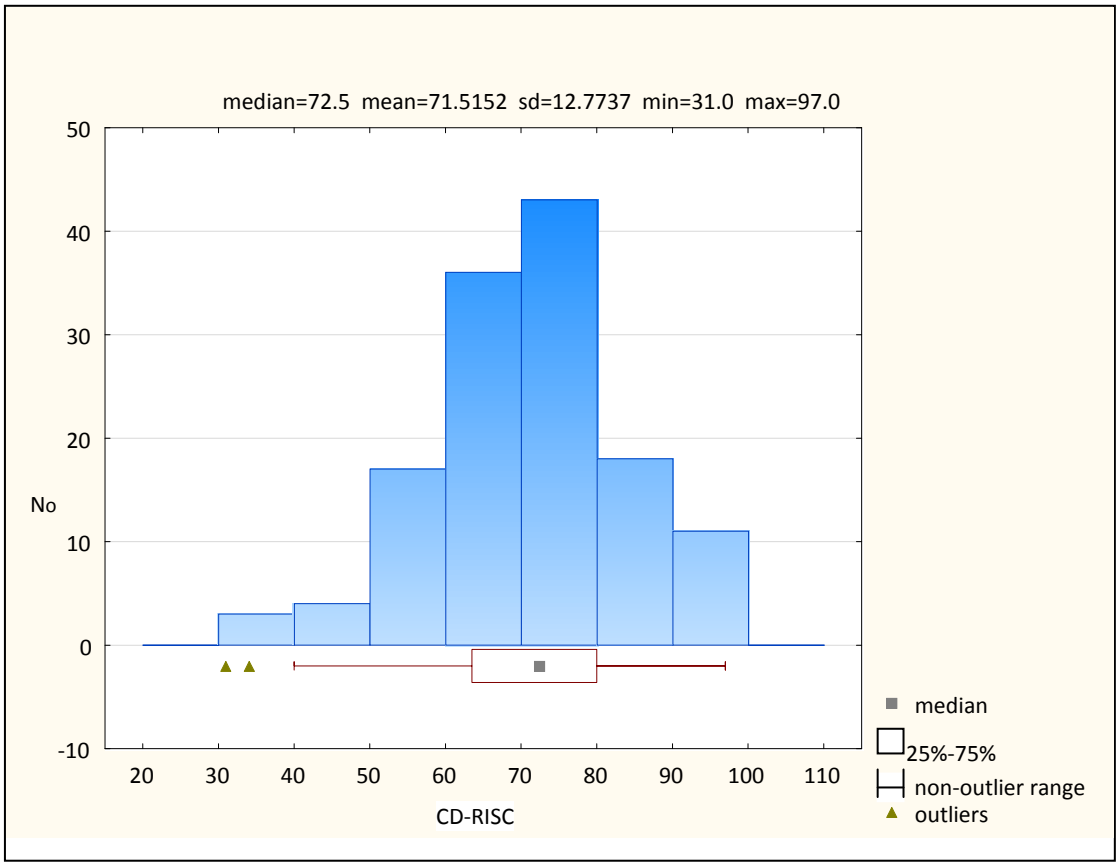

Figure 4. Distribution of CD-RISC scores of participants

Medication or treatment use

Twenty-three percent (30 out of 132) of medical practitioners were using medications or another form of treatment for anxiety or depression symptoms. This comprised antidepressants in 16% and anxiolytics in 7 %. Other treatments included counselling in 7%, psychotherapy in 6 % and alternative medication in 5 %.

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

Discussion

The key findings in this study are that burnout and depression are common among district and community level doctors and that resilience and experience are protective against burnout. It is notable that 76 % of doctors experienced clinically significant burnout, as indicated by high scores on either the emotional exhaustion or depersonalisation subscales. Of these, 53 % of medical doctors who participated had high scores on emotional exhaustion. This suggests that more than half of doctors working in these primary care settings is feeling 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 on the personal accomplishment subscale.[6] The relatively high levels of burnout on the subscale of personal accomplishment may reflect circumstances of working in primary health care settings, as well as feelings of being ill-equipped to deal with these circumstances.

It is also concerning that 64 % of doctors have a callous or even dehumanized perception of their patients as indicated by high depersonalisation scores.[6] Community service medical officers had a significantly higher score as a group for 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 create a system that would enhance motivation and job satisfaction.

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

According to Maslach et al[6] the state opposite to burnout is engagement, which is characterised by low emotional exhaustion, low depersonalization and high personal accomplishment.[6] In this study only 5 % of doctors experienced engagement with their work. Twenty seven percent of doctors experienced moderate depression and 3 % severe depression. This rate is considerably higher than the life time prevalence of depression (9.8 %) 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 contributing to burnout. This corresponds with existing data and with current circumstances in primary care settings where doctors are limited in numbers and services are needed 24 hours a day. These are important factors to consider in management and organizational strategies, as they can be 'push' factors for migration of doctors.[23] Doctors who worked longer hours, felt that they accomplished less as demonstrated by lower personal accomplishment scores with decreased productivity after a certain amount of hours worked, highlighting 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 argues for the employment and retention of more senior doctors who should also 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 is underscored by the association of lower emotional exhaustion, depersonalisation and/or depression scores with better perceived quality of care delivered.

Twenty three percent of doctors were taking medication or another form of treatment for anxiety/depression. The more depressive symptoms a doctor had, the more likely he/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 due to the stigma or denial related to symptoms, an inability to diagnose one self and/or delays in initiating health-seeking behaviour.[32-34,38] The relatively higher use of anti-depressants may reflect an 'easier way' of dealing with the symptoms.

Higher levels of resilience correlated with lower scores on 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 to combat burnout.[31] Thus, improving resilience in doctors in primary health care settings is likely to increase their feelings of accomplishment and job satisfaction and decrease burnout.

There are several limitations to this study. First, the cross-sectional nature of the study excluded participants who were on leave. Second, the period during which the study was conducted (November and December) may have contributed to an inflation of rates of burnout and depression. This said, Maslach Burnout Inventory 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 assessment of the constructs investigated here, they are self-report measures and prone to subjectivity bias.

Conclusion

Burnout and depression are common problems among doctors at district and community level in the Western Cape and are likely to impact negatively upon the delivery of quality care. Efforts focusing on supporting junior doctors, improving work circumstances and retaining 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, organizational climate, person-directed methods and the use of health technology.[35-39]

Future research in other provinces utilising the Beck's Depression Inventory and the Maslach Burnout Inventory is suggested to allow for cross-provincial comparison and a better overall description of the problem in the South African primary health care 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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