Mental Well-being of Doctors and Nurses in Two Hospitals in Kingston, Jamaica

JLM Lindo[1], A McCaw-Binns[1], J LaGrenade[1], M Jackson[1], D Eldemire-Shearer[1]

ABSTRACT

Hospital work involves some of the most stressful situations found in any workplace. Furthermore, hospital workers may be affected by non-work-related stress such as family responsibilities and financial difficulties, leading to impaired mental well-being and suboptimal performance. The aim of this study was to assess the level of general mental well-being among doctors and nurses from two hospitals in Kingston, Jamaica. A total of 212 doctors and nurses at the Kingston Public Hospital and the University Hospital of the West Indies were studied yielding a participation rate of 83.1%. A self-administered questionnaire was used to gather social and biomedical data and the General Health Questionnaire 30 (GHQ 30) used to determine general mental well-being. Probable caseness was defined as a GHQ 30 score > 5. Focus group discussions were also held with staff at both hospitals. A total of 27.4% of the study population met the GHQ-30 criteria (caseness) defining them as probable cases of mental distress. Cases and non-cases were not different in age, gender or hospital of employment. However, caseness was associated with years of professional experience, work-related and non-work-related stress, serious financial difficulties and fears of coming to work. Significant predictors of increased risk of caseness were fear of coming to work (OR 3.06; CI 1.40, 6.70); professional experience in excess of five-years and high non-work-related stress. High work-related stress was associated with reduced risk of being classified a case, suggesting that work may have been therapeutic. Focus group discussions suggested that non-work stress was related to financial difficulties, commuting and child care, especially among nurses. Intervention to improve general mental well-being should be targeted at new employees and should address child care, commuting and financial management.

Bienestar Mental de Doctores y Enfermeras en dos Hospitales en Kingston, Jamaica

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RESUMEN

El trabajo en un hospital conlleva algunas de las situaciones más estresantes que puedan encontrarse en cualquier centro de trabajo. Además, los trabajadores hospitalarios pueden verse afectados por formas de estrés que no guardan relación directa con su trabajo, tales como responsabilidades fami-liares o dificultades financieras, las cuales traen como consecuencia perjuicios para el bienestar mental y una disminución del rendimiento laboral por debajo del nivel óptimo. El objetivo de este estudio es evaluar el nivel del bienestar mental general entre los doctores y enfermeras de los dos hospitales de Kingston, Jamaica. Se estudiaron un total de 212 doctores y enfermeras del Hospital Público de Kingston y el Hospital Universitario de West Indies, para una tasa de participación de 83.1%. Se aplicó una encuesta auto-administrada a fin de compilar datos biomédicos y sociales, y el Cuestionario de Salud General (CSG 30), usado para determinar el bienestar mental general. La casuidad[1] probable se definió como una puntuación de CSG 30 > 5. También se sostuvieron dis-cusiones de grupos de enfoque con el personal de ambos hospitales. Un total de 27.4% de la población bajo estudio satisfizo los criterios de CSG 30 (casuidad), que la definen como casos probables de angustia mental. Los casos y los no casos no difirieron en edad, género u hospital de empleo. Sin embargo, la casuidad estuvo asociada con los años de experiencia profesional, estrés relacionado con el trabajo y estrés no relacionado con el trabajo, dificultades financieras serias, y miedo de ir a trabajar. Los predictores significativos del aumento de riesgo de casuidad fueron: el miedo de ir a trabajar (OR 3.06; CI 1.40, 6.70); la experiencia profesional mayor de cinco años; y el estrés elevado no relacionado con el trabajo. El alto estrés relacionado con el trabajo estuvo asociado con la reducción de riesgo de ser clasificado

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como caso, lo cual sugiere que el trabajo puede haber sido un factor terapéutico. Las discusiones de grupo de enfoque sugieren que el estrés no relacionado con el trabajo estaba asociado con las dificultades financieras, el viaje diario de ida y vuelta al trabajo y la atención a los niños, especialmente entre las enfermeras. La intervención general con el propósito de mejorar el bienestar mental debe dirigirse a los nuevos empleados, y debe abordar el problema del cuidado de los niños, el viaje diario al trabajo y la administración financiera.

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INTRODUCTION

Hospital work often requires coping with some of the most stressful situations found in any workplace. Workers in hospitals must deal with life-threatening injuries and illnesses complicated by overwork, under-staffing, tight schedules, paper-work, intricate or malfunctioning equipment, complex hierarchies of authority and skills, dependent and demanding patients, and patient deaths, all of which are significant contributors to stress (1).

These factors may be important contributors to an unhealthy workplace in the hospital setting. Interventions to reduce the occurrence of these factors where they are present are likely to result in better performance of the employees in the institutions. Furthermore, stressful aspects of the job such as overstretched bed allocation, long hours of work, stress of personal and family life and compromising standards when resources are short have been associated with psychological distress or depression in nurses (2). There was also a reported high level of violence in Jamaican hospitals and workers were often exposed to verbal and physical abuse in these settings (3). The effect of this on the workers has not been thoroughly quantified.

High exposure to stressful events among medical personnel may manifest itself in several different outcomes including depression, anxiety, self-doubt, post traumatic stress disorder, loss of sleep and disturbed relationships with family. The resulting stress-related mental impairment among these workers may result in sub-optimal performance and delivery of less than best care to their clients. Health workers may also experience burnout as a result. Burnout, which is exhaustion of physical or emotional strength as a result of prolonged stress or frustration, has been detected in a wide variety of healthcare providers (4). A study of 600 workers in the United States of America indicated that burnout resulted in lowered production, and increases in absenteeism, healthcare costs and personnel turnover (4).

Hospital workers are also exposed to non-job-related stressors. In Jamaica, these include violence in selected urban areas, financial problems and personal demands associated with family responsibilities, commuting and child care (5, 6). Stress at work and outside of work contributes to the anxiety and depressive disorders experienced by healthcare staff (7).

The objectives of this study were to assess the mental well-being of doctors and nurses at two tertiary care referral hospitals in Kingston, Jamaica, using the General Health Questionnaire 30 (GHQ 30) (8) and to investigate associations between demographic and occupational factors and mental health status. The findings may be used to facilitate the development of targeted interventions for health-sector staff where necessary.

SUBJECTS AND METHODS

The Kingston Public Hospital

The Kingston Public Hospital (KPH) is a tertiary care 500 bed institution established in 1776. It is the major trauma centre for Jamaica and its location in downtown Kingston makes it accessible to a wide cross-section of the general population. The hospital treated 258 328 patients in 2000 and runs a range of diagnostic and rehabilitative services including radiology, intensive care unit, physical therapy and substance/drug abuse intervention. The KPH is located in close proximity to communities with high levels of violence and gang warfare. Violence accounts for 11% of the hospital's major trauma budget (6).

The University Hospital of the West Indies

The University Hospital of the West Indies was established in 1948 to serve as the main medical teaching institution in the English-speaking Caribbean. Its current bed capacity is 520. The hospital admitted 20 449 patients in 2001.

Sample

The sampling frame consisted of all nurses and doctors employed at the KPH and UHWI and assigned to the following specialities: Accident and Emergency, Anaesthetics and Intensive Care, Medicine, Orthopaedics and General Surgery. Doctors and nurses who were on vacation or study leave and surgeons who were not assigned to the general or orthopaedic wards were excluded from the study. The names of nurses and doctors employed in the above departments of each institution were assigned a number and 50% chosen using a table of random numbers. This yielded 130 nurses and 125 doctors.

Participation rate

Two-hundred and twelve participants including 113 nurses and 99 doctors were enrolled in the study, yielding an overall participation rate of 83.1%.

Data collection

Quantitative and qualitative data including, social, demographic and biomedical variables were collected using a 33-item structured, self-administered questionnaire. Two focus group discussions were held with seven nurses at KPH and three doctors at the UHWI aimed at elucidating findings from the study.

The General Health Questionnaire is a self-administered screening instrument used to identify potential cases of mental ill-health (8). The questionnaire covers four areas of psychiatric distress including depression, anxiety, social impairment and hypochondriasis and is scored using a Likert type scale. Scores equal to or greater than five were considered probable cases and were defined as caseness in this study (9). However, actual psychiatric disorders must be diagnosed by a psychiatrist. The instrument was previously validated in Jamaica and found to have a sensitivity and specificity of 85% using 5 as the cut-off for "caseness" (10).

Data were analysed using SPSS 11.5 for Windows. The chi-square test was used to determine differences among groups of categorical variables and the t-test to determine differences between means of normally distributed data. The relation between socio-demographic and occupational factors and caseness was initially screened using Spearman's ranked correlation coefficient. Variables associated with caseness were included in a subsequent regression model to estimate the odds ratio of being potential cases.

The study was approved by the Ethics Committees of the KPH and the UHWI. Informed consent was obtained from each participant.

RESULTS

Table 1 shows the demographic and social characteristics of the study population. The mean age of the participants was 32.5 ± 8.53 years and was not different between hospitals. Nurses were similar in age and gender distribution between hospitals but differed in their distribution among professional levels. Registered nurses were the most common at both hospitals; however, KPH had fewer nurses with post basic training than UHWI (29.8% and 41.8%, respectively) and more Enrolled Assistant Nurses (22.8% and 5.5%, respectively, $p = 0.032$).

Moderate to high levels of non-work and work-related stress were reported by 22.6% and 81.9% of the study population, respectively. Most respondents (77.4%) reported having none/minimal non-work-related stress and only 3% reported high levels of such stress. In contrast, the majority of respondents reported moderate (46.7%), to high (35.2%) levels of work-related stress with only 18.1% of respondents reporting none/minimal stress at work. Persons employed at the UHWI reported higher levels of both work-related and non-work-related stress than those employed at the KPH ($\chi^2 = 9.470$; $p = 0.009$; $\chi^2 = 19.300$; $p = 0.0001$, respectively) (Table 1). There were no significant differences in frequency of levels of work-related and non-work-related stress between either genders or professions (data not shown).

Table 1: Demographic and occupational characteristics of the sample

	KPH (n = 105)	UHWI (n = 107)	Total (n = 212)
Age (years)			
Mean ± SD	33 ± 8.87	32 ± 8.22	32.5 ± 8.53
Range	20–64	22–61	20–64
Sex			
Male %	36.2	34.6	35.4
Female %	63.8	65.4	64.6
Occupation			
Doctors %	29.8	11.5	20.2
Intern	53.2	65.4	59.6
Resident	17.0	23.1	20.2
Consultant			
Nurses %			
Practical Nurse	22.8	5.5	14.2
Registered Nurse	47.4	52.7	49.6
Post Basic RN*	29.8	41.83	36.3
Professional experience (years) %			
<1	21.9	16.8	18.9
1–4	36.2	38.6	36.3
5–9	19.0	24.8	21.2
>10	19.0	19.8	18.9
Work-related stress%			
Non/Minimal	21.0	15.1	18.1
Moderate	53.3	39.6	46.7
High	24.9	45.3	35.2
Non-work-related stress%			
Non/Minimal	89.5	65.0	77.4
Moderate	10.5	18.0	19.3
High	0.0	6.5	3.3

***$p < 0.05$; ** $p < 0.01$; *** $p < 0.001$**

Based on the GHQ 30, 27.4% of the doctors and nurses studied were considered probable cases (Table 2). Univariate analyses showed that the prevalence of casesness was not different by age, profession or hospital of employment. In contrast, professional experience (number of years spent in the profession), work-related and non-work-related stress, experiencing serious financial difficulties in the last six months and having fears of coming to work were significantly different between cases and non-cases (Table 2). Area of specialization and encounter with violent or threatening patients/family members were not significantly different between cases and non-cases (data not shown).

Examination of the data by place of employment showed that the prevalence of caseness at the UHWI increased to nearly 50% among persons employed for 5–9 years and declined thereafter (Figure). In contrast, prevalence of caseness peaked at 34% among KPH employees of 1–4 years professional experience and decreased subsequently. There was no significant difference between years of pro-

Table 2: Demographic occupational factors and caseness

Nurses and Doctors	Cases % (n) 27.4 (58)	Non-cases % (n) 72.6 (154)
Gender		
Males	29.3	70.7
Females	26.3	73.7
Age group (years)		
20–29	30.3	69.7
30–39	27.7	72.3
# 40	15.6	84.4
Occupation		
Nurse	27.4	72.6
Doctor	27.3	72.7
Hospital of employment		
KPH	23.8	76.2
UHWI	30.8	69.2
Professional experience (years)*		
<1	15.0	85.0
1–4*	36.4	63.6
5–9	35.6	64.4
>10	17.5	82.5
Work-related stress		
Non/Minimal*	13.2	86.8
Moderate	25.5	74.5
High	36.5	63.5
Non-work-related stress		
Non/Minimal*	23.0	77.0
Moderate	39.0	61.0
High	57.5	42.5
Financial difficulties (Hospital)		
KPH**	40.0	60.0
UHWI	43.5	56.5
Financial difficulties (Profession)		
Doctors	18.0	81.3
Nurses***	51.4	48.6
Financial difficulties (Gender)		
Males	31.3	68.7
Females**	45.9	54.1
Fear of coming to work (Hospital)		
KPH*	36.8	63.2
UHWI	47.4	52.6
Fear of coming to work (Profession)		
Doctors **	52.2	47.8
Nurses	32.4	67.6
Fear of coming to work (Gender)		
Males	46.7	53.3
Females**	38.1	61.9

Caseness defined as GHQ 30 # 5; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

fessional experience and caseness at KPH; however, persons who were employed between 1–4 years at the UHWI had significantly higher levels of caseness than those employed for longer periods ($\chi^2 = 8.10$; $p = 0.04$) (Figure).

Among doctors, the proportion of cases increased from 6% in those working for less than one year to 42% for those working 1–4 years and declined thereafter ($\chi^2 = 10.49$; $p = 0.015$). However, there was no difference in prevalence of caseness by years of professional experience among nurses (data not shown).

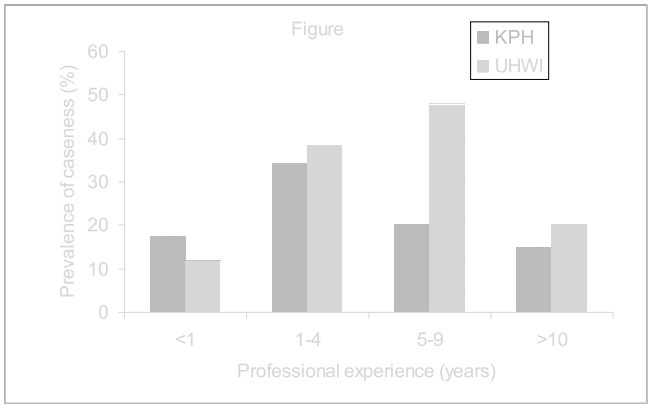

Figure: Caseness and professional experience by hospital.

The frequency of caseness was significantly different among levels of reported work-related of stress ($\chi^2 = 7.16$; $p = 0.028$). Prevalence of probable caseness among those with none/minimal stress was 13.2% and this increased to 25.5% and 36.5% in respondents with moderate and high stress, respectively (Table 2). Frequency of caseness was also significantly different among levels of non-work-related stress in a pattern similar to work stress ($\chi^2 = 6.39$; $p = 0.011$) (Table 2). Analysis at the level of professions, gender or hospital of employment did not reveal significant differences between levels of stress and caseness.

Persons who had experienced financial difficulties within the last six months were more likely to be cases (41.5%) as opposed to those who did not report having such difficulties (22.6%), ($\chi^2 = 7.113$; $p = 0.008$) (Table 2). This difference was seen among KPH employees ($\chi^2 = 6.80$; $p = 0.009$) but not those at the UHWI ($\chi^2 = 1.88$; $p = 0.170$). Furthermore, these differences were significant for nurses ($\chi^2 = 16.30$; $p = 0.0001$) but not doctors ($\chi^2 = 0.74$; $p = 0.545$). Among females, caseness was significantly higher in those who had experienced serious financial difficulties in the last six months compared to those who had not ($\chi^2 = 10.41$; $p < 0.001$); however, this was not seen among males ($\chi^2 = 0.023$; $p = 0.881$) (Table 2).

When the data were disaggregated, doctors and nurses who experienced fears of coming to work had a 40.4% rate of caseness in comparison to 22.2% of those who did not report that experience ($\chi^2 = 6.90$; $p = 0.009$) (data not shown). Employees at the KPH who had a fear of coming to work were more likely to be cases than those who had no such fears ($\chi^2 = 5.38$; $p = 0.02$). This trend did not hold among employees of the UHWI ($\chi^2 = 3.24$; $p = 0.072$). Similarly, doctors who had a fear of coming to work were more likely to be cases than those who did not ($\chi^2 = 9.37$ $p = 0.002$). In contrast, no significant difference was detected between nurses ($\chi^2 = 0.70$; $p = 0.401$) (Table 2). Having fears of coming to work resulted in a higher frequency of caseness among females ($\chi^2 = 4.70$; $p = 0.030$) but not males ($\chi^2 = 0.272$; $p = 0.099$).

Factors associated with probable caseness

Logistic regression analyses were employed to identify the independent predictors of caseness. Odds ratios were calculated to estimate the strength of the demographic, occupational and stress-related factors to higher GHQ scores.

Four variables predicted the likelihood of caseness (Table 3). Persons who reported fear of coming to work (OR 3.06; CI 1.40, 6.70) were more likely to be cases. Similarly, subjects with one to four years (36.3%) and five to nine years (21.2%) of professional experience as well as persons who reported high levels of non-work-related stress were at increased risk of being cases. On the contrary, persons with moderate (46.7%) or high (35.2%) levels of work-related stress were less likely to be classified as cases (Table 3).

Table 3: Odds ratios of the likelihood of being a probable case by occupational factors.

Variable	N	Odds ratio (95% CI)
Fear of coming to work		
No	143	1.0
Yes**	52	3.06 (1.40 – 6.70)
Professional experience (yrs)		
< 1	40	1.0
1–4**	77	5.71 (1.69 – 19.32)
5–9**	45	6.48 (1.77 – 23.68)
#10	40	1.51 (0.36 – 6.28)
Non-work stress		
Minimal or none	164	1.0
Moderate	41	1.82 (0.77 – 4.34)
High*	7 8.23	(1.17 – 55.16)
Work stress		
Minimal or none	38	1.0
Moderate*	98	0.23 (0.07 – 0.79)
High	74	0.62 (0.29 – 1.35)

Caseness defined as GHQ30 #5; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Variables included in the model: work stress, non-work stress, professional experience, occupation, fear of coming to work, age, gender and financial difficulties.

DISCUSSION

The overall prevalence of caseness in the current study was 27.4% and was almost identical among doctors and nurses. The estimate of caseness in the current study appeared to be in the middle to lower range of estimates, globally. In fact, the finding of GHQ based caseness in doctors and nurses varies widely, especially among the many studies conducted in the United Kingdom (UK). Using the GHQ12, 29% of Intensive Care Unit Doctors in a study in the UK were classified as cases (11). Similarly, 32% of nurses and 27% of neonatologists had GHQ scores indicating psychological dysfunction in a Neonatal Intensive Care Unit in Sydney, Australia (12). Prevalence has also been reported at 33% among pre-registration House Officers and as high as 44% in Accident and Emergency Consultants in the UK (2, 13). In contrast to the findings of the present study, up to 38% of nurses met the definition of caseness in some settings in the UK (14).

Nurses who worked in Surgery were shown to have significantly higher scores than those who worked in Internal Medicine or Geriatric Medicine (15). Although there was no statistically significant difference by work area in this study, health professionals working in Surgery had the highest level of caseness (35.9%), followed by Medicine (28.6%). This suggests that level of exposure to stress, job satisfaction and other factors, which affect caseness, were unrelated to the area of work. In the UK, the prevalence of caseness among Intensive Care Unit doctors was 29% and 23% among General Practitioners (11, 16). This was much higher than the rate of 14.3% among Anaesthetic and Intensive Care doctors and nurses in the current study. Furthermore, consultants in Accident and Emergency in a UK hospital were reported to have a 44.4% prevalence of caseness in comparison to 23.0% among similar doctors in the current study. The GHQ12 revealed high levels of psychological symptoms in 31.4% of respondents and significant psychological distress in 9.9% of respondents in a study of job satisfaction and psychological morbidity in New Zealand (17). Despite the non-specialized nature of their practice, 52% of General Practitioners in Leeds, UK, were identified as cases based on the GHQ12. This high prevalence of caseness was linked to low job satisfaction and the perception that work affected their physical health and is almost twice as high as the rate in Jamaican doctors.

Gender of the health professional did not affect their GHQ outcome. This was also reported in the study of Intensive Care Unit Doctors in the UK(11). The similarity between males and females and doctors and nurses in prevalence of caseness suggests that there were work-related or societal-related factors which were affecting the study participants independent of their professions and gender.

Both work-related stress and non-work-related stress were significantly associated with caseness in the current study. Working condition was also a significant predictor of caseness in a study conducted among general practitioners in southern England (16). In another study where cases and controls were determined by high and low GHQ scores, respectively, it was found that stressful situations at work contributed to anxiety and depressive disorders at a disproportionately high rate among cases (7). The study also recommended individual treatment with a focus on difficulties outside of work as an intervention. Level of stress which was significantly correlated with GHQ was linked to emotional involvement, unpredictable events at work, changes and instability at work and work content (18). Non-work-related stress was found to be a significant predictor of caseness in this study. However, the confidence interval for the relationship between high non-work stress and caseness was very wide and the result must be interpreted with caution. Focus group discussion among nurses suggested that this was related to financial difficulties, commuting, personal relations

problems and child care. Univariate analysis showed that persons who experienced serious financial difficulties within the last six months were more likely to be cases and this may therefore be a contributing factor to non-work related stress.

The number of years of professional experience was a significant predictor of caseness. A high level of caseness among persons who were recent entrants into the medical profession was seen, which peaked earlier at the KPH (1–4 years) than at the UHWI (5–9 years) and was lower among those who had worked for longer periods. This suggests that persons either adapted to the environment earlier at KPH or if they could not, they left, leaving persons less sensitive to the environmental stressors. The trend of high levels of reported stress and caseness among doctors early in their professional life has been reported previously by Paice *et al* (13) where 31% of 2456 UK Interns were reported to have psychological morbidity using the GHQ. Factors associated with this high rate of caseness in pre-registration doctors included: job responsibility (33.6%), interpersonal relationships (29.7%), overwork (17.0%) and death and disease (13.0%). Interventions which were suggested included better supervision in the first weeks in the post, better supervision of medical problems on surgical wards, more attention to sleep deprivation, more time for discussion with colleagues at work and more personal time (13). The UHWI is a teaching facility and junior staff may find it more stressful to have to deliver high standards of care under conditions of limited resources. This, coupled with academic responsibilities (especially among the large number of Residents), may be the reason the level of caseness peaks later than at the KPH. While it appears that the pattern reflects more rapid acclimatization at the inner city hospital (KPH) it may also reflect greater rates of burnout with fewer persons remaining on the job for long periods. This possible association warrants further investigation.

Fear of coming to work was a significant predictor of caseness among the study population especially among doctors and persons employed at the inner city hospital (KPH). For doctors, focus group discussions revealed that fear of coming to work was related to confronting unpredictable events and situations for which staff were not adequately prepared. While not significant for nurses, focus group discussions also showed that overcrowding of wards, high patient to staff ratio and commuting (especially at nights among nurses) were the main contributors to fear of coming to work. With regard to the higher rates of 'possessing fears of coming to work' at the KPH, the discussion revealed that this was related mainly to security issues. The orientation of new staff, especially interns and residents on rotation may need to be examined to better prepare them to cope with the socio-environmental challenges of working in an inner city hospital. Significantly higher rates of caseness among females who had a fear of coming to work may be a combination of not being prepared for the situation (35.4% of doctors were female) and working at the inner city hospital (31.9% of KPH doctors were female).

There was no association between age, gender, hospital to which the doctor or nurse was employed, specialization or encounter with violent and threatening patients and caseness. However, caseness was associated with non-work-related stress, having fears of coming to work and years of professional experience. When those personal concerns were accounted for, being occupied seemed to have provided a certain amount of protection against mental illness (caseness). This may be reflective of job satisfaction. It is also possible that contact with patients whose conditions were definitely worse than the health professional may have been therapeutic for the latter. The association between work-related stress and lower probability of caseness has not been previously reported.

The study has shown that over a quarter of doctors and nurses at the KPH and UHWI, working in the high demand areas, may be under some mental distress using the GHQ 30. This was related to having fears of coming to work, non-work-related stress mediated by years of professional experience and associated with either burnout or adaptation. Interventions targeted at new employees to reduce the level of caseness should include support services aimed at reduction of non-work-related stress by implementing more family friendly human resources policies and teaching stress management techniques. Furthermore, attention should be paid to non-work-related issues such as financial management, commuting arrangements for nursing staff and child care services. The study has not assessed the effect of caseness on performance of doctors and nurses at the hospitals and this should be undertaken.

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