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- Title: Emotional Labour, Training Stress, Burnout, and Depressive
Symptoms in Junior Doctors
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Emotional Labour, Training Stress, Burnout, and Depressive Symptoms in Junior Doctors

Abstract

Junior doctors are at risk of work-related burnout and mental health problems due to training workload demands and responsibilities. This study investigated the predictors of work-related burnout and depressive symptoms in junior doctors. Participants were 349 Australian doctors in postgraduate years 1 to 4, who completed a web-based survey assessing emotional labour (surface and deep acting), training stress, work-related burnout, and depressive symptoms. We tested a model in which surface acting and training stress were associated positively with work-related burnout, where deep acting was associated negatively with work-related burnout, where work-related burnout was associated positively with depressive symptoms, and where work-related burnout mediated the relationship between emotional labour, training stress, and depressive symptoms. Surface acting and training stress were associated with work-related burnout and depressive symptoms in the expected directions, deep acting and work-related burnout were associated with depressive symptoms, and work-related burnout fully mediated the relationships between training stress, surface acting and depressive symptoms. The results suggest that assisting junior doctors to manage workload demands and patient contact will have beneficial effects on their work enthusiasm and mental health.

Key Words: emotional labour; training stress; work-related burnout; depressive symptoms; junior doctors

In recent years, there has been an increase in the awareness of doctors' health and well-being. There is evidence to suggest that doctors are at greater risk of mental illness and stress-related problems compared to the general population (Devi 2011, Tyssen and Vaglum 2002), and that within the hierarchy of the medical profession, those identified as being most at risk of burnout and depression are junior doctors (Miller 2009, Pesce 2009). The first few postgraduate years for junior doctors are physically and emotionally demanding. They are expected to work long hours and accept a heavy workload and professional responsibility, which includes undertaking a broad range of clinical rotations, and managing patient expectations and demands, ongoing studies, and examinations. At the same time, they are planning for a future career whilst also trying to maintain a personal life. Research has shown that the workload of junior doctors can lead to burnout and depression (Shanafelt et al. 2002), and that many are reluctant to seek help due to career implications, professional integrity, and the stigmatization associated with having a mental illness (Hassan et al. 2009). Despite this evidence of poorer mental health in junior doctors, there have been few studies that tested the correlates of mental ill-health in junior doctors. The aim of this study is to test the effects of training stress and emotional labour on work-related burnout and depression symptoms of junior doctors.

Burnout and training stress

Burnout has been defined as a work-related stress condition comprising emotional and physical exhaustion, depersonalization, and diminished personal accomplishment (Maslach and Jackson 1986). Maslach and Leiter (1997) suggested that those suffering from burnout will find work unpleasant, unfulfilling, and meaningless. More recently, Schaufeli and Greenglass (2001) defined burnout as "a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding" (p. 501). This negative psychological state is associated typically with lack of energy, not

wanting to go to work, feeling worthless and incompetent, and in the case of doctors, treating patients as objects rather than people (Maslach, Schaufeli, and Leiter 2001). Burnout has been linked to stress-related ill-health (Maslach, Schaufeli, and Leiter), low career satisfaction, and decreased job performance (Goldberg et al. 1996), and has important ramifications for doctors because, in the medical profession, it can lead to unprofessional behaviour (Dyrbye et al. 2010), such as decreased empathy (Shanafelt et al. 2005, Thomas et al. 2007) and quality of patient care (Shanafelt et al. 2005, West et al. 2009).

There is considerable evidence to support the view that junior doctors work longer hours than other groups of doctors, have demanding patient loads, and that they suffer from sleep deprivation and fatigue (Baldwin and Daugherty 2004, Rosen et al. 2006). UK (68%) and Australian (54%) junior doctors believe their hours of work are excessive (Lambert, Goldacre, and Evans 2000, Markwell and Wainer 2009), and in a study of US residents, 66% reported that they averaged six hours of sleep or less per night (Baldwin and Daugherty 2004). Other specific training pressures include newly gained responsibility, keeping up to date on health care changes, having to make quick and sometimes difficult diagnoses, managing uncertainty, information overload, specialty rotations, breaking bad news, feeling unsupported, as well as personal stressors such as family and financial issues (Brennan et al. 2010, Brown et al. 2009, Levey 2001).

The published literature from the UK, US, Australia, and other parts of the world have recognized that a significant proportion of junior doctors does experience burnout. Bogg, Gibbs and Budred (2001) explored UK junior doctors' perception of work role and found that 25% were experiencing burnout. Shanafelt et al. (2002) reported that 76% of 115 US internal medicine residents were experiencing burnout, and in Australia, 69% of a sample of junior doctors met the criteria for burnout (Markwell and Wainer 2009). Additionally, burnout has been found to increase significantly over the course of the intern year (Willcock et al. 2004)

and has been found to affect standards of practice and patient care (Houston and Allt 1997, Markwell and Wainer 2009, Shanafelt et al. 2002). However, while there is evidence that junior doctors suffer from burnout and that this results in serious consequences (e.g., reduced patient care). Reviews of the literature reveal that research on burnout among medical residents is scarce, with less than 1% of the burnout literature focusing on junior doctors, with the quality of the studies generally weak due to methodological limitations, including small sample sizes (<100 respondents) and the use of univariate or descriptive analyses rather than more advanced multivariate analyses (Prins et al. 2007, Thomas 2004). Additionally, Prins et al. commented that, given medical residents' large workload and professional responsibilities, which tends to make them vulnerable to burnout, none of the studies specifically examined the possible effects of training demands on burnout.

Emotional labour, burnout, and depression

The term emotional labour was created by Hochschild (1983), and has been described as the effort involved in regulating emotions to meet organizationally based expectations specific to job roles (Brotheridge and Lee 2003). The underlying assumption is that an individual can make a conscious effort to manage their emotions so as to present a desired workplace image. Emotional labour consists of two types of emotional acting: surface acting and deep acting (Hochschild 1983). Surface acting is where a person will pretend to express an emotion, while deep acting is where a person will make a conscious effort to change their thoughts and feelings towards a person and to act positively.

Although Hochschild (1983) suggested that both surface acting and deep acting were both stressful and therefore detrimental to employee well-being, other researchers argue that surface acting and deep acting relate differently to well-being. Brotheridge & Grandey (2002) maintain that surface acting is more likely to result in emotional exhaustion due to the effort to suppress negative emotions, while deep acting alters the inner emotional state resulting in

positive emotions such as feelings of satisfaction and accomplishment. The use of surface acting, which reflects the use of inauthentic emotions, has consistently been found to produce emotional exhaustion that results in diminished well-being (Bono and Vey 2005, Grandey 2003, Yagil 2012). On the other hand, the use of deep acting has produced mixed results. Deep acting involves displaying more authentic expressions, and has been found to be beneficial as it enhances communication skills that stimulate empathy toward others (Larson and Yao 2005) and acts as a buffer against negative mood (Judge, Fluegge Woolf, and Hurst 2009). In contrast, Hulsheger and Schewe (2011) found a weak relationship between deep acting and well-being, while Bono and Vey (2005) and Yagil (2012) found no relationship.

Grandey (2003), and Brotheridge and Lee (2003) suggest that when individuals receive positive feedback from the deep acting process they are more likely to experience feelings of personal accomplishment, as the feedback they receive reduces the emotional dissonance between the effort they expend and the response from others. Thus, while surface acting and deep acting both involve emotional control, surface acting involves displaying inauthentic emotions that produce negative responses from others, and deep acting involves displaying authentic emotions to produce positive responses from others (Grandey 2000). Scott and Barnes (2011) investigated the relationship between emotional labour and affect, and work withdrawal. They found that surface acting increases negative affect and is associated with work withdrawal, while deep acting decreases negative affect and increases positive affect.

Client interactions that are frequent and longer in duration have been identified as antecedents to burnout (Cordes and Dougherty 1993). Thus, caring professionals, such as physicians, nurses, social workers, and teachers, are more likely to experience burnout because they are constantly dealing with people and their problems (Maslach 1978). Medicine is a profession that requires the use of emotional labour, as doctors often are required to display positive emotions and conceal negative ones. The doctor-patient

relationship is an integral part of medical care and has been described as a kind of theatre where both the doctor and patient have a role to play (Persaud 2005). People expect their doctor to be caring and sympathetic, and there is evidence to suggest that doctors who are warm, friendly, and reassuring are more effective practitioners (Di Blasi et al. 2001). However, displaying this type of emotional control is not always easy, and at the times when they are incapable of showing the appropriate emotion, they will need to “fake it” (Brotheridge and Grandey 2002). This may involve surface acting, such as altering facial expressions, voice, and posture, or deep acting, such as altering internal thoughts and feelings (Larson and Yao 2005). Although emotional labour is an important area of research, and there is considerable evidence illustrating the effect of emotional labour on employee well-being, the association between emotional labour and burnout, in particular deep acting, has produced mixed results. Further, to our knowledge there are no studies that have investigated the relationship between emotional labour and burnout in junior doctors.

Burnout and depression

Depression is characterized by depressed mood, fatigue, social withdrawal, inability to enjoy life and to concentrate, feelings of failure, and thoughts of death and suicide (Beck 1970). People suffering from depression typically feel sad, anxious, worthless, hopeless, and guilty, and these feelings tend to pervade every aspect of their life. However, while burnout and depression share similar key characteristics (the emotional exhaustion component of burnout is positively related to feelings of fatigue and sadness in depression, and the depersonalization component of burnout is related to feelings of social withdrawal; Maslach and Schaufeli 1993), they differ in regard to context. Burnout is specific to the work context, whereas depression is more global, reflecting an individual’s personal thoughts and emotions, which has implications for life more generally (Brenninkmeyer, Van Yperen, and Buunk 2001, Leiter and Durup 1994). While, burnout and depression have mainly been studied in

isolation, some researchers have demonstrated that burnout is an antecedent to depression (Bakker et al. 2000, Glass, McKnight, and Valdimarsdottir 1993), and that burnout can mediate the association between job characteristics and depression (Ahola et al. 2006). Ahola et al. found that high levels of job strain in full time employees was associated with burnout and depressive symptoms, and that the relationship between job strain and depression could be explained by increased levels of burnout. Further, Toker and Biron (2012) found burnout to be associated positively with depression and the two variables to be reciprocally related across time.

It is well established that junior doctors are vulnerable to psychological ill health and that a considerable number suffer from depression and disillusionment (Newbury-Birch and Kamali 2001, Pesce 2009), particularly during their internship (Bruce, Thomas, and Yates 2003). Bellini et al. (2002) found that interns had high levels of energy and vigor when they started their internship, but after five months they were depressed, angry, and suffering from fatigue. Similarly, Sen et al. (2010) showed that depression increased from 3.9% to 25.7% during internship, while Rosen et al. (2006) reported an increase from 4.3% to 29.8% during the intern year. Additionally, the residency year is a stressful time, with studies showing that 35% to 50% of residents report depressive symptoms (Collier et al. 2002, Shanafelt et al. 2002). Firth-Cozens (1987) found that 28% of junior doctors required treatment for depression, and that some aspects of the job, such as relationships with consultants, overwork, and decision making, were related to stress and depression. The physical and emotional consequences of burnout have been found to contribute to depression (Bakker et al. 2000); however, while Campbell Prochazka, Yamashita and Gopal (2010) found that burnout in residents was associated with screening positive for depression as an intern, to our knowledge, no studies have tested burnout as a predictor of depression among junior doctors.

The present study

This study was designed to expand the literature on emotional labour, training stress, work-related burnout and depressive symptoms among junior doctors. Few studies have tested the correlates of mental ill-health in junior doctors, in particular the antecedent stress factors to burnout, the relationship between emotional labour and burnout, the relationship between emotional labour and depressive symptoms, and the relationship between burnout and depressive symptoms. Additionally we aimed to clarify the mixed results on the correlates of surface acting and deep acting within the emotional labour literature.

We proposed that job role characteristics and training stress will be associated with mental health issues for junior doctors. We expected surface acting to be associated positively with work-related burnout and depressive symptoms because it requires a high level of effort to produce inauthentic emotions; and expected deep acting to be associated negatively with burnout and depressive symptoms as this involves authentic emotions, which are more likely to result in positive responses from others and feelings of personal accomplishment. Additionally, we expected training stress to be associated with higher levels of work-related burnout and depressive symptoms, and work-related burnout to be positively associated with depressive symptoms. As previous research has found that burnout mediates the association between job characteristics and depression, we expected also that burnout would mediate the relationships between the job characteristics, training stress, and depression. Therefore, we proposed the following hypotheses, as shown in Figure 1:

1. Surface acting (H1) and training stress (H2) are associated positively with work-related burnout;
2. Deep acting (H3) is associated negatively with work-related burnout;
3. Work-related burnout is associated positively with depressive symptoms (H4);
4. Work-related burnout mediates the relationship between surface acting (H5), deep acting (H6) and training stress (H7) and depressive symptoms.

[Insert Figure 1 here]

Method

Participants

Participants were 349 junior doctors working in hospitals and general practice located across all States/Territories of Australia. Four hundred and seventy-two surveys were distributed to junior doctors (response rate 74%). Doctors were aged between 21 and 58 years ($M = 28$, $SD = 4.4$), the sample was predominantly Caucasian, and 69% were women. One hundred and thirty-two were in their intern year (postgraduate year 1; PGY1), 44 were working as senior house officers (PGY2), 100 were residents (PGY3), and 73 were working as registrars and/or specialist trainees (PGY4).

Materials

Emotional labour. We used the 6-item Emotional Labour Scale (Brotheridge and Lee 2003) to assess surface acting (3 items) and deep acting (3 items) emotional labour. Surface acting items assess the regulation of emotions by hiding and faking feelings; deep acting items assess the regulation of emotions by modifying feelings. Participants responded using a frequency scale that ranged from 1 (*never or almost never*) to 5 (*always*). A sample item for surface acting is, “How often do you feel you have to resist expressing your true feelings”; and for deep acting, “How often do you feel you have to make an effort to actually feel the emotions that you need to display to others”. Higher scores indicate a greater level of surface acting and deep acting. The Emotional Labour Scale has been used with trainee teachers (Hulsheger, Lang, and Maier 2010), business employees (Brotheridge and Grandey 2002), and health-care workers (Montgomery 2005). Internal reliability coefficients for surface acting and deep acting have been reported at .83 and .79 (Brotheridge and Lee 2003) and .88 and .79 (Grandey 2003), respectively. The internal reliability coefficients in this study were .80 and .89.

Training stress. Doctors completed a 4-item scale assessing training stress. The scale has been used previously with medical students (Rogers, Creed, and Searle 2012). In support of validity, the scale was negatively associated with a general measure of well-being, and had low correlations with the personality factors of extraversion and neuroticism; the internal reliability coefficient was .88. Sample items included, “I feel overwhelmed by the amount of work I have to do”, and, “I feel stressed about how I am performing”. End points for the scale were 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater training stress. The internal reliability coefficient for the four items in this study was .80.

Work-related burnout. The Copenhagen Burnout Inventory (Kristensen et al. 2005) was used to assess work-related burnout among respondents. The full Inventory contains three subscales measuring personal burnout, work-related burnout, and client-related burnout. We used the 7-item work-related burnout subscale, and adapted some of the items to make them suitable for junior doctors in training. Sample items included, “Do you feel burnt out because of your medical training?”, and, “Are you exhausted in the morning at the thought of another day of medical training?”. Respondents rated each item on a 5-point frequency scale that ranged from 0 (*never or almost never*) to 4 (*always*), where higher scores indicated greater work-related burnout. The full scale has been tested on Danish, Australian, and New Zealand populations. Kristensen et al. (2005) provided evidence for construct validity by testing associations with work-related consequences (e.g., days sick and intention to quit), while other studies have found it to be negatively related to well-being and positively related to the Maslach Burnout Inventory (Maslach and Jackson 1986). Internal reliability coefficients for the work-related subscale has ranged from .79 to .87, which was .88 in our study.

Depressive symptoms. The two-item Patient Health Questionnaire (Kroenke, Spitzer, and Williams 2003) was used to assess depressive symptoms. This scale has been widely used in primary care settings, with medical outpatients, the elderly, and in the general population

(Arroll et al. 2010, Li et al. 2007, Lowe, Kroenke, and Grafe 2005, Lowe et al. 2010), and has been shown to identify DSM-IV depressive symptoms in adults living with HIV/AIDS (Monahan et al. 2009). The scale contains the first two items of the Patient Health Questionnaire-9 (Kroenke, Spitzer, and Williams 2001). The items are, “During the past month, to what extent were you bothered by feeling: down, depressed, or hopeless”, and “...little interest or pleasure in doing things”. Response options were 0 (*never or almost never*) to 4 (*almost all of the time*). Designed to assess depressed mood and loss of interest, the Patient Health Questionnaire is an alternative measure of depressive symptoms when participants’ time is limited. Lowe et al (2005) used the scale in a study of 520 medical outpatients and reported that it had good criterion and convergent validity. Further, when compared with the Composite International Diagnostic Interview (Wittchen et al. 1995), it was found to be sensitive for a diagnosis of major depression (Arroll et al. 2010). Lowe et al. (2010) provided evidence for reliability and validity using a large, general population sample of over 5000 German citizens. Internal reliability coefficients have ranged between .75 (Lowe et al. 2010) and .83 (Lowe, Kroenke, and Grafe 2005). The internal reliability coefficient for the two items in this study was .87 and the inter-item correlation was .78.

Procedure

Participants were recruited through posters, leaflets, and emails distributed via the 11 participating medical schools. The web based survey was administered in 2011, and participants who returned a completed survey were eligible to be entered in a lotto style draw for the chance to win a store voucher. Ethics approval was provided by the authors’ university ethics committee.

Results

Data management and steps in model testing

We used latent variable modelling to test the hypotheses shown in Figure 1. To meet the participant to parameters estimated ratio of between 5:1 and 10:1 (Bentler and Chou 1987), we used multi-item parcels (Landis, Beal, and Tesluck 2000) as well as individual items to represent the latent variables. Surface acting and deep acting each was represented by three observed items, and depressive symptoms was represented by two observed variables. Training stress and work-related burnout were each represented by two parcels. For the parcels, we subjected the two unidimensional scales (training stress and work-related burnout) to separate exploratory factor analyses, rank-ordered the factor loadings, and then paired the highest loading item with the lowest loading item and allocated these to one parcel, paired the second highest loading item with the second lowest item and allocated these to the second parcel, and so on, until all items were exhausted. We then summed the pairs within each parcel and used the total scores as the observed variables in the model (Landis, Beal, and Tesluck 2000).

We assessed a measurement model to ensure that all parcels and items represented the latent variables as expected, tested the hypothesized structural model, and then tested whether work-related burnout mediated the relationships between emotional labour, training stress, and depressive symptoms. Analyses were conducted using maximum likelihood estimation in AMOS. We assessed model fit with the χ^2 statistic, Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). The first two indices compare the specified model to one with complete independence and the RMSEA is an estimate of error in the model. With a sample size > 250 and number of observed variables between 12 and 30, a significant p -value is expected, and a CFI > .92 and RMSEA < .07 indicate a good fit (Hair et al. 2010). Hair et al. (2010) also recommend reporting the χ^2/df statistic, which desirably should be < .30.

Testing the hypothesized model

The measurement model, which consisted of five latent variables (deep acting, surface acting, training stress, work-related burnout, and depressive symptoms), demonstrated a good fit to the data, $\chi^2(40) = 90.54$, $p < .001$, $\chi^2/df = 2.26$, CFI = .98, RMSEA = .06. All standardized regression weights were significant ($p < .001$), and ranged from .62 to .95. The correlations among the latent variables were consistent with the correlations among the scale totals, indicating that they were mirroring the relationships among the observed variables. See Table 1 for summary data and correlations.

[Insert Table 1 here]

Next, we tested the hypothesized structural model. As age and gender had weak correlations with work-related burnout ($r = -.10$, and $.04$, respectively) and depressive symptoms ($r = -.09$, and $.02$, respectively), these were not included as covariates. This model also produced good fit statistics, $\chi^2(43) = 103.91$, $p < .001$, $\chi^2/df = 2.42$, CFI = .97, RMSEA = .06. The standardized regression weights for surface acting (.35) and training stress (.45) predicting work-related burnout were both significant at $p < .001$. The relationship between deep acting and work-related burnout was not significant (.06; $p = .27$). Surface acting and training stress accounted for 46% of the variance in work-related burnout. The standardized regression weight for work-related burnout (.66) predicting depressive symptoms was significant ($p < .001$), and work-related burnout accounted for 44% of the variance in depression. In this model, a direct pathway from deep acting to depressive symptoms was also indicated (.15; $p = .003$).

In addition to testing the hypothesised structural model, we assessed two, potentially plausible, alternate models. First, as Toker and Biron (2012) found a reciprocal relationship between burnout and depression over time, we assessed whether surface acting, deep acting, and training stress predicted depressive symptoms, which, in turn, predicted burnout (i.e., tested if depressive symptoms preceded burnout in the model). The fit statistics for this model

were poor, $\chi^2(43) = 165.64$, $p < .001$, $\chi^2/df = 3.85$, CFI = .95, RMSEA = .09, and direct pathways from surface acting and training stress to burnout were indicated. Second, we assessed whether depressive symptoms and burnout predicted surface acting, deep acting and training stress (i.e., tested the hypothesised model with the arrows reversed). The fit statistics for this model were good, $\chi^2(46) = 120.08$, $p < .001$, $\chi^2/df = 2.61$, CFI = .97, RMSEA = .07, but significantly poorer than for the original hypothesised model, $\Delta\chi^2(3) = 16.17$, $p < .01$. Thus, we accepted the original hypothesised model as the best fitting model.

Testing mediation

From the hypothesised structural model, work-related burnout potentially mediated the relationship between surface acting and depressive symptoms, and between training stress and depressive symptoms. We followed recommendations by Shrout and Bolger (2002) to test these mediations. First, we tested a structural model that included the direct effects only of surface acting and training stress on depressive symptoms. Second, we tested a structural model that included both direct and indirect effects. In these two analyses, we used the AMOS bootstrapping procedure (1000 bootstrapped samples) to estimate standard errors and 95% bias-corrected confidence intervals for the direct and indirect estimates. Full mediation occurs when the predictor is associated with the outcome variable, the mediator is associated both with the predictor and the outcome, the direct effect between the predictor and the outcome is not significant, and the 95% confidence intervals of the indirect effect via the mediator do not include zero. Partial mediation holds when all the previous criteria are met, and the direct effect between the predictor and the outcome remains significant.

For the model containing the direct paths only, surface acting (.18, $p = .005$) and training stress (.40, $p < .001$) were significantly associated with depressive symptoms, establishing that the predictor variables were associated with the outcome variable. For the model containing the direct and indirect effects together, training stress (.08, $p = .049$), but not

surface acting ($-.06, p = .47$), remained associated with depressive symptoms. Work-related burnout fully mediated the relationship between surface acting and depressive symptoms (standardized indirect effect = $.28$, CIs = $.17$ to $.44$), and partially mediated the relationship between training stress and depressive symptoms (standardized indirect effect = $.24$, CIs = $.10$ to $.24$). See Figure 2 for final model.

Discussion

The current research contributed to the literature by testing the relationship between emotional labour, training stress, and work-related burnout and depressive symptoms among junior doctors. Our findings partially supported the hypothesised relationships between surface and deep acting and work-related burnout, and between training stress and work-related burnout. First, we found that surface acting was significantly associated with work-related burnout. This finding is consistent with the emotional labour research literature (Brotheridge and Grandey 2002, Judge, Fluegge Woolf, and Hurst 2009, Larson and Yao 2005), and makes a contribution to the literature as no previous research has investigated the relationship between surface acting and work-related burnout in junior doctors. The finding suggests that if junior doctors interact with their patients at an inauthentic or superficial level (e.g., by manufacturing or suppressing emotions to meet perceived workplace expectations), it is likely to be associated with a sense of emotional strain culminating in work-related burnout.

[Insert Figure 2 here]

Second, while specific sources of stress for junior doctors have been identified (Brennan et al. 2010, Brown et al. 2009, Levey 2001), our results demonstrate that the training stress associated with the professional responsibilities of being a junior doctor were associated with work-related burnout. This is an important finding as despite efforts to change the working conditions of junior doctors in recent years to provide flexible working and training

arrangements to support a work-life balance (Australian Medical Association 2005), our results suggest that workload demands are still an issue, and that additional support might be needed for junior doctors during the four years after graduating from medical school.

Third, and contrary to expectations, we found a non-significant relationship between deep acting and work-related burnout. While this finding is consistent with Bono and Vey (2005), and Yagil's (2012) findings, it is not consistent with other research, which has found that deep acting helps to alleviate mental stress by creating a sense of personal accomplishment and job satisfaction that serves to reduce work-related burnout (Larson and Yao 2005). This finding suggests that the use of a deep acting style does not act as a protective factor to reduce negative emotions when junior doctors are interacting with their patients. As deep acting involves active regulation of emotional experiences that are aligned with display rules (Grandey 2000), it might be that the need to express positive emotions through deep acting is a prevailing organizational role requirement that is more natural and effortless for doctors compared to other occupations. These displays of emotions might then be rewarded by patients, thus neutralizing emotional dissonance and any potential relationship with work-related burnout. In summary, levels of work-related burnout in junior doctors was unrelated to age, gender, and use of deep strategies, but was associated with the use of surface acting strategies and levels of perceived training stress.

Our findings supported the hypothesised relationship between work-related burnout and depressive symptoms. This is consistent with research in other populations, which has found a link between the two conditions (e.g., Bakker et al. 2000). Work-related burnout can be considered as job-related negative affect, whereas depression is more global and context-free (Brenninkmeyer, Van Yperen, and Buunk 2001, Leiter and Durup 1994). This result suggests that where there are elevated levels of work-related burnout these are associated with a spill-over to a more general dysphoria. Depression has been identified as a health issue for junior

doctors (Shanafelt et al. 2002), and work-related burnout needs to be considered as a contributing factor. This is an important finding given the scarcity of research on burnout and depression in junior doctors.

While we did not find a significant relationship between deep acting and work-related burnout as expected, we did find a significant, positive, association with depressive symptoms. When using a deep acting approach, individuals attempt to match their feelings with what is expected, so that they might appear genuine. Adopting this approach may be beneficial for individuals in other work settings, but our study suggests this might not be helpful for junior doctors. This could be related to the number of patients dealt with by junior doctors, or to the emotionally charged interactions they experience. Another explanation might be that for doctors, who have higher levels of negative affect, deep acting may have a significant bearing on depressive symptoms. There is very little literature investigating emotional labour among doctors (Montgomery 2005, Larson and Yao 2005) and to our knowledge there is no research that specifically investigates the association between emotional labour and burnout and depression in doctors. Further research into the correlates of deep acting and depression in doctors is required to tease out the reasons behind these associations.

There were also indirect effects on depressive symptoms by surface acting and training stress, which were mediated by work-related burnout. First, these results argue that the high use of either a surface or deep acting strategy is likely to have negative consequences for junior doctors regarding work-related burnout and depressive symptoms, respectively. Junior doctors need to consider the approach they take with their patients, and relate to them as genuinely as possible, rather than trying to manage the interaction by using surface emotions, which they do not feel, or using deep strategies, where they adjust their own feelings to seem more genuine. There is evidence to suggest that communication skills are neglected during

medical school (Silverman 2009). Whereas previously, emotional control and/or detachment from patients were encouraged (Smith and Kleinman 1989), more emphasis is being placed on teaching medical students good communication practises that will lead to improved physician-patient relationships and positive health outcomes for patients (Association of American Medical Colleges 1999, Wright et al. 2006). Thus, training interventions or advice on communication skills for both medical students and junior doctors during medical school and when they commence practice might assist them to understand the possible orientations to patients that could be adopted, and the potential outcomes for such approaches. Second, these results demonstrate that training stress might have wider implications for junior doctors. We found a positive association between stress and work-related burnout, and the indirect association with depressive symptoms is evidence that stress on-the-job might have more general implications. There is a large body of research suggesting that work-generated stress can negatively affect other aspects of life, including family, leisure, and social relationships (Frone 2003), and junior doctors need to be alert that training stress can affect their work productivity and enjoyment, but also carry-over to other aspects of their life.

Junior doctors are an important part of a well-functioning health-care system. Providing support during these early years is not only critical for job satisfaction and the health and well-being of junior doctors, but also for patient satisfaction and quality of patient care. Studies have shown that the quality of care that a doctor gives is directly related to their own health (e.g., Maslach, Schaufeli, and Leiter 2001). Further, stress-related disorders are costly to the individual and the organization. A Swedish study revealed that stress among doctors had reached critical levels, and 10% of doctors were considering leaving medicine due to burnout (Maslach and Leiter 1997). Thus, interventions early in a doctor's career may prevent occupational stress, work-related burnout, and thoughts of wanting to leave medicine later.

Strengths, limitations, future research, and implications

This study addressed important issues and provided valuable data on workload and job role characteristics that were associated with work-related burnout and depressive symptoms in junior doctors. Additionally, the study included a large sample of PGY1 to PGY4 junior doctors working in a variety of hospitals and general practice clinics across all States and Territories in Australia. However, we recognize that there were some limitations to the study. We do not have data on non-responders and response bias is a possibility. Second, there is limited validity evidence for the brief PHQ-2 depression scale. Future studies that investigate these relationships should consider using a broader measure of depression. Third, our study is limited by its cross-sectional design. Future researchers might consider using a longitudinal study to evaluate the causal relationships among the variables, which might include other variables that could affect work-related burnout and depression, such as disposition and professional and family support.

Our results show relationships between emotional labour, training stress, work-related burnout and depressive symptoms, and suggest that in the interests of promoting junior doctors well-being and maintaining high standards of patient care, efforts to promote wellness among junior doctors are needed. Interventions concerned with improving well-being could include communication skills competency training to assist medical students and junior doctors with understanding the importance and complexities of effective communication between the doctor and patient. More specifically, training needs to teach junior doctors about the different types of emotional responses, displayed by both the doctor and the patient, and their consequences. Orientation programs, implemented both online and at the commencement of internship, which provide exposure to clinical environments and the different types of difficulties faced by junior doctors, are needed to support the transition from medical school to junior doctor training. These interventions could provide trainees with

an understanding of their newly gained responsibilities, whilst also providing them with problem solving skills that would assist in reducing training anxiety and stress. These findings will be useful for senior doctors, who are responsible for training and supervising junior doctors, and for junior doctors themselves, so that they might be more aware of factors that can influence their mental health.

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Table 1

Means, Standard Deviations, Zero-Order Correlations (above diagonal), and Correlations among Latent Variables (below diagonal); (N = 349)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Deep acting	6.11	2.50	-	.28	.19	.23	.29
2. Surface acting	5.68	1.55	.28	-	.32	.47	.30
3. Training stress	11.94	3.39	.20	.41	-	.48	.40
4. Burnout	20.40	4.81	.24	.56	.59	-	.59
5. Depression	4.52	1.91	.30	.35	.46	.65	-

All correlations significant at $p < .01$

Figure 1. Deep acting emotional labour is associated positively with work-related burnout; surface acting emotional labour and training stress are associated positively with work-related burnout; work-related burnout is associated positively with depression; work-related burnout mediates the relationships between emotional labour and training stress and depression.

Figure 2. Final model with standardised regression weights. The dashed lines represent pathways that were not hypothesised.