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Research paper

Burnout and depression: Points of convergence and divergence

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ABSTRACT

Background: Debate is ongoing as to whether burnout can be differentiated from depression. This study evaluated whether burnout and depression could be distinguished using a new burnout measure and other variables.
Methods: Scores on the Sydney Burnout Measure (SBM) were compared between participants with self-diagnosed burnout (BO-all group; $n = 622$) and clinically-diagnosed depression (DEP-all group; $n = 90$). The latter group was split into melancholic (DEP-mel; $n = 56$) and non-melancholic (DEP-nonmel; $n = 34$) depression subgroups for subsequent analyses. Differences in reporting of depressive symptoms and causal attributions were also evaluated.
Results: While total SBM scores showed poor differentiation, the BO-all group had lower social withdrawal and higher empathy loss subscale scores than the depression groups. Odds ratios were significant for several of the depressive symptoms and causal attribution items when comparing the BO-all group to the DEP-all and DEP-mel groups, while only a few items were significant when comparing the BO-all and DEP-nonmel groups.
Limitations: Participants in the depression group were assigned by clinician-based depression diagnoses, rather than by a standardised diagnostic interview, and the group had a relatively small sample size. Participants in the burnout group were self-diagnosed and not assessed for comorbid psychiatric diagnoses.
Conclusions: There were some nuanced symptoms differences between burnout and depression, but many of the SBM symptoms were not specific to burnout. Results also suggested that burnout overlaps more with non-melancholic than melancholic depression, and that differentiation of burnout and depression may rely more on weighting causal factors over symptoms.

1. Introduction

Burnout is currently a hot topic, with research articles and media outlets alike declaring that we are in the midst of a burnout "epidemic" (e.g., Moss, 2021; Rough, 2019; Sarner, 2018; Seo et al., 2021). Members of the general public are quick to label themselves as suffering from burnout, with some seeking assistance from mental health professionals for treatment and/or formal acknowledgement of illness to aid access to insurance benefits. The presiding research conceptualisation of burnout comes from the Maslach Burnout Inventory (MBI), which defines burnout as comprising three constructs: emotional exhaustion, empathy loss (labelled as depersonalization) and reduced professional accomplishment (Maslach and Jackson, 1981; Maslach et al., 2016). Despite widespread use of the MBI and thousands of research papers published on burnout, questions abound as to whether burnout is a distinct nosological entity and whether burnout is synonymous with depression or not, with the latter issue the focus of the current study.

Previous research has shown varying degrees of overlap between burnout and depression. For example, studies examining the degree of symptom overlap, the correlation between the two states, and whether depressive and burnout features load on the same or separate factors in factor analyses have generated varied findings (Ahola et al., 2005; Bakker et al., 2000; Bianchi et al., 2021; Iacovides et al., 1999; Leiter and Durup, 1994; Schonfeld and Bianchi, 2016; Schonfeld et al., 2019; Verkuilen et al., 2021). Burnout and depression have consequently been positioned as distinct (Koutsimani et al., 2019) and not distinct (Bianchi et al., 2015) in summary reviews.

Differences in causal and contextual nuances between the two states

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have also been explored. In arguing for their differentiation, some authors suggest that burnout can only be experienced in reaction to stressors experienced in the workplace, while depression is more pervasive and not specific to the work context, and can be caused by a myriad of factors (Maslach et al., 2001; Schaufeli et al., 2009). However, others argue that depressive episodes can themselves be work-related (e.g., Clays et al., 2007; Rugulies et al., 2006) and that burnout itself may be triggered by factors other than work-specific stressors, such as ones relating to parenting, being a student or caring for a loved one (Gérain and Zech, 2019; Roskam et al., 2017; Salmela-Aro et al., 2018). In one study of health professionals, fewer than half (44 %) of participants with burnout symptoms attributed their burnout as work induced (Bianchi and Brisson, 2019). The argument that work-specificity distinguishes burnout from depression therefore appears to be too simplistic.

Inconsistent findings relating to burnout's differentiation from depression may reflect measurement nuances. While the MBI and its burnout definition have been used in almost 90 % of burnout research (Hadžibajramović et al., 2020; Schaufeli et al., 2020), its model has been critiqued (Kristensen et al., 2005; Schaufeli et al., 2020). Of key relevance is whether the three MBI symptom sets adequately capture the defining symptoms of burnout. Specifically, items capturing psychological symptoms (e.g., anxiety, depression) and other potential domains (especially cognitive impairment) were not, to our knowledge, evaluated in the MBI development studies.

We have studied individuals with self-diagnosed burnout to determine what they perceive to be its key symptoms and have developed a new model and provisional measure of burnout based on such accounts. In our key study (Tavella et al., 2021), 622 participants self-identifying as burnt out completed a 137-item questionnaire, with items derived from previous burnout measures, a literature review and clinical observation. In addition, several items were included that had been adapted from validated measures of depression. A series of factor analyses resulted in a final bifactor solution made up of a 34-item general factor and five uncorrelated specific factors. The general factor was dominated by exhaustion and cognitive dysfunction items, while it also included items indicative of social withdrawal, irritability, excessive worrying, empathy loss, and some depressive symptoms including low mood and anhedonia. The specific factors were interpreted as encapsulating (i) cognitive dysfunction, (ii) empathy loss, (iii) exhaustion, (iv) reduced work performance, and (v) social withdrawal/insularity. We have since labelled this 34-item questionnaire as the Sydney Burnout Measure (SBM; Parker et al., 2021; Tavella et al., 2022), with the measure available in the Appendix.

Despite including 37 depression items in our questionnaire, few such items were evident in our final model, and the one specific factor that included anhedonia items did not make a distinct contribution to the variance, while no additional depression factor emerged, thus arguing against depression and burnout as being synonymous (Tavella et al., 2021). However, as some SBM items (e.g., anergia, compromised work performance) are commonly experienced by those with depression, there is a risk of the measure assigning 'false positive' cases of burnout (where a depressed individual returns a distinctive score on the burnout measure and is therefore judged as a positive burnout case). This 'overlap' caveat has rarely been conceded in the development of other burnout measures, with Kaschka et al. (2011) highlighting the lack of integration of differential diagnostic screening tools in existing burnout measures, and observing that "for the differential diagnosis [of burnout] the only resource is catalogs of symptoms with a high degree of generality" (p. 783).

We therefore judged it important to test whether our symptom model of burnout could differentiate those with burnout and those with clinical depression, and therefore recruited representative comparison groups. As causal nuances may help to differentiate the two states, we also examined the extent to which causal attribution data differed between participant groups. Using a pre-existing measure of burnout (e.g., the MBI) to determine eligible burnout participants was judged as inappropriate because there remains a lack of consensus regarding the optimal way to operationalize and measure burnout across studies, with Heinemann and Heinemann (2017) having recently emphasised that "to date, most burnout research has been circular, because it relies on questionnaires that measure symptoms that have not (yet) been clearly defined or unanimously agreed upon in medicine and psychology". Even if pre-existing burnout measures were to be used, there are no clinically validated cut-offs of such measures to determine burnout cases versus non-cases (Turnbull and Rhodes, 2021). Relying on clinician diagnosis of burnout was also not possible, as there is currently no accepted burnout definition or diagnostic criteria among practitioners, thus burnout diagnosis relies on practitioner discretion and cannot be standardised (Korczak et al., 2010). A 'bottom up' approach was therefore employed in the current study in which those who self-identified as having burnout were compared against those with clinically-diagnosed depression to evaluate whether and to what extent experiences of burnout in the lay population overlap with experiences of clinical depression. Burnout self-diagnosis has been used in previous studies (Brady et al., 2022; Kavalieratos et al., 2017; Olson et al., 2019; Pick and Leiter, 1991; Rohland et al., 2004; Sinsky et al., 2021; Turnbull and Rhodes, 2021), and self-diagnosed burnout has been shown in such studies to correspond with scores indicative of burnout on the emotional exhaustion subscale of the MBI. In a paper discussing the clinical insights that can be gained from patient self-diagnosis, Frankel (2001) argued that "patient's perspectives on their symptoms are an important source of clinical information for physicians and a key to understanding the physical, emotional, spiritual and symbolic meanings symptoms have for them" (p. 96). We therefore judge that inquiry into the experiences of those who self-identity as experiencing burnout has considerable potential to assist in determining burnout's key features, and whether and how it can be distinguished from other psychological states, including depression.

To best evaluate burnout's degree of overlap with depression, the impact of the depressive subtypes on any such overlap was also evaluated. There is a large body of evidence (see Parker and Manicavasagar, 2005) indicating that clinical depression should not be considered as a single, homogeneous disorder, but rather as a set of heterogeneous depressive conditions with differing aetiologies, symptoms and responsiveness to varying treatment modalities. Despite such evidence, and the recent resurgence of interest in the differences between the melancholic and non-melancholic depressive subtypes (e.g., Shan et al., 2021; Tondo et al., 2020; Valerio et al., 2021), most published studies assessing the burnout versus depression distinction have failed to specify whether participants had melancholic or non-melancholic depressive features. We and others (Bianchi et al., 2014, 2015; Parker and Tavella, 2021) have previously suggested that this oversight has likely contributed to the inconsistent findings concerning burnout's overlap with depression, and that any new research attempting to clarify the burnout-depression overlap should consider the influence of the depressive subtypes.

There appear to be some shared symptoms of burnout and melancholia, namely exhaustion and detachment in burnout and fatigue/anergia and anhedonia in melancholic depression, which could suggest syndrome overlap. However, melancholic depression has generally been modelled as a biologically weighted condition, with a strong genetic loading and responding preferentially to antidepressant medications as against psychotherapies (Parker et al., 2013). Its earlier label of 'endogenous depression' reflected the view that melancholic episodes emerged from intrinsic genetic and biological factors rather than from external causes. In contrast, non-melancholic depression has previously garnered the monikers of 'neurotic' or 'reactive' depression, reflecting views that it usually occurs in individuals who (respectively) have a personality predisposition, and/or experience a distinctive psychosocial precipitant impacting directly on the individual's self-esteem and with the depressed mood improving or worsening depending on environmental circumstances (Boyce et al., 1993). Burnout is generally accepted

as resulting in reaction to an (albeit usually work-related) environmental stressor, like non-melancholic depression, rather than being 'endogenous' or biologically underpinned like melancholic depression. We therefore hypothesised here that burnout's degree of overlap in both symptom and causal factors would be greater with non-melancholic than with melancholic depression.

2. Method

Ethical approval was provided by the UNSW Human Research Ethics Committee (UNSW HREC #HC190213), and all participants provided consent before participating.

2.1. Participants

2.1.1. Burnout group

The burnout group comprised participants from our earlier study (Tavella et al., 2021). Individuals were recruited through advertisements posted on the Black Dog Institute website and were required to be fluent in written and spoken English, aged between 18 and 65, and self-identified as currently experiencing 'burnout'.

2.1.2. Depression group

Participants in the depression group were also from an earlier study (Tavella et al., 2022), and were patients of psychiatrists or clinical psychologists from four private practices in Sydney, Australia. All had experienced major depressive episodes while their depressive sub-type diagnosis (i.e., melancholic or non-melancholic depression) was assigned by their diagnosing clinician. A melancholic depression diagnosis weighted prototypic features such as consummatory anhedonia, psychomotor disturbance, a non-reactive mood, impaired concentration and anergia (Parker and Manicavasagar, 2005; Parker et al., 2013). A diagnosis of non-melancholic depression was assigned to those not meeting such symptom criteria and whose depressive episodes were considered reactive to an antecedent stressor and with its severity consistent with the trigger (Parker and Manicavasagar, 2005; Parker et al., 2013). While clinician diagnoses were largely respected, any participant in the depression group who reported experiencing less than five of the necessary DSM-5 Criterion A symptoms for a major depressive episode (MDE) was excluded from further analyses (see Tavella et al., 2022) to ensure that the depressive sample was limited to those with clinical depression. Importantly, as the objective was to compare those with a clinical depressive condition against those with self-identified burnout, depressed subjects reporting or judged by their clinician as also experiencing probable burnout were excluded.

2.2. Procedure

Participation required group members anonymously completing online questionnaires administered via the Qualtrics website.

2.2.1. Burnout group questionnaire

This group completed our earlier questionnaire (Tavella et al., 2021) which contained a list of 137 potential burnout symptoms, and which led to the refined 34-item SBM measure (see Tavella et al., 2022) and appended here. The questionnaire also included 45 potential triggers of a burnout state, and participants were asked to nominate any items that they judged as having caused their burnout. Such items included several work factors recognised as contributing to burnout (Leiter and Maslach, 2003; Sharma and Cooper, 2016), and ones capturing recognised depressogenic causal stressors (e.g., a relationship breakdown). Some items relating to work stressors were repeated but couched so to represent those work stressors outside of a formal work environment (e.g., "I was overloaded at work" and "I was overloaded in my home-care duties"). Participants were also allowed to indicate that their burnout had no identifiable cause or that they experienced some other causal event not included in the list. Participants were also asked if they had ever been diagnosed with depression or any other mental health disorder from a mental health professional.

2.2.2. Depression group questionnaire

As described by Tavella et al. (2022), depression group members completed an identical questionnaire to the burnout group, however the word "burnout" was replaced with the word "depression" or "depressive episodes" throughout the questionnaire.

2.3. Statistical considerations

All analyses were conducted in SPSS Version 26 (IBM Corp, 2019).

2.3.1. Comparison sets

The main objective was to assess for differences in scale scores on the SBM between the burnout and depression groups. Scores on the 34 items included in the measure were therefore summed so that each participant had a total score, as well as a score for each of the five specific SBM factors (i.e., cognitive dysfunction, social withdrawal, exhaustion, reduced work performance, and empathy loss subscales). Two sets of comparisons were undertaken. Comparison Set I assessed for differences between all those in the burnout group (BO-all) and all those in the clinically-diagnosed depression group (DEP-all). In Comparison Set II, the depression group was split into two subgroups based on whether participants had been diagnosed with a melancholic (DEP-mel) or non-melancholic (DEP-nonmel) depression, and with each subtype group then compared against the BO-all group. To reduce the possibility of comorbid mental illness diagnoses influencing symptom reporting, Comparison Sets I and II analyses were repeated after adjusting for two covariates: having ever been diagnosed with (i) depression and (ii) any other mental health condition from a doctor or mental health professional.

2.3.2. Scores on SBM

Welch's analysis of variance (ANOVA) was used to compare mean scores in cases where univariate data were examined, such as when comparing total scores on the SBM (with a Bonferroni adjustment applied to adjust for multiple comparisons), and the Games-Howell procedure used for post-hoc multiple comparisons, as these methods do not assume homoscedasticity.

To examine for any nuanced symptom differences between the groups, mean scores for each SBM subscale were compared between the groups using multivariate analysis of variance (MANOVA), with the Pillai's Trace statistic chosen to indicate significance as this statistic is relatively robust to violations of MANOVA assumptions (Field, 2009; Queen et al., 2002). Welch's ANOVAs (with a Bonferroni adjustment) were performed to determine which group differences were contributing to any significant MANOVA.

2.3.3. Depression items

As detailed by Tavella et al. (2021) and noted earlier, the 137-item questionnaire included 37 items collated from several depression measures. We examined for group differences in reporting each of those 37 items by comparing the odds (using the SPSS GENLOG function; Hall and Bird, 1986) of responding "moderately" or "distinctly" versus "not at all" or "slightly" for each item between (i) the BO-all group versus the DEP-all group, (ii) the BO-all group versus the DEP-mel group, and (iii) the BO-all group versus the DEP-nonmel group.

2.3.4. Causal attribution data

The proportion of participants in the BO-all, DEP-all, DEP-mel and DEP-nonmel groups affirming each of the 45 causal items was computed, and the odds of responding "yes" versus "no" to each item were compared across the same three comparison groups listed in Section 2.3.3 using SPSS GENLOG.

3. Results

3.1. Demographics

622 completed questionnaires were collected for the burnout group, while 92 patients with clinically diagnosed depression (58 with melancholic depression, 34 with non-melancholic depression) completed the depression questionnaire. Two participants in the melancholic depression subgroup did not affirm five of the necessary DSM-5 Criterion A MDE symptoms and were therefore excluded.

Demographic and other variables of the BO-all and DEP-all groups were compared and are summarised in Table 1. There was no significant difference in mean age, or the most commonly nominated occupation (i.e., education professional) and participants in both groups were equally likely to nominate their ethnicity as Australian. A significantly greater proportion of the BO-all group was female. In addition, greater proportions of the BO-all group were university educated and in full- or part-time employment, while a greater proportion of the DEP-all group reported having been previously diagnosed with a mental health condition (other than depression).

3.2. Scores on the SBM

3.2.1. Comparison Set I

The results of Comparison Set I are displayed in Fig. 1. There was no significant difference between the BO-all group and the DEP-all group in total SBM scores (Welch's $F_{(1,\ 131.84)} = 1.88$, $p = 0.17$), which remained non-significant after including a previous diagnosis of depression or any other mental health condition as covariates ($F_{(1,652)} = 0.164$, $p = 0.69$). The overall MANOVA, which examined for difference between groups on the five SBM subscales, was significant (Pillai's Trace = 0.11, $F_{(5,706)} = 18.09$, $p < 0.001$), and remained significant after including the two covariates in the model (Pillai's Trace = 0.09, $p < 0.001$). Welch's ANOVA tests were significant (at $p = 0.01$ level after Bonferroni adjustment) for two subscales, with the BO-all social withdrawal mean being significantly lower than that of the mean for the DEP-all group (Welch's $F_{(1,\ 135.96)} = 42.23$, $p < 0.001$), while the BO-all empathy loss mean was significantly higher than that of the DEP-all group (Welch's $F_{(1,\ 110.97)} = 22.41$, $p < 0.001$), with both remaining significant ($p < 0.01$) after adjusting for the covariates.

Table 1
Comparison of response rates to demographic and other variables between the BO-all and DEP-all groups.

	BO-all group ($n = 622$)	DEP-all group ($n = 90$)	Test statistic	p value
Mean age	41.4 ($SD = 11.23$)	40.2 ($SD = 14.4$)	0.76	0.44
Gender	78.4 % female	60.7 % female	13.52	< 0.001
Ethnicity	73.5 % Australian	70.0 % Australian	0.48	0.49
Education level	77.5 % university degree	66.7 % university degree	5.07	0.02
Employment status	86.0 % employed full- or part-time	65.6 % employed full- or part-time	23.80	< 0.001
Most frequently nominated occupation	10.6 % education professional	10.0 % education professional	0.03	0.86
Previous diagnosis of mental health condition other than depression*	37.6 % yes	70.0 % yes	33.38	< 0.001
Previous diagnosis of depression*	58.8 % yes	100.0 % yes	–	–

Note: Test statistic for age was a Student's t value ($df = 710$), all other test statistics were χ^2 values ($df = 1$). Test was deemed significant if $p < 0.05$. Rates of a previous diagnosis of depression were not compared between the two groups as 100 % of the DEP-all group had a depression diagnosis by definition. Data for variables marked * were missing were for 56 participants in the BO-all group, with these participants excluded from analyses that included these variables as covariates.

3.2.2. Comparison Set II

The results of Comparison Set II are displayed in Fig. 2. There were no significant differences between the BO-all group, the DEP-mel group, and the DEP-nonmel group in total SBM scores (Welch's $F_{(2,\ 65.58)} = 1.08$, $p = 0.35$), nor after including the two covariates ($F_{(2,\ 651)} = 0.15$, $p = 0.86$). The MANOVA for the subscales scores was significant (Pillai's Trace = 0.12, $F_{(10,\ 1412)} = 8.91$, $p < 0.001$), and remained so after including the two covariates (Pillai's Trace = 0.10, $p < 0.001$). Welch's ANOVA tests were significant (at $p = 0.01$ level after Bonferroni adjustment) for the social withdrawal (Welch's $F_{(2,\ 66.64)} = 28.09$, $p < 0.001$), and empathy loss (Welch's $F_{(2,\ 60.78)} = 11.01$, $p < 0.001$) subscales, and remained so after adjusting for the covariates. Games-Howell post-hoc comparisons indicated that the social withdrawal mean was significantly lower for the BO-all group than for the DEP-mel group ($p < 0.001$) and DEP-nonmel groups ($p = 0.04$), while the BO-all empathy loss mean was significantly higher than those of the DEP-mel group ($p = 0.001$) and DEP-nonmel group ($p = 0.02$).

3.3. Depression items

The proportions of each group responding "moderately" or "distinctly" (rather than "not at all" or "slightly") to each of the 37 depression items are reported in Table 2, while Supplementary Table 1 provides the generalised odds and log-odds ratios for each item, with a larger log-odds indicative of greater discriminatory capacity.

Odds ratios were significant for nine of the 37 depression items when comparing the BO-all group to the DEP-all group. The DEP-all group had significantly greater odds of reporting depressed mood items (i.e., feeling sad, empty, hopeless and/or depressed), consummatory and anticipatory anhedonia, trouble getting started with everyday tasks, lowered self-worth and/or self-esteem, passive suicidal ideation (i.e., having recurrent thoughts of death), and oversleeping, and significantly lower odds of reporting middle insomnia.

Seven of the 37 odds ratios were significant when comparing the BO-all group to the DEP-mel group. The DEP-mel group had significantly greater odds of reporting items (as occurring "moderately" or "distinctly") capturing depressed mood, trouble getting started with everyday tasks, passive suicidal ideation, and oversleeping. The BO-all group had significantly greater odds of reporting middle insomnia and feeling angry.

Only one of the odds ratios was significant for the BO-all and DEP-nonmel comparison, with the DEP-nonmel group having significantly greater odds of reporting recurrent thoughts of death.

3.4. Causal attribution data

The proportions of each group reporting each of the causal triggers are displayed in Table 3, and the generalised odds ratios for each of the triggers are displayed in Supplementary Table 2.

Eighteen of the 45 log-odds ratios were significant for the BO-all versus DEP-all comparison, with those in the BO-all group having significantly lower odds than the DEP-all group of reporting there being no trigger, having commenced a medication that triggered their symptoms and having relationship issues. The BO-all had higher odds of reporting multiple formal work factors, being overloaded in their home/care duties, having experienced unrelenting pressure from juggling caring and work responsibilities, having too many responsibilities (e.g., working full-time while also being primary carer of a child) or a sudden increase in responsibilities (e.g., had to start caring for a parent who became ill), or having a poor work-life balance.

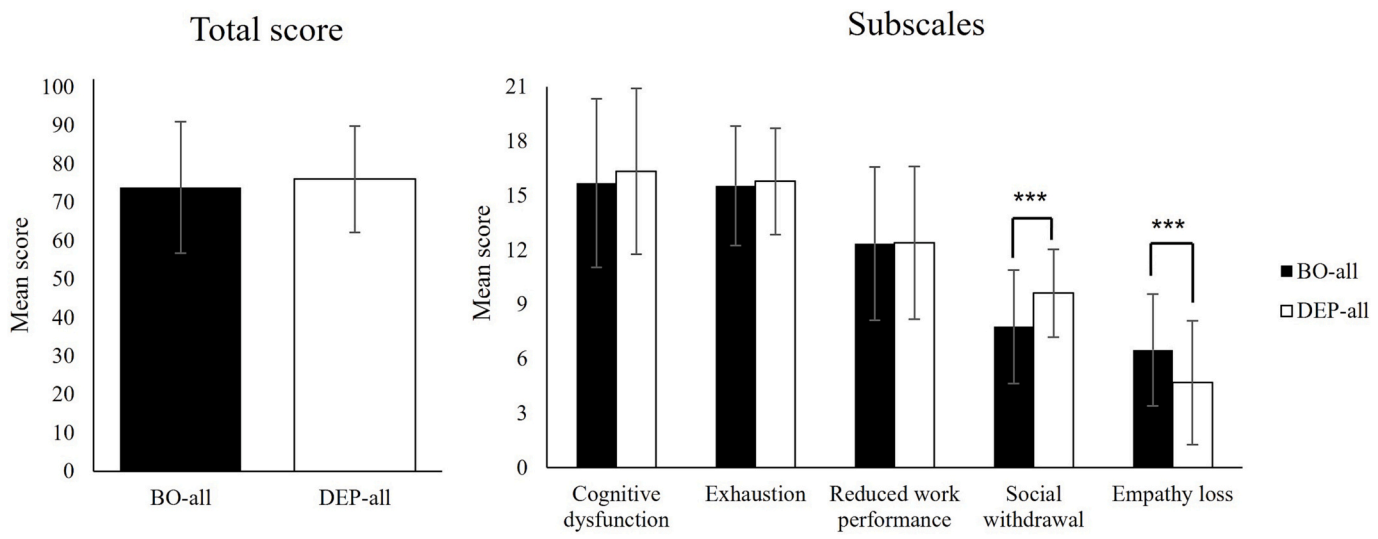

Fig. 1. Mean SBM total and subscale score comparisons for Comparison Set I. *** indicates $p < 0.001$.

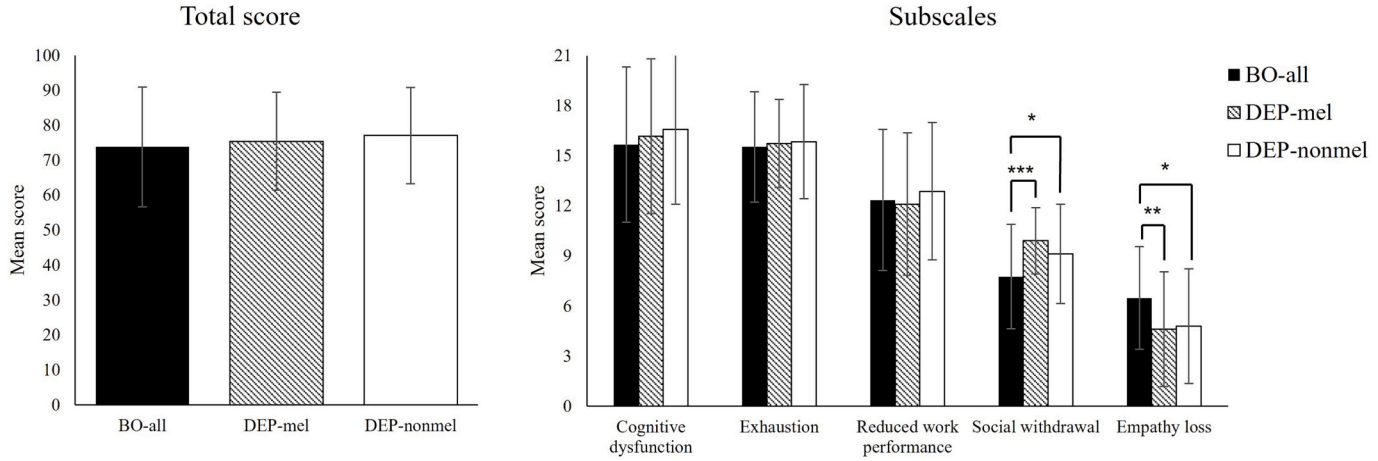

Fig. 2. Mean SBM total and subscale score comparisons for Comparison Set II. * indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$.

Sixteen of the 18 significant variables for the BO-all versus DEP-all comparison were significant when comparing the BO-all group to the DEP-mel group. In addition, the BO-all group had significantly lower odds than the DEP-mel group of reporting having no freedom at home or having a close friend or family member having died or being ill/injured.

When comparing the BO-all group to the DEP-nonmel group, only four of the 45 odds ratios were significant. Namely, the BO-all group had lower odds than the DEP-nonmel group of reporting there being no trigger or that they had experienced major difficulties in a personal relationship, while having higher odds of reporting having to work overtime or being overloaded at work.

4. Discussion

Before considering results, several limitations are acknowledged. First, there were some differences in socio-demographic variables across the two groups. Second, our burnout group were self-identified. Our reasons for using such an approach were detailed earlier, however, we acknowledge that this recruitment method risks a percentage of participants having alternate primary psychiatric conditions, such as chronic fatigue syndrome, which may have influenced symptom reporting. Furthermore, clinician-based diagnoses of depression were relied on to assign participants to the depression groups as against use of a structured diagnostic measure.

We also treated our burnout participants as a homogeneous group, rather than separating participants based on occupation (e.g., teaching versus nursing) and context (e.g., paid employment versus unpaid caregiving). Unlike the development of the MBI, which sought to capture burnout as experienced in the human services sector and was then adapted for use across other occupations (Maslach and Jackson, 1981; Maslach et al., 2016), our approach aligns with other burnout models (e.g., Schaufeli et al., 2020) in that we aimed to capture burnout more broadly as it is experienced across rather than within different occupations/contexts. However, we acknowledge that the prominence of specific symptoms may differ across the different 'types' of burnout, and that the degree of overlap with depression may also differ based on burnout type. Future research is therefore needed to determine whether current results are replicated when considering depression's overlap with variable burnout phenotypes.

In addition, there is a comorbidity issue that complicates any study attempting to assess the distinctiveness of burnout from depression (Nadon et al., 2022). Namely, if burnout is a nosological entity, the possibility of some participants having comorbid burnout and depression will impact on the capacity of a study to tease out differences between the two states. The current study attempted to overcome this by (i) disallowing patients with clinically-diagnosed depression from participating if they reported feeling burnt out or were judged by their clinician as potentially experiencing burnout (in the absence of formal

Table 2
Proportion of group responding "moderately" or "distinctly" to each depression item for the BO-all, DEP-all, DEP-mel and DEP-nonmel groups.

Depression items	Proportion of group responding "moderately" or "distinctly"			
	BO-all	DEP-all	DEP-mel	DEP-nonmel
I experience heavy or "leaden" feelings in my arms or legs	0.55	0.49	0.45	0.56
I have recurrent thoughts of death	0.39	0.66	0.64	0.68
I have little interest or pleasure in most activities	0.68	0.96	0.95	0.97
I wake in the middle of the night for a distinct period	0.69	0.54	0.50	0.62
I cannot concentrate or register new information because of "foggy" thinking	0.79	0.79	0.75	0.85
I feel slowed down mentally (e.g. hard to find words, slowed thoughts)	0.83	0.86	0.88	0.82
I feel slowed down physically (e.g. feeling like I am walking through sand)	0.74	0.77	0.75	0.79
I am distinctly more irritable	0.86	0.81	0.75	0.91
I feel quite worthless and like a failure	0.69	0.83	0.79	0.91
I lack motivation	0.86	0.96	0.98	0.91
I feel that I deserve to be punished	0.25	0.37	0.39	0.32
I experience a loss of energy (making it hard to get going in the morning)	0.91	0.92	0.95	0.88
I feel distinctly guilty	0.58	0.66	0.66	0.65
My self-esteem and self-worth are distinctly less	0.72	0.89	0.88	0.91
I become quite indecisive	0.72	0.82	0.80	0.85
My appetite is decreased	0.33	0.40	0.43	0.35
I gain weight	0.60	0.48	0.48	0.47
I cannot concentrate because of lots of worrying and racing thoughts	0.71	0.81	0.79	0.85
I cry more	0.59	0.67	0.63	0.74
I have trouble and/or a distinct delay in getting to sleep	0.60	0.61	0.54	0.74
I feel fatigued	0.95	0.94	0.96	0.91
I wake very early in the morning and cannot get back to sleep	0.55	0.40	0.36	0.47
I feel quite depressed	0.73	0.97	0.98	0.94
I feel agitated (i.e. unable to settle and sit still)	0.72	0.66	0.61	0.74
I cannot be cheered up by things or people that would normally give me pleasure	0.67	0.83	0.82	0.85
I start feeling more self-critical and hard on myself	0.83	0.89	0.89	0.88
I feel sad, empty and hopeless	0.75	0.98	0.98	0.97
I have trouble getting started with simple everyday tasks	0.71	0.92	0.95	0.88
I cannot look forward to things that would normally give me pleasure	0.67	0.89	0.91	0.85
I have trouble getting off to sleep	0.61	0.63	0.59	0.71
My mood and energy are lower in the mornings	0.73	0.73	0.79	0.65
I feel angry	0.70	0.61	0.52	0.77
I lose weight (even though I am not dieting)	0.15	0.22	0.23	0.21
I sleep for much longer	0.44	0.68	0.73	0.59
I feel as though I have lost my core identity and/or essence	0.80	0.87	0.82	0.94
My appetite is increased and/or I have food cravings	0.58	0.50	0.43	0.62
I keep to myself	0.80	0.88	0.89	0.85

diagnostic criteria for burnout), and (ii) recognising that some participants identifying as burnt out may have had a comorbid depression diagnosis and (through covariates) controlling for (a) a previous diagnosis of depression or (b) any other mental health condition. Nonetheless, the complexities associated with possible comorbidity require consideration when interpreting results, and innovative methods are required in future studies to accommodate such nuances. A final limitation was the relatively small sample size of the depression group ($n = 90$), and especially the non-melancholic subgroup ($n = 34$). It is possible

Table 3
Proportion of group nominating each causal trigger item for the BO-all, DEP-all, DEP-mel and DEP-nonmel groups.

Causal attribution	Proportion of group reporting item as present			
	BO-all	DEP-all	DEP-mel	DEP-nonmel
A family member or close friend died or had a serious medical illness or injury	0.26	0.38	0.48	0.21
I had a serious injury or physical illness (not a mental illness)	0.15	0.20	0.21	0.18
I had major difficulties in a personal relationship (i.e. with a family member or friend)	0.28	0.51	0.50	0.53
I had major difficulties in a professional relationship (i.e. with a boss, manager, colleague or client)	0.44	0.36	0.32	0.41
I lost a close personal relationship (e.g. marriage, friendship)	0.16	0.34	0.39	0.27
My responsibilities were suddenly increased (e.g. had to start caring for a parent who became ill)	0.26	0.10	0.11	0.09
I lost a job or was demoted	0.10	0.18	0.18	0.18
I had a major financial crisis	0.15	0.20	0.23	0.15
I had legal issues	0.05	0.08	0.11	0.03
I was rejected in a relationship	0.09	0.31	0.39	0.18
I was demeaned or diminished at work	0.35	0.28	0.25	0.32
I was overloaded in my home-care duties	0.18	0.08	0.09	0.06
I had too many responsibilities at once (e.g. working full-time while also being primary carer of a child)	0.36	0.19	0.20	0.18
I was overloaded at work	0.65	0.26	0.23	0.29
I was underloaded at work	0.07	0.04	0.04	0.06
I had no freedom at home	0.11	0.17	0.21	0.09
I was under extreme time pressure at work	0.42	0.17	0.14	0.21
My role at work was not meaningful	0.24	0.17	0.13	0.24
I experienced unrelenting pressure while caring for my child/children	0.13	0.06	0.07	0.03
I experienced unrelenting pressure while caring for family members other than my own children	0.07	0.04	0.05	0.03
I had no freedom at work	0.19	0.10	0.07	0.15
I have been in the workforce for too long/too many years	0.14	0.06	0.05	0.06
I had to frequently work overtime	0.37	0.11	0.14	0.06
I had to do a lot of shift work	0.07	0.07	0.09	0.03
My skills/abilities at work were not adequate to complete required tasks	0.13	0.13	0.16	0.09
I experienced unrelenting pressure because I was caring for my children as well as other family members (e.g. an elderly parent) at the same time	0.03	0.02	0.04	0.00
I was bored at work	0.21	0.16	0.18	0.12
My contribution at home was not recognised or appreciated	0.21	0.18	0.20	0.15
I wasn't trained properly to do my job	0.15	0.12	0.13	0.12
I was isolated in my home/care duties	0.09	0.09	0.11	0.06
I have been caring for people other than myself (e.g. children, other family members) for too long/too many years	0.15	0.04	0.07	0.00
My contribution to the workplace was not recognised or appreciated	0.47	0.22	0.14	0.35
I was isolated at work	0.28	0.12	0.11	0.15
I made a major mistake at work	0.05	0.10	0.09	0.12
I was not supported in my home/care duties	0.11	0.03	0.02	0.06
I experienced unrelenting pressure because I was caring for my children/other family members while also having to work	0.16	0.02	0.02	0.03
I was not supported at work by my boss or colleagues	0.42	0.23	0.20	0.29
I was harassed or discriminated against at work	0.18	0.19	0.16	0.24
I had a poor work-life balance	0.53	0.32	0.32	0.32
My role was ambiguous at work	0.22	0.06	0.05	0.06
I had no job security	0.18	0.09	0.05	0.15

(*continued on next page*)

Table 3 (*continued*)

Causal attribution	Proportion of group reporting item as present			
	BO-all	DEP-all	DEP-mel	DEP-nonmel
There was a lack of career development opportunities at my work	0.32	0.16	0.14	0.18
I commenced a medication that triggered the symptoms	0.04	0.14	0.18	0.09
I experienced some other triggering event not mentioned (please specify)	0.15	0.18	0.14	0.24
There was no trigger (i.e. the symptoms arose "out of the blue")	0.03	0.39	0.45	0.29

Note: Total proportion for each group could exceed 1 as participants could nominate more than one variable.

that more differences between the burnout and non-melancholic groups would have been detected if more participants had been recruited into the latter group.

Turning to findings, total scores on the measure were not significantly different between the burnout and depression groups, regardless of depressive subtype and after including a previous diagnosis of depression or any other mental health condition as covariates. This result suggests a high degree of symptom overlap between self-identified burnout and clinical depression. This finding aligns with several studies (e.g., Bianchi et al., 2020; Bianchi et al., 2021; Schonfeld and Bianchi, 2016; Verkuilen et al., 2021) positioning burnout as synonymous with depression. If not distinct, then the finding of several causal attribution differences in the current study, as discussed shortly, would suggest that the 'differences' between burnout and depression are largely socially constructed, with burnout having been historically positioned as caused by a trigger that is usually work-related, while depression does not always require an external cause (in endogenous or melancholic expressions) or is triggered (in non-melancholic expressions) by some event (e.g., divorce/separation from a partner) that need not be not work-related.

If a valid interpretation, a reasonable question is then why do individuals use the term 'burnout' to label their experiences? One potential explanation is that the burnout label carries "minimum stigma" (Schaufeli et al., 2009) and is not associated with the negative connotations commonly carried by formal psychiatric labels (Leone et al., 2011). When contrasted with the label of depression, which is commonly stigmatised (Beck et al., 2009), this might explain why individuals assign a label of burnout to a condition that may in fact be depression. Supporting this assertion, Epstein and Privitera (2017) argued that individuals are more willing to label themselves as experiencing burnout and seek help for that issue than to be forthcoming with a potential depressive condition because of the associated stigma of the latter. This is especially likely in workplaces where there is a (perceived or actual) requirement for workers to report their mental illness history to relevant professional registration boards for safe practice, such as in the medical profession.

However, other results from the current study indicate that our burnout and depression groups were not synonymous. Two symptom constructs consistently differed between the groups - those in the burnout sample had higher empathy loss and lower social withdrawal SBM subscale scores than those in the consolidated clinical depression group (Comparison I), as well as to both those in the melancholic and non-melancholic depression subgroups (Comparison II), with differences upheld when controlling for previous diagnoses of depression or another mental health condition.

In our original study (Tavella et al., 2021), it was interpreted that, while the general factor likely represented the core symptoms of a burnout syndrome, the loss of empathy factor was a more independent construct (possibly reflecting empathy loss being a coping strategy rather than a core symptom of burnout). In this study however, it appears that the general factor (represented by the total score) was instead capturing symptoms common to both self-diagnosed burnout and clinically-diagnosed depression while the empathy loss specific factor was capturing a group of symptoms that distinguished burnout from depression in the sample. Some authors have suggested that empathy loss, as represented by the MBI depersonalization subscale, and emotional exhaustion are the core aspects of burnout (Mészáros et al., 2014; Schaufeli and Van Dierendonck, 1993), while reduced personal accomplishment is a more independent construct (and perhaps a consequence rather than symptom of the syndrome; Bianchi et al., 2018). However, when the original MBI (designed for use in the human services sector) was adapted to be used in the general working population, the depersonalization subscale was replaced by a broader cynicism subscale (denoting loss of connection to one's job rather than from one's clients) (Maslach et al., 2016), suggesting that empathy loss is only relevant to burnout as experienced in the human services sector. Future studies should focus on elucidating the relevance of empathy changes in distinguishing burnout and depression, and should include measures of both self-reported empathy as well as more objective tests, such as the Multifaceted Empathy Test (MET; Dziobek et al., 2008).

Turning to the social withdrawal subscale, this subscale contains items indicative of anhedonia (see Tavella et al., 2021), a primary symptom of clinical depression, so it is understandable that members from the clinical depression groups scored higher on this subscale than those with burnout. Ultimately, while a burnout syndrome is likely to commonly if not always be accompanied by some depressive symptoms (as concluded in Tavella et al., 2021), differences in the social withdrawal subscale here indicate that those symptoms are distinctly more severe in those with a clinical depression diagnosis.

If burnout and depression are not synonymous, the finding of equivalent total SBM scores in our principal comparison groups invites consideration. One possible explanation is that the SBM contains several items that capture non-specific psychological distress (NSPD). NSPD refers to a group of symptoms that are not specific to any particular psychiatric disorder and include symptoms of dread, anxiety, sadness, helplessness and hopelessness (Dohrenwend et al., 1980). Other research indicates that burnout is marked by NSPD symptoms. For example, Schonfeld et al. (2019) found that the MBI burnout symptoms (especially those included in the emotional exhaustion subscale) and symptoms measured by validated depression and anxiety scales all loaded on the same underlying factor, which the authors interpreted as representing NSPD. Thus, if burnout and depression are both marked by NSPD symptoms, differentiation will be compromised if diagnosis is limited to symptoms.

Extending this issue, exhaustion, while promulgated by many to be the key feature of burnout, did not differentiate burnout from depression in the current study. Such a finding indicates that considering burnout as analogous with exhaustion, as some have argued (Pines and Aronson, 1981; Shirom and Melamed, 2006), has risks, as other psychological states such as depression are marked by the same key symptom (albeit more likely to be described as 'anergia' in the depression literature). Similarly, while cognitive dysfunction appears to be prominent in burnout (Schaufeli et al., 2020; Tavella et al., 2020, 2021), such dysfunction was also reported to the same degree by our participants with clinical depression, and therefore does not appear to be particularly differentiating. Furthermore, there were no significant differences between any of the groups on the reduced work performance subscale. While reduced professional accomplishment is an MBI construct, a DSM-5 criterion of major depressive disorder is impaired functioning, including occupational functioning (American Psychiatric Association, 2013). It is therefore not surprising that those with depression reported a reduction in work performance, with the current findings indicating that this feature is not particularly useful in distinguishing burnout from depression.

Additional differences between the burnout and depression participants emerged in the odds ratio analyses. The DEP-all group had greater odds of reporting items indicative of depressed mood and worthlessness

than those in the burnout group. A differential impact of burnout and depression on self-worth may be a key distinguishing feature between the two states, as also suggested in our previous study (Tavella and Parker, 2020), and would benefit from further exploration.

Unsurprisingly, those in the depression group also had greater odds of reporting anhedonia, mirroring the higher scores of the depression group on the social withdrawal SBM subscale (which included anhedonia items). The consolidated depression group also had greater odds of reporting trouble initiating everyday tasks, a finding aligning with our previous study (Tavella and Parker, 2020), where participants reported that depression had more of an impact on their everyday functioning than burnout. In addition, the consolidated depression group had greater odds than the burnout group of reporting recurrent thoughts of death. While some studies have similarly found that burnout is not associated with suicidality (Galán et al., 2014; Menon et al., 2020), others have suggested that burnout is a risk factor for suicidal behaviours (Patel et al., 2018; Van der Heijden et al., 2008), and thus future research confirming the specificity of suicidal ideation to depression is required.

In considering the principal depressive sub-types, the odds ratio analyses indicated that symptom overlap with the burnout group was greater for the non-melancholic group than for the melancholic group (albeit with power limitations relevant to the BO-all versus DEP-nonmel comparison having been discussed previously). Specifically, seven of the 37 odds ratios were significant when comparing the burnout group to the melancholic depression group, but only one was significant when comparing the burnout group to the non-melancholic group (for the item capturing recurrent thoughts of death). To the extent that melancholic depression is viewed as underpinned by biological changes and non-melancholic depression is principally determined by psychological and social stressors (Parker and Manicavasagar, 2005), this differential finding is of key importance. In essence, both burnout and non-melancholic depression are likely to be weighted to social precipitants and thus symptom overlap is to be expected between the two. Our differential findings underscore the importance of not studying 'depression' as an entity but conceding that if the interdependencies between burnout and depression are to be pursued, depression sub-typing should be respected.

There were several differences in causal attributions between the BO-all and DEP-all group, with most maintained when considering the BO-all versus the DEP-mel group only, while few of the odds ratios were significant when comparing the BO-all group to the DEP-nonmel group. Most notably, the DEP-all, DEP-mel and DEP-nonmel groups had greater odds than the BO-all group of reporting there being no trigger for their depressive episodes. Many of the specific triggers more likely to be nominated by the burnout group were formal work factors, such as being overloaded at work and working overtime. At first glance, these results support the argument that burnout can be distinguished from depression based on the former but not the latter being work-related (Maslach et al., 2016; Maslach et al., 2001; Schaufeli et al., 2009). However, it was not just workplace factors that distinguished burnout in the current study, as the burnout group also had higher odds of reporting being overloaded in their home/care duties as triggers. Further, many of the triggers more often reported by burnout group members related to pressure arising from having too many responsibilities in general, such as juggling work factors with home and care duties. These results align with the finding of Bianchi and Brisson (2019) that almost 50 % of individuals with burnout symptoms report that their job is not the main cause of their symptoms, as well as studies indicating that burnout symptoms are exacerbated when work interferes with home life and vice versa (Ádám et al., 2008; Montgomery et al., 2006; Verweij et al., 2017). Taken together, such results indicate that seeking to distinguish burnout from depression based on the work-specificity of the former may not be adequate.

Many of the odds ratios that were significant when comparing the BO-all group to the DEP-all group remained significant when comparing the BO-all group to the DEP-mel group only. Substantially fewer odds ratios were significant when comparing the BO-all group with the DEP-nonmel group, again arguing for a closer nexus between burnout and this depressive sub-type.

5. Conclusion

The current study contributes to the burnout-depression overlap debate through its examination of whether (i) a new symptom model of burnout captured by the SBM, (ii) items adapted from previous depression measures, and (iii) causal attribution nuances could distinguish between those with self-diagnosed burnout and those with clinically-diagnosed depression. Results indicated that while there are some nuanced symptoms differences between self-identified burnout and clinically-diagnosed depression, many of the SBM burnout symptoms are not specific to the syndrome, as those with a clinically-diagnosed depressive condition report many of the same symptoms. This finding could indicate that burnout is not nosologically distinct from depression, or that burnout and depression, while distinct, share a set of NPSD symptoms. Furthermore, the study provides preliminary evidence that self-diagnosed burnout may overlap more distinctly with non-melancholic than with melancholic depression.

There are several clinical implications of the current findings relating to both diagnosis and treatment. Firstly, if many of burnout's cardinal symptoms are indeed NSPD symptoms, such a reality argues for the need to avoid simply relying on a single burnout measure to make a burnout diagnosis. Several other psychological conditions have this same low-specificity problem, including depression and anxiety. In such cases, "it takes more information than a symptom score from a questionnaire to establish a diagnosis of a mental disorder" (Bjelland et al., 2009, p. 135), and clinicians are required to employ a clinical reasoning approach that weights contextual and causal factors to come to an appropriate diagnosis. The current results suggest that while environmental stressors may trigger episodes of both burnout and (especially non-melancholic) depression, such stressors are potentially distinguishable in that those that are depressogenic (rather than leading to burnout) are likely the ones that have greater impact on an individual's sense of self-worth. Support of such a hypothesis in future studies would not only assist in the differential diagnosis of depression and burnout, but may also indicate differential treatment targets, with interventions for the former but not the latter potentially requiring greater emphasis on improving an individual's self-worth in order to be effective.

Secondly, the current preliminary finding of burnout's greater overlap with non-melancholic depression could indicate that those with burnout would potentially benefit from treatment strategies that have been found to be particularly efficacious for non-melancholic (rather than melancholic) depression, such as prioritising psychotherapy above antidepressant medication (Parker and Manicavasagar, 2005; Parker et al., 2013). More adequately powered studies are therefore needed to confirm this overlap and assess the effectiveness of disorder-specific treatments for non-melancholic depression in treating burnout.

Clearly, the relationship between burnout and depression is complex, and while many studies, including the current one, have examined for a burnout-depression nexus using a variety of methods, future research designed to explore features *beyond* the symptoms of each state, such as causal factors, may be best positioned to reveal points of convergence and divergence.

CRediT authorship contribution statement

Gabriela Tavella: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. **Dusan Hadzi-Pavlovic:** Data curation, Formal analysis, Writing – review & editing. **Adam Bayes:** Data curation, Writing – review & editing. **Artin Jebejian:** Data curation, Writing – review & editing. **Vijaya Manicavasagar:** Data curation, Writing – review & editing. **Peter Walker:** Data curation, Writing –

review & editing. **Gordon Parker:** Conceptualization, Methodology, Project administration, Writing – review & editing.

Declaration of competing interest

None.

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Appendices. Supplementary data

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