Where stress presides: Predictors and correlates of stress among Australian judges and magistrates

Carly Schrever[a], Carol Hulbert[a], and Tania Sourdin[b]

[a] *Melbourne School of Psychological Science, University of Melbourne, Melbourne, VIC*

[b] *Newcastle Law School, University of Newcastle, Newcastle, NSW*

Correspondence: Carly Schrever, Melbourne School of Psychological Sciences, University of Melbourne, Victoria, 3010, Australia. Email: carly.schrever@gmail.com. Phone: 0422 218 466

Abstract

Recent research on the nature, prevalence and severity of judicial stress in Australia (Schrever, Hulbert, & Sourdin, 2019) has revealed a "judicial system not yet in mental health crisis, but under considerable stress" (p. 141). This article builds upon this research by exploring the demographic and workplace factors associated with elevated stress among Australian judicial officers. A survey of 152 judicial officers from five Australian courts, found that judicial stress – operationalised as non-specific psychological distress (K10), depressive and anxious symptoms (DASS-21), burnout (MBI-GS), and secondary traumatic stress (STSS) – was predicted by satisfaction of the basic psychological needs of autonomy, competence and relatedness. The only demographic variable reliably associated with judicial stress was jurisdiction: compared with judicial officers in the higher jurisdictions (i.e. judges), those in the summary jurisdictions (i.e. magistrates) reported significantly higher levels of stress, and significantly lower levels of basic psychological needs satisfaction. Alcohol use and dependence (AUDIT) was not associated with levels of stress or needs satisfaction. Implications and areas for future research are discussed.

Keywords: judicial stress, judicial wellbeing, secondary traumatic stress, vicarious trauma, burnout, basic psychological needs theory, autonomy, relatedness, occupational stress, judicial work

Introduction

Judges and magistrates have a difficult job. On a daily basis, they operate within an environment of conflict and disagreement, working through heavy caseloads involving distressed, frightened or traumatised people, and digesting accounts of dishonesty, tragedy, and abuse – all in order to navigate complex legal frameworks and make decisions that significantly impact the lives of the people in their courtrooms. They do this in isolation, under intense scrutiny, and, historically at least, within a professional culture of dismissing emotion (Maroney & Gross, 2014) and denying stress (Kirby, 1995). This unique combination of demands bears upon the men and women charged with the task of safeguarding the rule of law in our society. Their decisions can invalidate legislation, halt government projects, force businesses into liquidation, and send people to prison. As such, the occupational health and wellbeing of judicial officers is a matter of public, as well as personal, significance.

Judicial officers[1] are typically drawn from the legal profession. Since the mid-20th century, scores of studies and reports from around the world have explored the prevalence (e.g. Kelk, Luscombe, Medlow, & Hickie, 2009; Krill, Johnson, & Albert, 2016), causes (e.g. Bergin & Jimmieson, 2014; Chan, Poynton, & Bruce, 2014; Costa & Ferreira, 2014) and damaging consequences (e.g. Moore, Buckingham, & Diesfeld, 2015; Skead, Rogers, & Doraisamy, 2018; Tsai, Huang, & Chan, 2009) of psychological ill-health among law students and lawyers, putting beyond doubt the scope and magnitude of the mental health problem within the legal profession globally (see National Task Force on Lawyer Well-Being [NTLW], 2017). Until very recently, however, there has been little empirical investigation

[1] Consistent with past terminological descriptors referred to by Roach Anleu and Mack (2017), 'judicial officer' and 'judiciary' are used to refer to any member of the judiciary, regardless of court level or type. Within Australia, the term 'magistrate' mainly refers to members of the judiciary who preside in the lower or summary state and territory courts. The term 'judge' refers to those who preside in intermediate and superior courts.

of whether this troubling trend extends to the judiciary. The lack of research has not proceeded from a lack of interest. In Australia, the issue of judicial stress, once described as "an unmentionable topic" (Kirby, 1995, p. 101), has become the subject of considerable commentary (e.g. Kunc, 2018), judicial speeches (e.g. Heilpern, 2017), conferences (e.g. National Judicial College of Australia, 2019), and media interest (e.g. Wilmoth, 2018). In 2017 and 2018, the tragic suicides of two Victorian magistrates (Coroners Court of Victoria, 2020a; 2020b) elevated national concern for judicial wellbeing and brought increased urgency to the question of how judges and magistrates can be supported in the demanding and critical work that they do. There remained, however, no empirical data utilising validated psychological measures of the prevalence and severity of judicial stress in Australia.

The present study is part of a larger research project offering Australia's first insight into the psychological impact of judicial work. The exploratory, mixed-methods research project sought to shed light on three questions crucial to understanding and maintaining the occupational wellbeing of the judiciary: (1) are Australian judicial officers stressed; (2) which judicial officers are most stressed and why; (3) what are judicial officers' perceptions of the sources and impacts of judicial stress, and their ideas for how it could be addressed.

The first of these questions was addressed in the research project's first study, the findings of which were published in 2019 (Schrever, Hulbert and Sourdin, 2019). That study established that Australian judicial officers have a "stress problem" (p. 163), manifesting as elevated rates of non-specific psychological distress, burnout, secondary traumatic stress and alcohol use. However, unlike the rest of the legal profession, this 'stress problem' has not, so far, translated to a wide-spread mental health problem among the Australian judiciary. The study found that judicial officers had rates of depressive and anxious symptoms similar to those of the general population, but dramatically lower than those found for practicing

lawyers (Chan et al., 2014), and judicial officers also reported high levels of work satisfaction. Together, the findings of the first study indicate a "judicial system not yet in mental health crisis, but under considerable stress" (p. 141).

The present study explored the second question – that is, not *whether* judicial officers are stressed, but *which* judicial officers are most stressed, and *why*. A systematic approach to this question requires careful consideration of three matters: (1) how judicial stress might be conceptualised – specifically, which psychological constructs might be included and measured; (2) what explanatory framework might best be adopted to explore the drivers of judicial stress; and (3) what demographic factors are associated with higher stress among judicial officers. Each of these are now discussed in turn.

Conceptualising judicial stress

As former judge of the High Court of Australia, Michael Kirby, once said: "Judicial stress is just one variety of stress in human beings" (Kirby, 1995, p. 101). The concept of 'stress in human beings' is, perhaps surprisingly, a rather recent one. The term 'stress', originally an engineering term, was first applied to human beings in the mid-20th century, when endocrinologist, Hans Selye, defined it as "the non-specific response of the body to demands, whether positive or negative, made of it." (Selye, 1956, p. 4). It has since entered the popular lexicon, becoming a convenient umbrella term for a broad range of qualitatively different psychological experiences, each of which is defined and measured differently. As the well-known Yerkes-Dodson stress-performance curve (originally called the Yerkes-Dodson Law: Broadhurst, 1959) illustrates, stress within a manageable range can be positive for functioning and wellbeing. More recent research on coping has described 'stress' as an appraised state, experienced as positive or negative depending on whether the stressor is evaluated as a challenge (within one's resources) or a threat (exceeding one's resources: Lazarus, 1991; Skinner & Brewer, 2002). In the lawyer and judicial stress research, however,

'stress' is generally used to refer to negative psychological states that are seen in contrast to experiences of wellbeing (Miller & Bornstein, 2013). This is the broad conceptualisation adopted in this study.

In order to conceptualise and measure *judicial* stress, it is necessary to consider which negative psychological experiences are likely to arise in the judicial context. As regards the experiences of *Australian* judicial officers, there are two primary bodies of literature to guide this inquiry: (1) the commentary and overseas research relating to judicial stress; and (2) the Australian empirical research relating to lawyer stress. As explained below, these two bodies of literature suggest that judicial stress can be conceptualised as encompassing the following psychological constructs: non-specific psychological distress, mental ill-health, burnout, secondary traumatic stress, and alcohol use and dependence.

Non-specific psychological distress.

Non-specific psychological distress refers to a general state of ill-being or subjective stress, and is often used as a broad indicator of population stress and wellbeing (Australian Bureau of Statistics [ABS], 2012). The two available theory-driven models of judicial stress (Hagen & Bogaerts, 2013; Miller & Richardson, 2006), which postulate relationships between sources of stress in judicial office and possible negative outcomes, both include non-specific 'stress' as a suggested outcome measure. A number of judicial stress studies from North America and Europe measured non-specific psychological distress, using either bespoke survey questions (Graff, 2000; Miller, Reichert, Bornstein, & Shulman, 2018; Rogers, Freeman & LeSage, 1991) or validated instruments (Berivi, Grassi, Russello, & Palummieri, 2017; Eells & Showalter, 1994; Showalter & Martell, 1985). This construct has also been central to the investigation of lawyer stress in Australia (Kelk et al., 2009; Chan et al., 2014; Skead et al., 2018). In our first study, Australian judicial officers reported elevated

rates of non-specific psychological distress compared with both barristers and the general population (Schrever et al., 2019).

Mental ill-health.

Beyond a broad understanding of general and subjective stress, it is relevant to consider whether judicial stress is giving rise to clinical conditions of mental ill-health, for example, depression and anxiety. Symptoms of depression and anxiety have been measured among judges in the United States (US: Flores et al., 2008; Krieger & Sheldon, 2015; Miller et al., 2018), Brazil (Amazarray, Oliveira, & Feijo, 2019), and Poland (Orlak & Tylka, 2017), and been found in alarmingly high rates among lawyers in Australia (Beaton Consulting, 2007; Bergin & Jimmieson, 2014; Chan et al., 2014; Skead et al., 2018). Consistent with the overseas research on judicial mental health, and in contrast to Australian lawyer stress research, our first study found that, unlike the rest of the legal profession, Australian judicial officers' incidence of depressive and anxiety symptoms was similar to those of the general population (Schrever et al., 2019).

Burnout.

Early writing on judicial stress (e.g. Chamberlain & Miller, 2008; Hagen & Bogaerts, 2013) including a seminal paper calling for empirical research (Chamberlain & Richardson, 2013), suggested that occupational burnout is a foreseeable consequence of judicial working conditions. Burnout is not a diagnoseable mental disorder (Maslach, Shaufeli, & Leiter, 2001), but rather a debilitating experience specifically linked to high workloads and prolonged interpersonal demands, that is characterised by emotional exhaustion, loss of meaning, and reduced professional accomplishment (Maslach et al., 2001). Judicial burnout has been investigated in several quantitative (Jaffe, Crooks, Dunford-Jackson, & Town, 2003; Lustig et al., 2008; Miller et al., 2018) and qualitative (Edwards & Miller, 2019) studies in the US, and one study in Taiwan (Tsai & Chan, 2010). Consistent with the results of these

studies, the current project's first study found that three-quarters of Australian judicial officers had scores on at least one burnout factor that indicated risk of burnout (Schrever et al., 2019).

Secondary traumatic stress.

Secondary trauma – variously described as secondary traumatic stress, vicarious trauma, and compassion fatigue – features prominently in the academic literature on judicial stress (Hagen & Bogaerts, 2013; Chamberlain & Richardson, 2013; Miller & Richardson, 2006; Zimmerman, 2006) and in published personal accounts by judicial officers (Adam, 2017; Heilpern, 2017). This literature points to the regular exposure within the judicial role to information and images of violence, abuse and human misery, coupled with the requirement to remain stoic and enact decisions in the lives of often already traumatised people.

Broadly defined as psychological distress resulting from exposure to information about the primary trauma experienced by others, secondary trauma has been investigated in a number of quantitative (Flores et al., 2008; Jaffe et al., 2003; Lustig et al., 2008; Miller et al., 2018) and qualitative (Chamberlain & Miller, 2009; Edwards & Miller, 2019) judicial stress studies in the US, and several empirical studies involving Australian lawyers (McGuire & Byrne, 2017; Vrklevski & Franklin, 2008; Weir, Jones & Sheeran, 2020). Together, these studies indicate that secondary trauma is a significant occupational hazard for judicial officers and other legal professionals. Indeed, in our first study, we found that the overwhelming majority (83.6%) of judicial officers reported experiencing at least one symptom of secondary traumatic stress in the previous week, and almost one third (30.4%) scored in the range for which formal assessment for Post-Traumatic Stress Disorder (PTSD) may be warranted (Schrever et al., 2019).

Alcohol use and dependence.

Lawyers' reliance on alcohol to manage stress and feelings of sadness has been the subject of much attention (NTLW, 2017; Daicoff, 2004; Drogin, 1991; Schiltz, 1999; Helm, 2014), with research in Australia (Beaton Consulting, 2007; Bergin & Jimmieson, 2014; Chan et al., 2014) and the US (Benjamin, Darling & Sales, 1990; Krieger & Sheldon, 2015; Krill et al., 2016) demonstrating that problematic alcohol use is higher among lawyers than others. Our first study found that 30% of Australian judicial officers reported risky levels of alcohol use – a rate similar to Australian lawyers, but almost double the rate within the general population (Schrever et al., 2019).

Other constructs.

Other empirical research on the human dimension of judging has explored the related concepts of job satisfaction (and dissatisfaction: Chase & Hora, 2009; Mack, Wallace & Roach-Anleu, 2012; Roach Anleu & Mack, 2017), work engagement (Hakanen, Rodrigues-Sanches, & Perhoniemi, 2012), judicial attitudes (Thomas, 2017), emotion management (Maroney, 2019, Roach Anleu & Mack, 2005,), flourishing (Rossouw & Rothmann, 2020b), subjective wellbeing (Krieger & Sheldon, 2015), and life satisfaction (Hakanen et al., 2012; Krieger & Sheldon, 2015), which provide insight into the positive side of the judicial experience that may exist alongside, or in contrast to, judicial stress. Collectively, this body of research has suggested that judicial officers generally express high levels of overall satisfaction, engagement and professional efficacy, and notwithstanding the demands and complexities of the role, judicial stress and wellbeing can and do coexist.

Explanatory framework

To begin to understand the factors driving judicial stress, a theory driven framework linking the psychological experiences of judicial officers with their work and working

conditions is needed. One theoretical framework frequently adopted within the research on lawyer (e.g. Krieger & Sheldon, 2015) and law student (e.g. Huggins, 2012; Larcombe & Fethers, 2013; Sheldon & Krieger, 2004, 2007) stress, is Basic Psychological Needs Theory (BPNT). BPNT is one component of Self-Determination Theory (SDT: Deci & Ryan, 2000), a well-established and comprehensive model for understanding human motivation and wellbeing, backed by more than 40 years of empirical research (Chen et al., 2015). In essence, BPNT posits that human thriving is contingent upon the satisfaction of three basic psychological needs – namely, autonomy, competence and relatedness (Chen et al., 2015; Deci & Ryan, 2000). Autonomy refers to our need to feel authentic, self-determining and volitional, as opposed to controlled, coerced, or pressured (Chen et al., 2015; Schultz, Ryan, Niemiec, Legate, & Willians, 2014). Competence refers to our need to feel capable, confident and effective to achieve desired outcomes, as opposed to inept, self-doubting, and ill-equipped, (Chen et al. 2015, Deci & Ryan, 2000). Relatedness refers to our need to experience intimacy and genuine connection with others, as opposed to social exclusion and isolation (Chen et al., 2015; Schultz et al., 2014).

According to BPNT, these needs are more fundamental than desires or ideals; they are essential nutriments for psychological health and wellbeing (Baard, Deci & Ryan, 2004). When these needs are satisfied, we experience wellbeing, vitality, motivation and engagement. Conversely, when these needs are not supported – or worse, actively thwarted – within our environment, stress, maladjustment and psychopathology are said to result (Deci & Ryan, 2000; Schultz et al., 2014). Extensive research has demonstrated the empirical validity of the theory across demographics (e.g. gender: Gomez-Baya, Lucia-Casademunt, & Salinas-Perez, 2018), settings (Baard et al., 2004), time (Ryan; Bernstein, & Brown, 2010) and cultures (Chen et al., 2015), supporting the claim that the three basic psychological needs are universal and innate (Chen et al., 2015; Deci & Ryan, 2000).

Within the lawyer stress literature, BPNT has proved similarly instructive. Higher needs satisfaction among lawyers and law students has consistently correlated with higher wellbeing and lower stress (e.g. Krieger & Sheldon, 2015; Larcombe & Fethers, 2013; Sheldon & Krieger, 2007). Of particular relevance is the seminal work undertaken by Krieger and Sheldon (2015) exploring the drivers of stress and wellbeing among a large sample of US lawyers (n=6,226), including 141 judges. To our knowledge, this is the only study worldwide to directly compare lawyer and judicial psychological wellbeing. Krieger and Sheldon reported that, of all the factors examined in the study – demographics (e.g. age, gender), external indicators of status and success (e.g. class rank, income, partnership status), personal life choices (e.g. vacation days taken, prayer, exercise, alcohol use), and basic psychological needs satisfaction – the needs satisfaction variables correlated most strongly (r>.63) with lawyer wellbeing (calculated as the sum of life satisfaction and positive affect, minus negative affect). The researchers concluded that, although lawyers tend to strive for and emphasise external factors associated with prestige and status, those factors had a negligible impact on their happiness. In contrast, lawyers' needs satisfaction correlated so robustly with their happiness that "it may not be possible to experience thriving without relative satisfaction of all of these needs" (Krieger & Sheldon, 2015, p. 618). While Krieger and Sheldon did not delineate these findings between the judges and other lawyers in their sample, it was noted that judges were "clearly different" (p. 590) from the other lawyer participants in that they reported considerably higher levels of wellbeing and needs satisfaction. In Australia, legal academics have recently applied SDT and BPNT to an analysis of judicial motivation and court timeliness (Murray, Murray & Tulich, 2020).

Demographics and judicial stress

Within the empirical literature on judicial and lawyer stress, there is limited data relating to demographics. Some studies did not include demographic variables in their

analyses (e.g. Rogers et al., 1991; Showalter & Martell, 1985, Vrklevski & Franklin, 2008). Others specifically explored only one or two demographic factors (e.g. Flores et al., 2008; Jaffe et al., 2003; Kelk et al., 2009; Miller et al., 2018). Others, like the present study, collected broad demographic data to provide a detailed picture of where stress resides within the profession (e.g. Eells & Showalter, 1994; Chan et al., 2014; Krieger & Sheldon, 2015). Across the field, many significant demographic effects have been reported, however because stress is defined and operationalised differently in different studies, and because the populations within those studies also differ, no consistent answer has emerged to the question of which groups of lawyers and judges experience the greatest stress. Notwithstanding this ambiguity, it is helpful to review the findings from previous judicial and lawyer stress research that relate to the demographic variables included in the current study – age, gender, seniority, location, area of practice, and jurisdiction.

Age.

To our knowledge, only two studies have explored the effect of age on judicial stress. Eells and Showalter's (1994) study of 88 American trial judges explored effects of a broad range of demographic variables on 'Judicial Stress Inventory' scores (a composite score of subjective stress calculated from judges' reported frequency and intensity of 77 specific stressors of judicial office). They found no effect of age. Likewise, Lustig et al. (2008) found no statistically significant association between age and symptoms of burnout or secondary traumatic stress. Research on lawyer stress in Australia has generally found no effect of age (Chan et al., 2014; Bergin & Jimmieson, 2013; McGuire & Byrne, 2017), while similar overseas studies reported mixed findings. A Canadian study found no age effect on traumatic stress symptoms (Leclerc, Wemmers, & Brunet, 2019), whereas in the US, younger lawyers were found to have significantly higher rates of problematic drinking, depression, anxiety and stress (Krill et al., 2016).

Gender.

Within the limited international judicial stress literature, effects of gender have attracted considerable interest, with researchers reporting either no gender differences or elevated stress among women. In the US, female judges have been found to experience higher levels of secondary trauma (Flores et al., 2008; Jaffe et al., 2003; Lustig et al., 2008), work-related burnout (Lustig et al, 2008), depression symptoms and general stress (Flores et al., 2008) than male judges, with one recent study reporting an interaction effect on stress of gender and social support (higher social support was associated with lower stress and burnout, but only for men: Miller et al., 2018). Female judges in Poland were found to be more likely to report negative health outcomes (Orlak & Tylka, 2017) and in a qualitative study in South Africa were more likely to acknowledge symptoms of secondary trauma and burnout (Rossouw & Rothmann, 2020a).

In Australia, the extensive research on judicial workload and job satisfaction conducted by Roach Anleu and Mack (see e.g. Mack et al., 2012; Roach Anleu & Mack, 2017), in which all Australian courts participated, yielded some interesting insights on the differential experiences of women and men in judicial office. While not measuring stress from a psychological perspective, their meticulous sociological research explored a broad range of experiences and views that are likely related to stress. They found that overall work satisfaction is very similar between male and female judicial officers, however women were less satisfied than men with their levels of control over the amount and manner of their work, and viewed the job as interfering more with their family life (Roach Anleu & Mack, 2009). In addition, more female than male judicial officers reported "always feeling rushed" (Roach Anleu & Mack, 2014, p. 696). In the UK, the most recent iteration of the Judicial Attitudes Survey (Thomas, 2017) – which attracted a "near universal response rate" (p. 3) amongst salaried judges in England and Wales courts and UK tribunals – found no gender differences

in attitudes to workload or early retirement, but found women were more concerned than men about personal safety.

In the lawyer stress literature, studies in Australia (Brough & Boase, 2019; Chan et al., 2014; Bergin & Jimmieson, 2013; McGuire & Byrne, 2017), New Zealand (Hopkins & Gardner, 2012) and Canada (Koltai, Schieman, & Dinovitzer, 2018) have generally reported no gender differences, whereas studies in the US have variously reported both higher stress among women (anxiety and stress: Krill et al., 2016; depression: Benjamin et al., 1990) and higher stress among men (depression: Krill et al., 2016; distress, when male under-reporting was accounted for: Beck, Sales, & Benjamin, 1995). One Brazilian study reported higher levels of psychosomatic problems among women, but no differences in depression and job satisfaction (Costa & Ferreira, 2014). Studies that have included alcohol use and dependence as a measure of stress have reported significantly higher levels of problematic drinking among male lawyers (in Australia: Chan et al., 2014; in the US: Benjamin et al., 1990; Kreiger & Sheldon, 2015; Krill et al., 2016).

Overall, the judicial and lawyer stress research to date suggests that women in the profession are more likely to experience stress than men. This is broadly consistent with population mental health data, which demonstrates that women tend to be diagnosed more frequently with anxiety and mood disorders (see Leach, Christensen, MacKinnon, Windsor, & Butterworth, 2008)

Seniority

To our knowledge, only two judicial stress studies, both American and neither recent, have reported effects of seniority or length of service, and showed divergent results. The study of 88 US trial judges by Eells and Showalter (1994) mentioned earlier found that, of the demographics included – age, sex, type of court, substantive jurisdiction, method of selection, community served, years of judicial experience, and year of legal experience – only 'years of

legal experience' was correlated with judicial stress levels: judges with less legal experience were slightly more likely to experience stress. By contrast, Jaffe et al. (2003) found that more experienced judges (7+ years since appointment) reported higher levels of vicarious trauma and externalising-hostility symptoms. Together, these findings point to an interesting possibility when it comes to judicial stress – that some forms of stress may be most acute during the transition to the bench, whereas others may result from the cumulative impact of the work. This latter point is supported by the sociological judicial research of Australian researchers, Roach Anleu and Mack (2014), who found that more senior judicial officers were less satisfied with the intrinsic features of the job, perhaps suggesting that, with time, the work becomes "more routinised and less challenging" (p. 695).

Lawyer stress research has found either no effect of seniority (Chan et al., 2014; Bergin & Jimmieson, 2013; McGuire & Byrne, 2017) or higher levels of stress (depression, anxiety, problematic drinking, job dissatisfaction: Costa & Ferreira, 2014; Krill et al., 2016) among less experienced lawyers. It is worth noting, however, the studies that explored seniority effects of lawyer stress generally did not measure the forms of stress (e.g. secondary trauma, burnout) most likely to accumulate with experience (an exception being McGuire & Byrne, 2017).

Location.

Most Australian judicial officers are based in capital cities, either in the CBD or suburban courthouses, however a significant proportion of magistrates work in regional, rural or remote areas. While there is considerable qualitative and anecdotal material suggesting the work of country magistrates in Australia entails additional demands in terms of social isolation (Henson, 2015), driving time (Wright, 2014), security risk (Henson, 2015) and breadth and complexity of work (Roach Anleu & Mack, 2017; Wells, 2019), there has been only one empirical investigation of the association between working location and judicial

stress worldwide: Eels and Showalter (1994) in the US found no significant differences in stress levels across type of 'community served'.

Area of Practice.

While the commentary (Heilpern, 2017; Wells, 2019; Wilmoth, 2018) and theoretical literature (Chamberlain & Richardson, 2013; Hagen & Bogaerts, 2013; Miller & Richardson, 2006) on judicial stress emphasise distressing case material as a major source of stress, relatively few empirical studies have directly explored whether area of legal practice (i.e. case type) is associated with stress. Findings from several exploratory studies suggest that American judges *perceive* family and criminal law to be more stressful than other practice areas. When asked to identify the features of the role giving rise to stress, either from a list of potential judicial stressors (Flores et al., 2008) or in an open-ended survey question (Edwards & Miller, 2019), judges' highest ranked or most mentioned stressors were family law and criminal cases, especially cases involving gruesome evidence or the mistreatment of children. Indeed, Jaffe and colleagues' (2003) study of family, criminal juvenile court judges found that 63% exhibited symptoms of vicarious trauma. However, the only judicial stress study to have quantitatively *tested* for the effect of practice area – once again, the study by Eells and Showalter (1994) described earlier – found no significant association between practice area (termed 'substantive jurisdiction') and 'Judicial Stress Inventory' scores. By contrast, an Australian *lawyer* stress study found that criminal lawyers experienced significantly higher levels of subjective distress, vicarious trauma, depression and stress than non-criminal lawyers (Verklevski & Franklin, 2008), lending weight to the supposition that cases involving interpersonal violence, vitriol and vulnerability are more likely to give rise to stress.

Jurisdiction.

Within the court system, the term 'jurisdiction' is used variously to refer to an area of legal practice (e.g. the criminal jurisdiction), a geographical area subject to a common system of law and government (e.g. the jurisdiction of Victoria, an Australian state), and a type of court within the court hierarchy (i.e. summary, intermediate, superior, and appellate jurisdictions). In this study, we use the word 'jurisdiction' to refer to this latter distinction. To our knowledge, only one study internationally has directly tested for the effect of jurisdiction on judicial stress: the Eells and Showalter (1994) study found no effect of 'type of court' (grouped, in that study, as circuit, superior, district, or county courts) on subjective stress.

Outside the judicial stress literature, however, there has been considerable exploration of the differing judicial experience across levels of the court hierarchy. In Australia, the comparison is often made between the experience of *judges*, who work in the higher courts (i.e. intermediate and superior trial courts and appellate courts), and that of *magistrates*, who work in the lower courts (Roach Anleu & Mack, 2017). Roach Anleu and Mack (2014, 2017) have reported that, while almost all judges and magistrates described being highly satisfied with their work, the magistrates in their research were markedly *less* satisfied with the workplace-organisational context components of their work (e.g. technical support, court facilities, policies and administration) and with their level of control over workload, than were the judges. Also, magistrates were more likely than judges to endorse statements relating to stressful experiences, with 47% indicating that their work is always or often 'emotionally draining' (cf. 31% of judges), and 38% agreeing or strongly agreeing that 'making decisions is very stressful' (cf. 32% of judges: Roach Anleu & Mack, 2017). Similarly, in the UK Judicial Attitudes Survey, judges in lower courts expressed greater need for support in dealing with stressful conditions at work than judges in the higher courts

(Thomas, 2017). Together, these findings provide some basis to expect that judicial officers in high-volume, summary jurisdictions (in Australia, the magistrates) may experience higher levels of stress than those in trial and appellate jurisdictions.

This Study

The present study is the second of three reports arising from Australia's first research using validated instruments to measure judicial stress and wellbeing. Schrever et al. (2019) reported the primary analysis of the quantitative data regarding the prevalence and severity of work-related stress among the Australian judiciary. It found that, compared to the general population, Australian judicial officers reported elevated rates of non-specific psychological distress, burnout, secondary traumatic stress and alcohol use. In order to develop responses and interventions to address the stress experienced by judicial officers, a better understanding of the drivers of stress, and which judicial officers are experiencing the most stress, is required. This article reports the secondary analysis of the quantitative data, exploring the relationships among the variables, including demographic effects. Specifically, the factors driving judicial stress and wellbeing are explored, by addressing the following research questions:

Q1: Are levels of judicial stress (measured as Non-specific Psychological Distress, Mental Ill-health, Burnout, Secondary Traumatic Stress, and Alcohol Use and Dependence) predicted by the extent to which the basic psychological needs of Autonomy, Competence and Relatedness are satisfied within the working environment?

Q2: Which demographic factors (i.e. age, gender, seniority, location, area of practice, and jurisdiction) are associated with higher levels of judicial stress (measured as Non-specific Psychological Distress, Mental Ill-health, Burnout, Secondary Traumatic Stress, and Alcohol Use and Dependence)?

Method

The present study was part of a larger exploratory, mixed-methods research project, which aimed to explore the nature, prevalence, severity and sources of judicial stress in Australia. The project was supported by the participating jurisdictions, the Judicial College of Victoria, and the Australasian Institute of Judicial Administration, and received approval from the Human Recent Ethics Committees for the University of Melbourne (Ethics ID: 1646836) and the participating Courts (JHREC Approval number: CF/16/2871). The full methodology for the research project is described elsewhere (Schrever et al., 2019), and the sections relevant to the present study are summarised below.

Sample Recruitment and Procedure

The sample comprised 152 judicial officers from five Australian jurisdictions, spanning the court hierarchy from summary to appellate level. Judicial officers from each court were invited to participate in the survey following a presentation on 'Judicial Stress and Wellbeing' at one of their court's internal judicial conferences between July 2016 and April 2017. Participation was voluntary and anonymous. The survey was divided into two sections: Part 1, taking 10-15 minutes to complete; and Part 2, taking 15-20 minutes to complete. Upon completing Part 1, participants could elect to proceed to Part 2, or to exit the survey. Table 1 sets out the sample size and demographic composition across Parts 1 and 2. The response rates within each of the participating courts were strong, ranging between 51% and 85%, with an overall response rate of 67%. In order to preserve the anonymity of individual participants and the five participating courts, it is not possible to report specific response rates against each demographic variable, however it can be reported that the sample was broadly representative across age, gender, seniority, location, and area of practice.

[Insert Table 1 about here]

Sample Demographics

The survey included a number of items relating to participant age, gender, seniority, location, practice area, and jurisdiction. The sample composition across these demographic variables is set out in Table 1. Participants' mean age was 57.8 years (range = 38-71; *SD* = 6.9), and their average length of service (i.e seniority) was 9.5 years (range = .2-30; *SD* = 6.6), with 68.4% of participants indicating that they were appointed less than 10 years ago. The majority of the participants were male (56.6%), and were located in urban (67.1%), as opposed to suburban (20.4%) or rural (12.5%), courthouses.

Participants indicated their 'main area of practice' by selecting one of 'Crime', 'Civil / Common Law', 'Commercial', 'Coronial', with the option of ticking more than one if their time was divided *equally* across two or more practice areas. As some evidence exists that legal work involving exposure to traumatic material (information and evidence relating to violence, abuse, disaster and mistreatment) is associated with elevated stress (McGuire & Byrne, 2017; Vrklevski & Franklin, 2008), participants' 'main area of practice' was grouped according to the likely level of exposure to traumatic content. The three groups were (1) Criminal and/or Coronial (high likely exposure); (2) Civil and/or Commercial (low likely exposure); (3) Combination (moderate likely exposure). As shown in Table 1, the majority (58.6%) indicated that their main area of practice was either Crime or Coronial work.

Participants indicated the jurisdiction in which they *currently* sit, from a list of five possibilities – (1) Supreme Court (including Court of Appeal); (2) County /District Court; (3) Magistrates' / Local Court; (4) Children's / Youth Court; (5) Coroners Court. While judicial work and working conditions differ across all jurisdictions, as discussed earlier, in Australia at least, the most obvious distinction is between the work of magistrates and the work of judges (Roach-Anleu & Mack, 2017). For this reason, participants' jurisdictions were

grouped into two categories: summary jurisdictions (magistrates) and higher jurisdictions (judges). As set out in Table 1, the numbers of magistrates and judges in the present study were broadly equivalent, with participants from the summary jurisdictions comprising 55.3% of the sample.

Measures

The study survey comprised a number of standardised and validated psychometric instruments for different occupational stress and wellbeing constructs. Part 1 included measures of basic psychological needs satisfaction, psychological distress, and mental ill-health. Part 2 included measures of burnout, secondary traumatic stress, and alcohol use and dependence.

BPNSFW Scale

The 24-item Basic Psychological Needs Satisfaction and Frustration at Work Scale (BPNSFW Scale: Chen et al., 2015; Schulz et al., 2014) is the most recent contribution to the family of published SDT scales measuring experiences of Autonomy, Competence and Relatedness within the working environment. Using a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree), participants are asked to respond to work-related statements in terms of their experience over *the past four weeks*. There are eight items for each of the three basic psychological needs, four relating to positive experiences (i.e. needs satisfaction) and four relating to negative experiences (i.e. needs frustration). Earlier versions of the scale had fewer items – 21 (Ilardi, Leone, Kasser, & Ryan, 1993) or 15 (Kasser, Davey, & Ryan, 1992) – and did not disaggregate needs frustration from needs satisfaction. All versions have documented internal reliability and construct validity (Chen et al., 2015; Ilardi et al., 1993; Kasser et al., 1992; Schulz et al., 2014). In the present study, frustration items were reverse-scored so that a single 'needs satisfaction' score could be calculated for each of the three

subscales: Autonomy, Competence and Relatedness. Final scores ranged from 1 to 7, with higher scores indicating greater needs satisfaction.

K10

Judicial officers' levels of non-specific psychological distress were measured on the Kessler 10 Scale (K10: Kessler et al., 2002) – a widely used and standardized screening tool in clinical settings and population metal health research (see ABS, 2012). The K10 is 10-item, 5-point Likert scale assessing how often *in the past 4 weeks* (1 = none of the time; 5 = all of the time) participants have experienced 10 symptoms of psychological distress. Possible scores range from 10 to 50, with higher scores indicating more severe distress. The K10 has excellent psychometric properties, including internal reliability, and content and construct validity (Andrews and Slade, 2001).

DASS-21

Levels of mental ill-health were measured using the 21-item Depression Anxiety and Stress Scales 21 (DASS-21: Lovibond & Lovibond, 1995), a validated and standardized test of 'affective distress symptoms' (Lovibond & Lovibond, 1993). Each of the 7-item sub-scales – Depression, Anxiety and Stress –utilizes a 4-point scale relating to the severity and/or frequency series of symptoms *over the past week* (0 = did not apply to me at all; 3 = applied to me very much or most of the time). Total scores for each sub-scale ranging from 0-21, with higher scores indicating more severe symptomatology. The DASS-21 has been widely used in occupational stress research, including Australian studies into lawyer and law students' wellbeing, and has well-established validity and reliability (Lovibond & Lovibond, 1995)

MBI-GS.

The Maslach Burnout Inventory-General Survey (MBI-GS: Schaufeli, Leiter, Maslach, & Jackson, 1996) is a 16 item, 7-point Likert scale measuring the frequency (0 =

never, 6 = every day) certain job-related experiences *with no timeframe imposed*. The MBI-GS assesses burnout across three sub-scales – Exhaustion (5 items), Cynicism (5 items), and Professional Efficacy (6 items) – generating average scores for each ranging from 0-6. Burnout is associated with higher scores on Exhaustion and Cynicism and lower scores on Professional Efficacy. The MBI-GS is considered the 'gold standard' (Schutte, Toppinen, Kalimo, & Schaufeli, 2000, p. 53) assessment tool for burnout due to its excellent reliability and construct validity, broad normative data.

STSS.

Judicial officers' levels of secondary traumatic stress were measured on the Secondary Traumatic Stress Scale (STSS: Bride, Robinson, Yegidis, & Figley, 2004) – a 17-item, 5-point Likert scale measuring the frequency (1 = never; 5 = very often) of secondary trauma symptoms *over the past 7 days*. Maintaining congruence with the diagnostic criteria for PTSD, the three STSS subscales are Intrusion (5 items), Avoidance (7 items) and Arousal (5 items). Four scores are generated by summing responses: the total for each subscale (ranging from 5 to 25 for Intrusion and Arousal, and from 5 to 35 for Avoidance) and the overall total (Total STS, ranging from 17 to 85), with higher scores indicating more severe secondary trauma. As permitted by the scale's authors (Bride et al., 2004), items referring to 'clients' or 'work with clients' were changed, respectively, to 'people who come before me' or 'court work'. The STSS has well documented reliability, convergent and discriminant validity, and factorial validity (Bride et al., 2004), and was used in a study of stress among US immigration judges (Lustig et al. 2008).

AUDIT.

Alcohol use and dependence was measured on the World Health Organisation's Alcohol Use Disorders Identification Test (AUDIT: Saunders, Aasland, Babor, de la Fuenta, & Grant, 1993). The AUDIT is a 10-item test assessing the frequency, quantity, dependence

and harmful consequences of alcohol use on a 3- or 5-point Likert scale, depending on the question. Summing responses generates a total AUDIT score between 0 and 30, with higher scores indicating higher risk drinking. The widely used test has excellent psychometric properties and population norms (Reinert & Allen, 2007; Saunders et al., 1993), including within the legal profession (Chan et al., 2014; Krill et al., 2016).

Results

Survey data was entered into the Software Package for the Social Sciences (SPSS Version 25) by an independent research assistant and checked by the researcher prior to analysis. The measures included in the survey gave rise to three Basic Psychological Needs Satisfaction Variables (Autonomy, Competence, and Relatedness), and 12 Stress Variables (Psychological Distress (K10), Depression (DASS-21), Anxiety (DASS-21), Stress (DASS-21), Exhaustion (MBI-GS), Cynicism (MBI-GS), Professional Efficacy (MBI-GS), Intrusion (STSS), Avoidance (STSS), Arousal (STSS), Total STSS, and Alcohol Use and Dependence (AUDIT)). The demographic questions gave rise to six demographic variables (age, gender, seniority, location, area of practice, and jurisdiction).

Preliminary Analyses

Reliability.

As reported in the first study (Schrever et al, 2019), the internal reliability was sound (Cronbach's α>.75) for all measures of basic psychological needs satisfaction and stress.

Descriptive statistics.

The descriptive statistics for the three Basic Psychological Needs Satisfaction Variables and the 12 Stress Variables are set out in Table 2.

[insert Table 2 about here]

Distribution of variable scores.

The Shapiro-Wilk statistic was significant (p<.05) for all 15 variables, indicating a non-normal distribution of scores for all measures included in the study. Examination of the histograms, together with the skewness and kurtosis values, revealed that some variables were skewed and peaked, and some were double peaked. Consistent with the prevalence and severity findings reported in the first report (Schrever et al., 2019), negatively skewed distributions of stress scores suggest that while most respondents reported low levels of

stress, some reported stress in the high ranges.. To guard against biases in statistical inferences, both parametric (Pearson's *r*; *t*-tests; ANOVAs) and non-parametric (Spearman's ρ; Mann-Whitney U tests; Kruskal-Wallis tests) analyses were conducted and revealed that the choice of analytical technique did not alter most results (details below). For this reason, parametric analyses are reported. However, where analogous non-parametric analyses yielded discrepant results (i.e. what was significant with parametric analyses was not significant with non-parametric analyses, or vice versa) both results are reported.

Relationships among Basic Psychological Needs Satisfaction Variables.

Intercorrelation analyses were performed on the three Basic Psychological Needs Satisfaction Variables. The variables were all significantly and positively correlated, with the strength of association in the medium ($.3<r<.5$) range: Autonomy correlated with Competence ($r=.30$, $n=151$, $p<.001$); Autonomy with Relatedness ($r=.47$, $n=152$, $p<.001$); Competence with Relatedness ($r=.47$, $n=151$, $p<.001$). These results indicate that higher satisfaction of one basic psychological need was associated with higher satisfaction of the other two.

Relationships among Stress Variables.

Intercorrelation analyses were also performed on the 12 Stress Variables. As set out in Table 3, 10 of the 12 stress variables were all significantly and positively correlated, with the strength of association in the medium ($.3<r<.5$) to large ($r>.5$) ranges. Unsurprisingly, the strongest associations were between Total STS and the three STS subscales: STS Avoidance ($r=.94$, $n=122$, $p<.001$); Arousal ($r=.91$, $n=122$, $p<.001$); and Intrusion ($r=.87$, $n=122$, $p<.001$). Two variables require further commentary. The first is Burnout Professional Efficacy, which was significantly but *negatively* correlated with the other stress variables, with the strength of association generally in the small ($r<.3$) range. As *higher* Professional Efficacy is associated with *lower* stress, the negative associations were to be

expected. The second is Alcohol Use and Dependence, which was weakly negatively correlated with STS Intrusion and otherwise not significantly correlated with any of the other Stress Variables. Of note, Burnout Professional Efficacy and Alcohol Use and Dependence were also the only two variables for which non-parametric analyses yielded some discrepant results (see notes in Table 3).

[insert Table 3 about here]

Relationships between Basic Psychological Needs Satisfaction and Stress Variables.

Correlation analyses were undertaken to investigate the relationships between the Basic Psychological Needs Satisfaction Variables and the Stress Variables (see Table 4). With two exceptions, the 12 Stress Variables were all significantly and negatively correlated with the three Basic Psychological Needs Satisfaction Variables. The strongest correlations were between Relatedness and Burnout Cynicism (r=-.55, n=125, p<.001), Autonomy and Burnout Cynicism (r=-.53, n=125, p<.001), and Autonomy and Burnout Exhaustion (r=-.49, n=124, p<.001). In line with the intercorrelations discussed above, the two exceptions were once again Burnout Professional Efficacy, which was significantly but *positively* correlated with Basic Psychological Needs Satisfaction variables, and Alcohol Use and Dependence, which was not significantly correlated with any of the Basic Psychological Needs Satisfaction Variables.

[insert Table 4 about here]

Research Question 1: Is Judicial Stress Predicted by Basic Psychological Needs Satisfaction?

A series of multiple linear regressions were conducted to determine if levels of basic psychological needs satisfaction predicted levels of stress – i.e. whether Autonomy, Competence and Relatedness predicted each of the Stress Variables (excluding Alcohol Use

and Dependence, which, as discussed above, was not significantly correlated with the Basic Psychological Needs Satisfaction Variables). Preliminary analyses confirmed that assumptions of normality, linearity, homoscedasticity, and independence of residuals were satisfied, and the data was not critically affected by multicollinearity or outliers. As set out in Table 5, the results of the regression analyses showed that, for each of the 11 remaining Stress Variables, the model was significant, explaining between 8.2% and 39.2% of the variance in scores. Effect sizes, calculated using Cohen's f^2, were in the medium range (.15<Cohen's f^2<.35) in most cases. Large effect sizes (Cohen's f^2>.35) were found for the regressions of the Basic Psychological Needs Satisfaction model on Psychological Distress (Cohen's f^2=.45), Burnout Exhaustion (Cohen's f^2=.35), and Burnout Cynicism (Cohen's f^2=.64). The effect size was in the small range (Cohen's f^2<.15) for DASS Anxiety (Cohen's f^2=.08) and STS Intrusion (Cohen's f^2=.14).

[insert Table 5 about here]

As shown in Table 5, there was at least one unique predictor among the Basic Psychological Needs Satisfaction Variables for all but one of the Stress Variables – the exception being DASS Anxiety, which had no unique predictors. In most instances, Relatedness was the strongest predictor, uniquely predicting Psychological Distress, DASS Depression, Burnout Cynicism, Burnout Professional Efficacy, STS Avoidance, STS Arousal and Total STS. Autonomy made the strongest unique contribution to predicting Burnout Exhaustion and DASS Stress, and also a statistically significant unique contribution to predicting Psychological Distress, DASS Depression, and Burnout Cynicism. Competence made the strongest unique contribution to predicting STS Intrusion, and a statistically significant unique contribution to predicting Psychological Distress.

Research Question 2: Which Demographic Variables are Associated with Higher Levels of Judicial Stress

As series of analyses were performed to explore whether the demographic variables were associated with levels of basic psychological needs satisfaction and levels of stress.

Age.

Correlation analyses were conducted to determine whether there was an effect of judicial officers' age (in years: M=57.8, SD=6.9, range = 38-71) on levels of stress and basic psychological needs satisfaction. Age was not significantly correlated with the variables regardless of analytical technique (parametric analysis: -.17<r<.13, p>.05; non-parametric analysis: -.17<ρ<.13, p>.05). There were three exceptions in which either parametric or non-parametric tests showed a different association; however, none were significant across both types of tests. The three exceptions were Intrusion and Total STS, for which weak negative correlations with age were found when applying parametric analyses (r=-.19, p<.05 and r=-.20, p<.05 respectively), and DASS Depression, for which a weak negative correlation was found when applying non-parametric analyses (ρ=-.17, p<.05), indicating that younger judicial officers reported slightly higher levels of depressive and secondary trauma symptoms than older judicial officers.

Gender.

Independent samples t-tests and Mann-Whitney U tests were used to explore the effect of gender on basic psychological needs satisfaction and stress. Depending on the variable, the number of men in the sample ranged from 64 to 86, and the number of women ranged from 56 to 66. With three exceptions, there were no significant differences between male judicial officers' and female judicial officers' scores on any of the variables. The three exceptions were Burnout Exhaustion (t(122)=-2.93, p<.01, Cohen's d = 0.52, men (n=65, M=1.93, SD=1.31), women (n=59, , M=2.64, , SD=1.39)) and Alcohol Use and Dependence

($t(119)=-2.93$, $p<.05$, Cohen's $d = 0.42$, men ($n=65$, $M=6.91$, SD=3.81), women ($n=56$, $M=5.20$, $SD=4.29$)), for which *t*-tests revealed a significant difference, and DASS Depression, for which the Mann-Whitney U test calculated a significant difference ($U=3499$, $z=2.53$, $p<.05$, $r=0.21$, men ($n=86$, $M=2.09$, $SD=2.36$, $Mdn=1.00$), women ($n=66$, $M=2.38$, $SD=3.31$, $Mdn=1.00$)). These results indicate women reported higher levels of exhaustion and depressive symptoms, and a lower levels of alcohol use, than men. Again, however, no gender differences were significant across both parametric and non-parametric analysis.

Seniority.

The effect of seniority, measured as years since appointment ($M=9.5$, $SD=6.6$, range = .2-30), was explored by correlation analysis. Seniority was not significantly correlated with any of the Basic Psychological Needs Satisfaction or Stress Variables (parametric analysis: $-.12<r<.13$, $p>.05$, non-parametric analysis: $-.14<\rho<.10$, $p>.05$). There were two exceptions in which non-parametric analysis showed a significant association: Spearman's ρ calculated a weak positive correlation between seniority and Burnout Professional Efficacy ($\rho=.21$, $p<.05$) and a weak negative correlation between seniority and STS Avoidance ($\rho=-.18$, $p<.05$), suggesting that more experienced judicial officers reported slightly higher levels of professional efficacy and slightly lower levels of avoidance symptoms than less experienced judicial officers. Importantly, neither of these correlations were significant under parametric analysis (Pearson's *r*).

Location.

Participants' current working location was reported across three groups: urban (number of participants (*n*) ranging from 82 to 102, depending on the variable), suburban (*n* ranging from 22 to 31), and rural (*n* ranging from 17 to 19). A series of one-way between groups ANOVAs (parametric analysis) and Kruskal-Wallis Tests (non-parametric analysis) were conducted to explore the effect of location on stress and basic psychological needs

satisfaction. Across the 15 dependent variables, neither parametric nor non-parametric analysis revealed any significant differences in levels of basic psychological needs satisfaction or stress among the three location groups, indicating that working location was not associated with judicial officers' levels stress or basic psychological needs satisfaction.

Area of practice.

A series of one-way between groups ANOVAs (parametric analysis) and Kruskal-Wallis Tests (non-parametric analysis) were conducted to explore the effect of practice area, grouped as (1) Crime and/or Coronial, (2) Civil and/or Commercial, and (3) Combination, on stress and basic psychological needs satisfaction. Across the 15 dependent variables, neither parametric nor non-parametric analysis revealed any significant differences in levels of basic psychological needs satisfaction or stress among the three practice area groups, suggesting that area of practice was not associated with judicial officers' levels stress or satisfaction.

Jurisdiction.

Differences in summary jurisdictions' (i.e. magistrates') and higher jurisdictions' (i.e. judges') levels of stress and basic psychological needs satisfaction were explored using *t*-tests (parametric analysis) and Mann-Whitney U Tests (non-parametric analysis). Mean differences between magistrates' and judges' scores on the 15 dependent variables are summarised in Table 6 and shown in Figure 1. Compared with judges, magistrates reported significantly *lower* levels of Autonomy and Relatedness satisfaction, and significantly *higher* levels of Psychological Distress, DASS Anxiety, DASS Stress, and Burnout Exhaustion. There were no significant differences between magistrates' and judges' levels of Competence satisfaction or stress as measured by the other Stress Variables. With one exception, non-parametric analysis did not alter the significance of the results. The exception was DASS Stress, for which a significant difference was found with parametric, but not non-parametric, analysis (U=3254, z=1.26, p>.05, r=.11, Magistrates (n=68, M=5.56, SD=4.03, Mdn=5.0),

Judges (*n*=56, *M*=4.38, *SD*=3.02, *Mdn*=5.0). The effect sizes for the significant differences, calculated using Cohen's *d*, were in the medium range (.5<Cohen's *d*<.8) for Psychological Distress and Burnout Exhaustion, and were otherwise in the small range (Cohen's *d*<.5). Together, these findings reveal that magistrates in this study experienced considerably higher levels of exhaustion, distress and anxiety, and lower levels of autonomy and relatedness, than judges.

[insert Table 6 about here]

[insert Figure 1 about here]

Summary of demographic effects.

Of the demographic variables included in this study – age, gender, seniority, location, area of practice, and jurisdiction – jurisdiction alone was found to have a significant effect on levels of stress and basic psychological needs satisfaction that was robust across analytic technique. Some isolated effects were found for age, gender and seniority, however in no instance were those effects significant across both parametric and non-parametric analysis. The implication of these findings is that there is something about the work and/or working conditions of magistrates that is associated with lower levels of basic psychological needs satisfaction and higher levels of stress compared to judges.

A Regression Model of Judicial Stress

To investigate whether magistrates' elevated levels of exhaustion, distress and anxiety were explained by their lower levels of autonomy and relatedness satisfaction, a series of multiple linear regression analyses were performed. As reported above, earlier regression analyses showed that each of the Stress Variables (except Alcohol Use and Dependence) were predicted by the Basic Psychological Needs Satisfaction model, with Autonomy and Relatedness often emerging as unique predictors. To determine whether there was a unique effect of jurisdiction on levels of stress, jurisdiction was added as another predictor into the

regression models for Psychological Distress, DASS Anxiety, DASS Stress, and Burnout Exhaustion after Basic Psychological Needs Satisfaction was controlled for. The results are summarised in Table 7. The models were significant for all four dependent variables, however jurisdiction made a significant unique contribution to explaining the variance of only one of them: jurisdiction uniquely explained 3% of the variance in Psychological Distress scores. Incorporating jurisdiction as a predictor alongside the Basic Psychological Needs Satisfaction Variables only marginally improved the model, explaining an additional 2% of the variance in Psychological Distress, DASS Anxiety, and Burnout Exhaustion, and an additional 1% of the variance in DASS Stress, than the model without jurisdiction. These results suggest that the elevated levels of stress reported by magistrates may be accounted for by their lower levels of reported Autonomy and Relatedness satisfaction.

[Insert Table 7 about here]

Discussion

This study built upon the findings of the research project's first study (Schrever et al., 2019) with the aim of determining *which* judicial officers are most stressed, and *why*. The exploratory analysis of the relationships among the Stress and Basic Psychological Needs Variables, and the effects of the demographic variables, revealed four important findings.

First, the results indicated that there was no significant association between judicial officers' use of alcohol and their levels of stress. All measures of stress were significantly and positively intercorrelated *except* alcohol use and dependence (i.e. AUDIT scores), which was weakly negatively correlated with STS Intrusion, but otherwise not significantly correlated with any of the other Stress Variables or the Basic Psychological Needs Variables. This result was surprising, given the number of studies into lawyer wellbeing that have empirically (Chan et al., 2014; Kreiger & Sheldon, 2015; Krill et al., 2016) or implicitly (Benjamin et al., 1990; Beaton Consulting, 2007) linked problematic drinking to elevated stress among legal professionals. Referencing this research, professional reports (NTLW, 2017; Helm, 2014) and academic writing (Daicoff, 2004; Drogin, 1991; Schiltz, 1999) have asserted that alcohol abuse among lawyers is both "a method of coping with stress and a sign of psychological distress itself" (Daicoff, 2004, p. 120). This view is in line with population addiction research, which describes a "reciprocal relationship" (Anthenelli, 2012, p. 387) between stress and alcohol consumption, in which drinking helps a person cope with stress in the short-term, but in the longer term leads to an upward spiral of stress and drinking. Whether a coping strategy or a direct manifestation of stress, the assumption has been that lawyers' alcohol use is causally related to stress within the profession. The present research suggests this may not be the case for judicial officers. While overall alcohol use has been found to be almost as high for Australian judicial officers as for Australian lawyers (Schrever et al., 2019), with 30.4% reporting drinking in the problematic range, the non-significant

correlation in the present study suggests problematic drinking among the judicial participants was neither a sign of stress nor a stress management strategy. If judicial officers' elevated alcohol use is not explained by their elevated stress, it may be that excessive drinking is simply a feature of the professional culture from which they are drawn. Given the potential clinical and social significance of alcohol misuse among lawyers and judicial officers (Childers, 2006; Gray, 2006), more research is needed to elucidate the complex relationships between stress, drinking and culture within the profession.

Second, the results showed that judicial officers' levels of stress were predicted by the extent to which their basic psychological needs of Autonomy, Competence and Relatedness were satisfied within their working environment, providing an affirmative answer to the first research question of the study. This is consistent with previous studies applying BPNT to the investigation of stress and wellbeing among law students (Larcombe & Fethers, 2013; Sheldon & Krieger, 2004, 2007) and lawyers (Krieger and Sheldon, 2015), including the seminal work by Krieger and Sheldon (2015), which found that basic psychological needs satisfaction was more strongly correlated with lawyer wellbeing than factors relating to demographics, life choices, and external indicators of success. Furthermore, our finding extends this literature by demonstrating that BPNT, as an explanatory framework for occupational stress and wellbeing, is as applicable to judicial officers as it is to the rest of the legal profession. Just like lawyers, law students and, indeed, all human beings, judicial officers need authenticity, autonomy, close relationships, and supportive leadership and administration in order to thrive (Krieger & Sheldon, 2015; Sheldon & Krieger, 2004, 2007). In particular, experiences of Relatedness – which made the strongest unique contribution to predicting seven of the 11 Stress Variables – appear crucial to judicial wellbeing. Those judicial officers who reported experiencing closer and more trusting relationships at work were measurably less stressed than others, perhaps pointing to the commonly cited

experience of professional isolation (Kirby, 1995, 1997; Zimmerman, 2006) as a particular stressor of judicial office.

Third, in response to the second research question, the analysis of demographic effects found that the only demographic variable reliably and robustly associated with judicial stress levels was jurisdiction. Judicial officers in the summary jurisdictions (i.e. magistrates) reported significantly higher levels of stress (specifically Psychological Distress, DASS Anxiety, DASS Stress and Burnout Exhaustion) and significantly lower levels of basic psychological needs satisfaction (specifically Autonomy and Relatedness) than those in the higher jurisdictions (i.e. judges). The significant and robust effect of jurisdiction is at odds with the results of the only other judicial stress study to have directly tested for such an effect. In their sample of US trial judges by Eells and Showalter (1994) found no association between stress and 'type of court'[2]. It is, however, consistent with the extensive sociological research into judicial experience by Roach Anleu and Mack (2014, 2017) in Australia, and Thomas (2017) in the UK. The former reported that judicial officers in the lower courts were more likely that those in the higher courts to endorse statements relating to stressful experiences, while the latter noted that they expressed a greater need for support in dealing with stressful conditions. The absence, in the present study, of other robust demographic effects, in particular effects of gender and area of practice, is somewhat unexpected, given the weight of judicial and lawyer stress research to date has generally found greater stress among women (see e.g. Benjamin et al, 1990; Flores et al, 2008; Jaffe et al 2003) and greater stress among criminal and family law practitioners (see e.g. Flores et al, 2008; Jaffe et al 2003; Verklevski & Franklin, 2008).

[2] The authors are aware of an as yet unpublished study of judges and magistrates in New South Wales, Australia, which directly explored differences in levels of traumatic stress between judges and magistrates and, like the present study, found magistrates reported significantly higher levels of stress than judges.

Finally, the results suggest that magistrates' lower levels of basic psychological needs satisfaction are largely responsible for their higher levels of stress. The inclusion of jurisdiction as an additional predictor in the regression of Autonomy, Competence and Relatedness on Psychological Distress, DASS Anxiety, DASS Stress and Burnout Exhaustion (the four Stress Variables for which magistrates scored significantly higher than judges), did not meaningfully improve the models, suggesting that differences in stress between magistrates and judges were largely accounted for by their differences in basic psychological needs satisfaction. The finding that judges and magistrates reported similar levels of Competence satisfaction indicates that the higher levels of stress reported by magistrates is being driven by their lower levels of Autonomy and Relatedness satisfaction.

This is a novel and important finding, which extends the judicial stress literature in two ways. First, it offers a psychologically grounded understanding for how workplace factors impact on stress in judicial office. Previous studies of judicial stress have generally been *descriptive* – describing the prevalence and severity of stress among judicial officers (e.g. Flores et al., 2008; Jaffe et al., 2003; Lustig et al., 2008; Miller et al., 2018) and/or quantifying the frequency and perceived impact of possible stressors (e.g. Ciocoiu, Cojocaru, & Ciocoiu, 2010; Rogers et al., 1991). Few have directly tested the workplace factors *empirically associated* with judicial stress. Those that have, variously reported that judicial stress increases in the context of workplace features that are broadly analogous to experiences of reduced Autonomy and Relatedness: lower job control (in Poland: Orlak & Tylka, 2017), more severe work organisation and socio-professional relations (in Brazil: Amazarray et al., 2019), and low workplace support (in Taiwan: Tsai & Chan, 2010). The present study advances this area of research in finding a predictive relationship between these variables, in particular highlighting the roles of Autonomy and Relatedness.

Second, this finding offers an empirical explanation for elevated stress in the lower courts, one that provides some direction to redress this very concerning situation. In Australia, it is widely recognized that magistrates' working conditions are markedly different to those of judges. It has been observed that, compared with judges, Australian magistrates generally labour under higher caseloads, greater time pressure, and a heightened experience of both routinization and unpredictability, while also managing, with fewer administrative supports, significantly more unrepresented parties and less prepared counsel (Roach Anleu & Mack, 2017). Also, in criminal matters, magistrates carry the burden of determining both verdict and sentence, whereas trial judges often accept the verdict of the jury and are responsible only for sentencing. It has often been assumed, quite logically, that some combination of these factors translates to higher stress among Magistrates (see Kirby, 1995; Mack et al., 2012; Roach Anleu & Mack, 2017), but a causal relationship had not been tested. Our finding supports the view that fewer opportunities for control and self-direction (i.e. Autonomy) and for authentic and supportive collegial connection (i.e. Relatedness) explain the higher stress reported by magistrates. Also, it is consistent with the sociological research of Roach Anleu and Mack (2017) which reported that, compared with judges, magistrates describe lower levels of satisfaction with their 'control over manner of work' and 'control over amount of work' (p. 72) and concluded that "high volume lower courts with unrelenting caseloads translate into experiences of reduced autonomy" (p. 73).

Implications of Study Findings

The broader research project makes a significant contribution to the growing body of empirical research on judicial stress and wellbeing (Schrever et al., 2019). Within that, the present study offers insights of particular relevance to the management of judicial stress. Whereas previous research has generally focused on examining of levels of stress in judicial office, the present study investigated the demographic and workplace factors associated with

that stress. In revealing that magistrates were significantly more stressed than judges, and that this may be in part explained by magistrates' lower levels of Autonomy and Relatedness satisfaction, the findings of present study give rise to two important implications.

First, they corroborate existing calls for additional occupational and wellbeing supports for magistrates and other judicial officers in high-volume, summary jurisdictions. In Australia, recent years have seen the tragic deaths by suicide of several judicial officers from high-volume jurisdictions – two from the Magistrates' Court of Victoria and one from the Federal Circuit Court (formerly the Federal Magistrates' Court). The commentary (Richardson, 2020; Wilmoth, 2018) and coronial investigations (Court of Victoria, 2020a, 2020b) concerning these deaths have emphasised the stressful work lives of magistrates and called for an urgent and evidence-based systemic response. As noted earlier, detailed sociological research in Australia (Roach Anleu & Mack, 2017) and the UK (Thomas, 2017) had already highlighted the differences in working conditions and daily experience between magistrates and judges.

Second, the findings provide direction for judicial wellbeing initiatives that could be adopted by courts, governments and judicial education bodies to better support judicial officers in their complex and critical work. While there has been much written about the pressures and challenges of judicial work (e.g. Eells & Showalter, 1994; Heilpern, 2017; Kirby 1995, 1997; etc) and the nature and severity of stress among judicial officers (e.g. Flores et al., 2008; Jaffe et al., 2003; Schrever et al. 2019), there has been less discussion about how judicial stress might best be managed – especially at the level of the Court as a workplace. The present study suggests that interventions with a focus on enhancing experiences of Relatedness and, particularly in the lower courts, Autonomy, are likely to have the greatest impact on judicial wellbeing. The BPNT literature offers considerable guidance for how this might be done. A full exploration of this literature is beyond the scope of this

paper, however some high-level observations can be made. Research has demonstrated that 'autonomy-supportive social contexts' are measurably related to fulfilment of all three basic psychological needs (Gagne, Senecal, & Koestner, 1997). In the work setting, 'autonomy-supportive social contexts' are those in which leadership consistently (1) takes and acknowledges the perspective of those they lead; (2) provides greater choice when possible; (3) encourages self-initiation; (4) provides enough structure for tasks to be challenging, but not overwhelming; (5) provides meaningful rationale for tasks; (6) is genuinely concerned about and respectful to all they lead (Gagne & Deci, 2005; Schultz et al., 2014).

Applying these principles to the courts, judicial leaders could evaluate how each of these components is expressed within their jurisdiction and consider what institutional changes might increase their expression – an exercise that may both support judicial wellbeing and enhance judicial performance (Murray et al., 2020). In addition, judicial education could include information about evidence-based "autonomy-enhancing strategies" (Brafford & Rebele, 2018, p. 64) that individual judicial officers could adopt to maximise their experience of intrinsic motivation and volition in their roles. Fostering Relatedness within the court environment could involve a range of structural, cultural and educational initiatives directed to increasing opportunities for belongingness and positive and authentic connections. Structural initiatives could include embedding facilitated peer supervision or reflective practice groups among judicial colleagues (Cole-Mosslan, Crnkovich, Gendler, & Gilkerson, 2018); cultural initiatives could include explicit project of "rooting out incivility" (Brafford & Rebele, 2018, p. 66) within collegial interactions; and education initiatives might involve ensuring regular professional development occasions focused on the human dimension of judging.

Limitations and Future Research

A major limitation of the research project is that it involved only five Australia courts, making it difficult to determine to what extent the findings generalise to other jurisdictions in Australia and overseas (Schrever et al., 2019). A national study of judicial stress and wellbeing is needed, and comparative research with other jurisdictions would also be helpful. Also, while the measures selected for the project were all validated and widely used, they are mostly brief screening tools, rather than diagnostic instruments (e.g. the AUDIT is intended as a quick questionnaire providing as snap-shot of alcohol use and dependence, but does not explore many complex aspects of alcoholism and addiction: Higgins-Biddle & Babor, 2018). For a deeper understanding of how the stress constructs in our study affect judicial functioning, future research could involve a range of measurement techniques, including more detailed psychometric instruments and clinical interviews. In addition, the project has measured and analysed judicial stress, but did not explore the positive side of judicial wellbeing – flourishing, engagement, meaning and purpose. It is important to emphasise that a detailed understanding of judicial *stress*, as the present research project offers, is not a complete picture of the judicial *experience*. Further research could attempt to disaggregate basic psychological needs *frustration* from needs *satisfaction* (see Chen et al., 2015) and investigate how these relate to experiences at both ends of the judicial wellbeing continuum.

As concerns the constructs of Autonomy and Relatedness, our findings raise a number of questions. Perhaps most pressing, is the question of how the elements of magistrates' day-to-day work map onto their reduced satisfaction of these two basic psychological needs. Such an inquiry would inform appropriate and strategic intervention – both at the level of the court, and at the level of the individual judicial officer. It may be that some aspects of the work or working environment in the lower courts are particularly influential in reducing experiences of Autonomy and Relatedness. Research could elucidate which of these may be

mitigated through structural or cultural changes, and which must be managed through education and support. Finally, BPNT is principally concerned with the factors within the environment that promote or undermine needs satisfaction, but the other important element is what the individual judicial officer brings to the role. Future research could consider the individual characteristics, qualities and approaches – in particular stress appraisal and coping styles – that lead to better outcomes in judicial office, providing valuable data for judicial appointment and induction.

Conclusion

This article presented the findings of the second study within Australia's first empirical and psychologically grounded research project measuring judicial stress and wellbeing. The first study (Schrever et al., 2019) established that, compared to population norms, Australian judicial officers experience elevated stress. The present study set out to determine *which* judicial officers experience the most stress, and to begin to understand *why*. Based on the responses of 152 judicial officers from five Australian courts, to a survey comprising a number of validated psychometric instruments, we found that judicial officers in the summary jurisdictions (i.e. magistrates) experience the most stress, and this appears to be due to their fewer opportunities for experiences of Autonomy and Relatedness, as compared to those in the higher jurisdictions (i.e. judges). Across all jurisdictions, judicial stress was measurably higher when basic psychological needs satisfaction – especially Relatedness satisfaction – were lower. Although more research is needed to determine whether these findings hold for judicial officers across Australia and overseas, the study confirms the need for additional health and wellbeing supports for judicial officers in the lower courts, and provides an evidence-base for targeted intervention throughout the court system to manage judicial stress and support judicial wellbeing.

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Declaration of Conflicts of Interest

Carly Schrever has declared no conflicts of interest.

Carol Hulbert has declared no conflicts of interest.

Tania Sourdin has declared no conflicts of interest.

Ethical Approval

All procedures performed in the study were in accordance with the ethical standards of the Justice Human Research Ethics Committee and the University of Melbourne Human Research Ethics Committee, and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from the Heads of the participating jurisdictions and all individual participants included in the study.

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Tables

TABLE 1: Sample size and composition by Demographic Variables

Demographic variable	Sample size: *n* (%)	
	Survey	
	Part 1 (*n* = 152)	Part 2 (*n* = 125)
Age (years)		
<50	20 (13.2%)	15 (12.0%)
50-59	60 (39.5%)	48 (38.4%)
60-69	67 (44.1%)	59 (47.2%)
>70	5 (3.3%)	3 (2.4%)
Gender		
Female	66 (43.4%)	59 (47.2%)
Male	86 (56.6%)	66 (52.8%)
Seniority (years since appointment)		
<2	21 (13.8%)	13 (10.4%)
2-5	20 (13.2%)	17 (13.6%)
5-10	63 (41.4%)	53 (42.4%)
10-15	26 (17.1%)	22 (17.6%)
15-20	10 (6.6%)	9 (7.2%)
>20	12 (7.9%)	11 (8.8%)
Location		
Urban	102 (67.1%)	85 (68.0%)
Suburban	31 (20.4%)	23 (18.4%)
Rural	19 (12.5%)	17 (13.6%)
Main area of practice		
Crime or Coronial	89 (58.6%)	73 (58.4%)
Combination	35 (23.0%)	29 (23.2%)
Civil or Commercial	28 (18.4%)	23 (18.4%)
Jurisdiction		
Summary	84 (55.3%)	68 (54.4%)
Higher	68 (44.7%)	57 (45.6.%)
Total	**152 (100%)**	**125 (82.2%)**

TABLE 2: Means, standard deviations, sample sizes, and score ranges for all measurement variables included in the Study.

Variables	*M*	*SD*	*n*	Possible range	Observed range
Basic Psychological Needs Satisfaction (BPNSW)					
Autonomy	4.48	1.12	152	1-7	2.13-7
Competence	5.82	.83	151	1-7	2.38-7
Relatedness	5.63	.97	151	1-7	2.25-7
Psychological distress (K10)	16.64	4.87	152	10-50	10-31
Mental Ill-Health (DASS-21)					
Depression	2.22	2.81	152	0-21	0-18
Anxiety	1.50	2.23	152	0-21	0-13
Stress	5.03	3.66	152	0-21	0-20
Burnout (MBI-GS)					
Exhaustion	2.27	1.40	124	0-6	0-5.40
Cynicism	1.61	1.40	125	0-6	0-6.00
Professional Efficacy	5.04	.87	125	0-6	1.17-5.04
Secondary Traumatic Stress (STSS)					
Intrusion	9.15	3.10	123	5-25	5-18
Avoidance	12.52	4.43	124	7-35	7-27
Arousal	10.20	3.48	125	5-25	5-21
Total STSS	31.78	10.04	122	17-85	17-58
Alcohol Use and Dependence (AUDIT)	6.12	4.11	121	0-30	0-23

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TABLE 3: Intercorrelations (Pearson's *r*) among Stress Variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Psychological Distress (K10)	--										
2. Depression (DASS-21)	.68*** *(152)*	--									
3. Anxiety (DASS-21)	.61*** *(152)*	.55*** *(152)*	--								
4. Stress (DASS-21)	.72*** *(152)*	.66*** *(152)*	.57*** *(152)*	--							
5. Burnout Exhaustion (MBI-GS)	.60*** *(124)*	.48*** *(124)*	.33*** *(124)*	.59*** *(124)*	--						
6. Burnout Cynicism (MBI-GS)	.45*** *(125)*	.39*** *(125)*	.33*** *(125)*	.35*** *(125)*	.49*** *(124)*	--					
7. Burnout Professional Efficacy (MBI-GS)♣	-.29** *(125)*	-.19* *(125)*	-.21*♦ *(125)*	-.23* *(125)*	-.22* *(124)*	-.47*** *(125)*	--				
8. Intrusion (STSS)	.51*** *(123)*	.32*** *(123)*	.37*** *(123)*	.45*** *(123)*	.42*** *(122)*	.34*** *(123)*	-.23** *(123)*	--			
9. Avoidance (STSS)	.55*** *(124)*	.49*** *(124)*	.38*** *(124)*	.51*** *(124)*	.50*** (123)	.46*** *(124)*	-.40*** *(124)*	.72*** *(122)*	--		
10. Arousal (STSS)	.58*** *(125)*	.53*** *(125)*	.49*** *(125)*	.63*** *(125)*	.54*** *(124)*	.43*** *(125)*	-.33*** *(125)*	.69*** *(123)*	.79*** *(124)*	--	
11. Total STS (STSS)	.60*** *(122)*	.50*** *(122)*	.46*** *(122)*	.59*** *(122)*	.54*** *(121)*	.45*** *(122)*	-.36*** *(122)*	.87*** *(122)*	.94*** *(122)*	.91*** *(122)*	--
12. Alcohol Use and Dependence (AUDIT)	-.06 *(121)*	.001 *(121)*	.06 *(121)*	-.07 *(121)*	-.16♠ *(120)*	-.01 *(121)*	-.06 *(121)*	-.19*♦ *(119)*	-.09 *(120)*	-.05 *(121)*	-.11 *(118)*

Note. The number of cases in each correlation is in parentheses

♣ Burnout Professional Efficacy is interpreted in the reverse direction to the other stress measures, in that *higher* Professional Efficacy scores are associated with *lower* burnout, hence the negative correlations with other stress measures reported here are expected.

*p<.05. **p<.01. ***p<.001. ♦p>.05 in non-parametric analysis. ♠p<.05 in non-parametric analysis.

TABLE 4: Correlations (Pearson's *r*) between Basic Psychological Needs Satisfaction Variables and Stress Variables

Stress Variables	Basic Psychological Needs Satisfaction Variables		
	Autonomy	Competence	Relatedness
Psychological Distress (K10)	-.38*** *(152)*	-.40** *(151)*	-.45*** *(152)*
Depression (DASS-21)	-.31*** *(152)*	-.22** *(151)*	-.33*** *(152)*
Anxiety (DASS-21)	-.19* *(152)*	-.24** *(151)*	-.23** *(152)*
Stress (DASS-21)	-.35*** *(152)*	-.29*** *(151)*	-.37*** *(152)*
Burnout Exhaustion (MBI-GS)	-.49*** *(124)*	-.23** *(123)*	-.33*** *(124)*
Burnout Cynicism (MBI-GS)	-.53*** *(125)*	-.21* *(124)*	-.55*** *(125)*
Burnout Professional Efficacy (MBI-GS) ♣	.30** *(154)*	.32*** *(124)*	.42*** *(125)*
Intrusion (STSS)	-.26** *(123)*	-.28** *(122)*	-.24** *(123)*
Avoidance (STSS)	-.30** *(124)*	-.29** *(123)*	-.37*** *(124)*
Arousal (STSS)	-.29** *(125)*	-.25** *(124)*	-.40*** *(125)*
Total STS (STSS)	-.30** *(125)*	-.32*** *(124)*	-.37*** *(125)*
Alcohol Use and Dependence (AUDIT)	.10 *(121)*	-.06 *(120)*	.01 *(121)*

Note. The number of cases in each correlation is in parentheses
♣ Burnout Professional Efficacy is interpreted in the reverse direction to the other stress measures, in that *higher* Professional Efficacy scores are associated with *lower* burnout, hence the positive correlations with the basic psychological needs variables reported here are expected.
*p<.05. **p<.01. ***p<.001.

TABLE 5: Summary of multiple regression analyses for basic psychological needs satisfaction variables predicting judicial officers' stress scores

Basic Psychological Needs Satisfaction Variables	Stress Variables										
	1	2	3	4	5	6	7	8	9	10	11
Autonomy											
B	-.88	-.49	-.17	-.70	-.53	-.43	.09	-.46	-.57	-.33	-1.36
SE B	.33	.22	.18	.28	.11	.10	.07	.27	.37	.29	.85
β	-.20*	-.20*	-.08	-.22*	-.44***	-.35***	.12	-.17	-.15	-.11	-.15
Competence											
B	-1.30	-.21	-.42	-.59	-.13	.11	.16	-.74	-.68	-.38	-2.05
SE B	.47	.29	.24	.37	.15	.14	.10	.37	.51	.39	1.15
β	-.20**	-.06	-.16	-.14	-.08	.06	.15	-.20*	-.13	-.09	-.17
Relatedness											
B	-1.23	-.60	-.28	-.76	-.10	-.56	.26	-.23	-1.12	-1.01	-2.22
SE B	.43	.27	.22	.34	.14	.12	.09	.34	.47	.35	1.06
β	-.25**	-.21*	-.12	-.20	-.07	-.40***	.29**	-.07	-.25*	-.30*	-.22*
R^2	.28	.14	.08	.19	.26	.39	.21	.12	.17	.17	.18
F	18.84***	8.11***	4.35**	11.47***	14.06***	25.97***	10.36***	5.14**	8.23***	8.13***	8.43***
Cohen's f^2	.45	.16	.09	.21	.35	.64	.27	.14	.20	.20	.22
n	151	151	151	151	123	124	124	122	123	124	121

Note: Stress Variables are referred to in the table by the following numbers: 1 = Psychological Distress (K10); 2 = Depression (DASS-21); 3 = Anxiety (DASS-21); 4 = Stress (DASS-21); 5 = Burnout Exhaustion (MBI-GS); 6 = Burnout Cynicism (MBI-GS); 7 = Burnout Professional Efficacy (MBI-GS); 8 = Intrusion (STSS); 9 = Avoidance (STSS); 10 = Arousal (STSS); 11 = Total STS (STSS).
*p<.05. **p<.01. ***p<.001.

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TABLE 6: Differences between Judges' and Magistrates' mean scores on Basic Psychological Needs Satisfaction and Stress Variables

Variables	Judges M (*SD*)	Magistrates M (*SD*)	*t*	Effect size (Cohen's *d*)
Basic Psychological Needs Satisfaction[1]				
Autonomy	4.75 (*1.16*)	4.26 (*1.04*)	2.72**	.44
Competence	5.89 (*.86*)	5.76 (*.80*)	1.01	-
Relatedness	5.81 (*.94*)	5.49 (*.99*)	1.99*	.33
Stress				
Psychological Distress (K10)[1]	15.28 (*4.14*)	17.67 (*5.16*)	-3.17**	.51
Mental Ill-Health (DASS-21)[1]				
Depression	1.78 (*2.18*)	2.57 (*3.19*)	-1.74	-
Anxiety	1.03 (*1.78*)	1.88 (*2.52*)	-2.44*	.39
Stress	4.38 (*3.02*)	5.56 (*4.03*)	-1.99*♦	.33
Burnout (MBI-GS)[2]				
Exhaustion	1.89 (*1.15*)	2.60 (*1.50*)	-3.05**	.53
Cynicism	1.45 (*1.34*)	1.75 (*1.45*)	.08	-
Professional Efficacy	5.05 (*.92*)	5.04 (*.84*)	-1.21	-
Secondary Traumatic Stress (STSS)[2]				
Intrusion	8.73 (*3.41*)	9.50 (*2.80*)	-1.38	-
Avoidance	11.93 (*4.32*)	13.03 (*4.50*)	-1.38	-
Arousal	9.56 (*3.19*)	10.74 (*3.65*)	-1.90	-
Overall	29.93 (*9.84*)	33.30 (*10.02*)	-1.86	-
Alcohol Use (AUDIT)[3]	6.79 (*4.23*)	5.54 (*3.76*)	1.86	-

[1] *n* (Judges) = 68, *n* (Magistrates) = 84
[2] *n* (Judges) = 57, *n* (Magistrates) = 68
[3] *n* (Judges) = 56, *n* (Magistrates) = 65

*$p<.05$. **$p<.01$.
♦$p>.05$ in non-parametric analysis (Mann-Whitney U Test)

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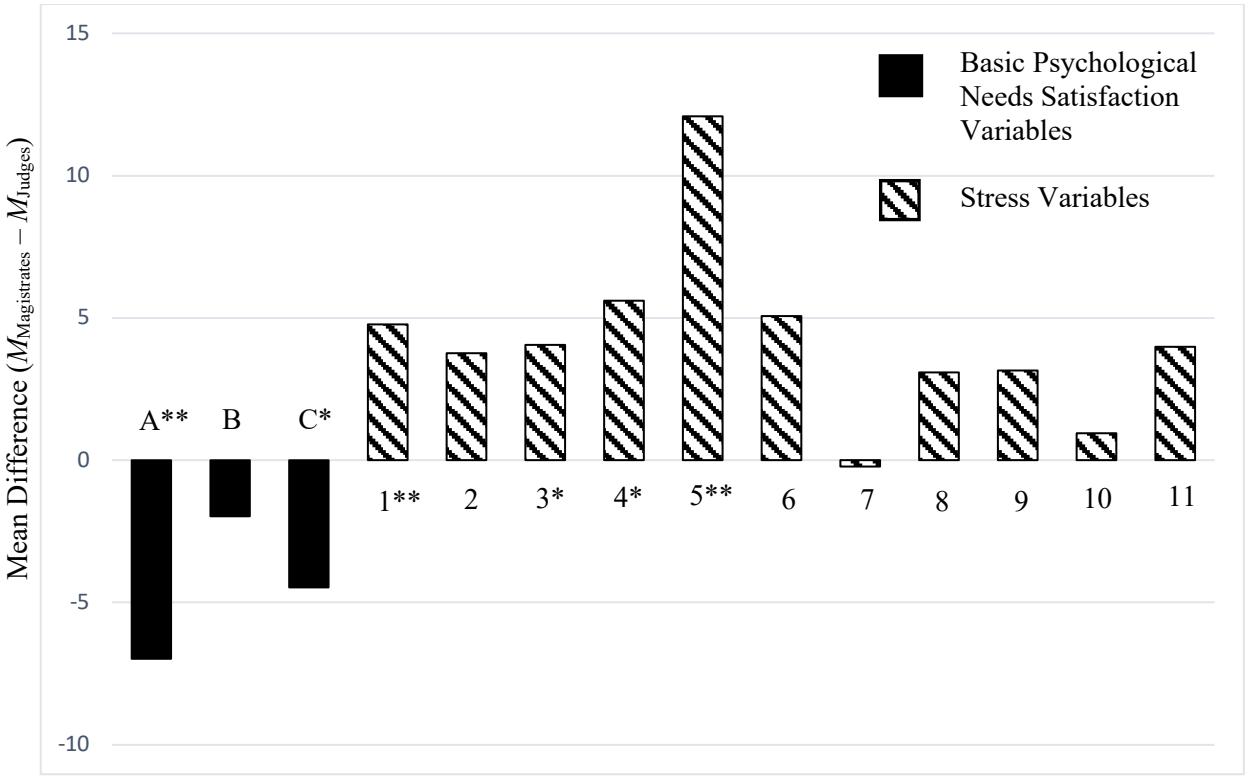

Figure 1: Differences in magistrates' and judges' mean scores on the Basic Psychological Needs Satisfaction Variables and the Stress Variables (Mean Difference = $M_{Magistrates} - M_{Judges}$). Scores were standardised to a common scale of 0-100 to allow for graphical comparison. Magistrates' mean scores were lower than Judges' mean scores on all Basic Psychological Needs Satisfaction Variables (A-C), and higher on all Stress Variables (1-11), except Burnout Professional Efficacy (7) which is interpreted in the reverse direction. The Basic Psychological Needs Satisfaction Variables are referred to by the following letters: A = Autonomy; B = Competence; C = Relatedness. The Stress Variables are referred to by the following numbers: 1 = Psychological Distress (K10); 2 = Depression (DASS-21); 3 = Anxiety (DASS-21); 4 = Stress (DASS-21); 5 = Burnout Exhaustion (MBI-GS); 6 = Burnout Cynicism (MBI-GS); 7 = Burnout Professional Efficacy (MBI-GS); 8 = Intrusion (STSS); 9 = Avoidance (STSS); 10 = Arousal (STSS); 11 = Total Secondary Traumatic Stress (STSS).

*p<.05. **p<.01.

TABLE 7: Summary of multiple regression analyses for jurisdiction and basic psychological needs satisfaction predicting stress

Predictor Variables	Stress Variables			
	Psychological Distress (K10)	Anxiety (DASS-21)	Stress (DASS-21)	Exhaustion (MBI)
Jurisdiction				
B	1.47	-.71	.48	.37
SE B	.69	.37	.56	.23
β	.15*	.16	.07	.13
Autonomy				
B	-.75	-.09	-.68	-.50
SE B	.35	.18	.28	.11
β	-.17*	-.05	-.21*	-.41***
Competence				
B	-1.31	-.45	-.58	-.13
SE B	.46	.24	.37	.15
β	-.22**	-.16	-.13	-.07
Relatedness				
B	-1.19	-.25	-.76	-.09
SE B	.43	.22	.34	.14
β	-.24**	-.11	-20*	-.07
R^2	.30	.10	.20	.28
F	15.52***	4.17**	9.04***	11.38***
Cohen's f^2	.43	.11	.25	.39
n	151	151	151	123

Note. The model was regressed only on those four Stress Variables for which *t* tests had shown a significant effect of jurisdiction, i.e. Psychological Distress (K10), Anxiety (DASS-21), Stress (DASS-21), and Burnout Exhaustion (MBI-GS).

*p<.05. **p<.01. ***p<.001