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**THE STRESS SCALE FOR FORENSIC PROFESSIONALS
(ESPF): DEVELOPMENT AND VALIDATION**

Dissertação no âmbito do Mestrado Integrado em Psicologia, área de especialização Psicologia Clínica e da Saúde, subárea de especialização Psicologia Forense, orientada pelo Professor Doutor Mário Manuel Rodrigues Simões e pelo Mestre Mauro Filipe Dias da Silva Paulino e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra.

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A Escala de Stress para Profissionais Forenses (ESPF): Desenvolvimento e Validação

Resumo: A presente dissertação tem por objetivo desenvolver e validar a Escala de *Stress* para Profissionais Forenses (ESPF), um instrumento especialmente concebido para a avaliação de níveis de *stress* em profissionais do Sistema de Justiça, tais como advogados, procuradores do Ministério Público, juízes, entre outros. A construção deste instrumento visa preencher a lacuna existente no que concerne à existência de instrumentos de avaliação psicológica focados numa amostra tão específica como é a de profissionais forenses. No sentido de testar a validade de construto do instrumento, foi realizada uma análise de componentes principais, uma análise paralela e uma análise dos respetivos *scree plot*, a partir do qual se extraiu quatro fatores que denominámos de *Vulnerabilidade ao Stress*, *Carga de Trabalho*, *Reconhecimento e Suporte Social* e *Uso de Substâncias*. A validade convergente foi testada através da análise do coeficiente de correlação de Pearson entre a pontuação obtida por uma amostra de profissionais forenses na ESPF e a pontuação obtida em instrumentos de avaliação de construtos análogos (i.e., *stress* e *burnout*), nomeadamente o *Oldenburg Burnout Inventory* (OLBI), bem como as subescalas de *Stress* e *Ansiedade* do Inventário de Avaliação da Personalidade (*Personality Assessment Inventory* – PAI). A validade divergente, por seu turno, foi testada através da avaliação das correlações obtidas entre pontuações da ESPF e pontuações obtidas em escalas de avaliação de construtos independentes e não-relacionados com o *stress*, nomeadamente as subescalas de *Traços Antissociais* e *Amabilidade* do PAI. Os resultados obtidos em ambos processos suportam a validade convergente e divergente da escala. Adicionalmente, foi testada a fiabilidade da escala através do alfa de Cronbach, que apontou para valores de consistência interna muito bons na escala completa e aceitáveis em cada uma das subescalas. O último processo de testagem da validade da escala passou pela análise da estatística descritiva dos resultados obtidos pela nossa amostra de profissionais forenses, nomeadamente através da comparação entre grupos de diferentes profissões forenses, géneros, idades e anos de experiência. Os resultados obtidos apontam para a validade do instrumento, mas estudos futuros poderão ser úteis no sentido de continuar o processo de validação e no sentido de fortalecer o instrumento no que concerne à sua estrutura interna e consistência.

Palavras-chave: *stress* ocupacional, *stress* judicial, profissionais forenses, avaliação psicológica, psicometria.

The Stress Scale for Forensic Professionals (ESPF): Development and Validation

Abstract: The present dissertation aims to develop and validate the Stress Scale for Forensic Professionals (ESPF), a tool specially designed to assess stress levels in professionals related to the Justice System, as is the case with lawyers, attorneys from the Portuguese Public Prosecution Office, judges, among others. The development of this assessment tool seeks to fill the existing gap in psychological assessment tools focused on such specific samples as forensic professionals. In an effort to test the construct validity of the scale, we proceeded to execute a Principal Components analysis, a Parallel Analysis and an analysis of the respective scree plot, which lead us to extract four factors which we named *Vulnerability to Stress*, *Workload*, *Social Support and Recognition*, and *Substance Use*. Convergent validity was tested through an analysis of Pearson's correlations between ESPF scores, and scores obtained in assessment tools for similar constructs (i.e., stress and burnout), as was the case with the Oldenburg Burnout Inventory (OLBI), as well as the *Stress* and *Anxiety* subscales of the Personality Assessment Inventory (PAI). Divergent validity, on the other hand, was tested thanks to an analysis of the correlations between ESPF scores and scores obtained in tools which propose to measure independent, non-related constructs, such as the *Antisocial Features* and *Warmth* subscales of PAI. The results obtained in both processes support the convergent and divergent validity of our scale. Additionally, we analysed the reliability of our scale through an analysis of Cronbach's alfa, which showed excellent internal consistency values in the total scale, as well as acceptable values in each of the subscales. The last stage of ESPF's validity process regarded an analysis of the descriptive statistics of the scores obtained by our forensic professionals' sample, particularly through an analysis of differences in scores regarding divergent forensic occupations, genders, age, and years of experience. All results point to the validity of our assessment tool, but future studies may be useful to continue this validation process and to strengthen our instrument's internal structure and consistency.

Key Words: occupational stress, judicial stress, forensic profession, psychological assessment, psychometrics.

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“Às vezes é no meio de tanta gente, que descubro afinal aquilo que sou: sou um grito ou sou uma pedra de um lugar onde não estou”

Index

Introduction	1
I – Conceptual Framework	1
Occupational stress.....	2
Burnout.....	3
Link between stress, occupational stress, and burnout	5
Forensic professions as high-risk occupations to the development of occupational stress, burnout, and psychopathology	5
Studies regarding psychopathology in the legal professions.....	6
Limitations of existing studies	7
II – Objectives	7
III – Methods	8
The Development and validation of the Stress Scale for Forensic Professionals (ESPF).....	8
Sample and procedure.....	9
Sociodemographic questionnaire.....	9
Oldenburg Burnout Inventory	10
Personality Assessment Inventory	10
IV – Results	10
Construct validity	11
Convergent validity.....	16
Divergent validity	16
Reliability	17
Descriptive statistics.....	18
Differences in ESPF scores considering the type of forensic profession.....	18
Differences in ESPF scores based on gender	19
Differences in ESPF scores based on age	20
Differences in ESPF scores based on work experience	22
V – Discussion	23
VI – Conclusions	27
References	30
Appendices	40

Introduction

The present master's dissertation will focus on the development and validation of a stress scale for individuals in the legal profession, such as lawyers, attorneys, and judges. Therefore, although the term *forensic* or *legal profession* may be applicable to several professions that work for the Justice System, we use it, in this dissertation, to refer to the three aforementioned occupations.

The first part of this dissertation will be theoretical and will seek to establish a framework of the stress, occupational stress, and burnout concepts. Consequently, we will first aim to define the concepts of stress, occupational stress, and burnout, proceeding to differentiate these three constructs. Secondly, we will seek to, succinctly, define the existing studies regarding these variables, applied to occupations related to the Justice System, as well as determine their limitations.

The empirical part of this dissertation is composed of three points. First, we will delimit the objectives and methods of the current study, which include the development and validation of a new scale for the assessment of stress in legal professionals, the Stress Scale for Forensic Professionals (*Escala de Stress para Profissionais Forenses*; ESPF). Subsequently, we will analyze differences in scale scores concerning variables such as type of forensic profession, gender, age, and work experience. Lastly, we will seek to present our conclusions, as well as determine the implications the development of such a scale may have in future research in this area, and proposals for future studies, considering the current limitations.

Apart from a reference list, we will also include 12 appendices (e.g., "Psychometric characteristics of ESPF (31 items)").

I – Conceptual Framework

In this part of the dissertation, we will proceed to explore the concepts of stress, occupational stress, and burnout, as variables intrinsically related to each other, and which frequently influence one another. Additionally, we will explore the existing literature regarding the existence of psychopathology (e.g., stress, occupational stress, and burnout) in occupations related to the Justice System, analyzing the existing studies which propose to assess these variables in this specific population. The lack of existing tools for the assessment of stress, occupational stress, and burnout was made evident in our research, strengthening our belief that the development of a new, independent scale is essential to a better understanding of the psychological wellbeing or distress of professionals such as lawyers and attorneys.

Stress

Throughout the years, the stress concept has been the basis of great discussion amongst scholars, who have struggled to find a consensus regarding its definition.

We can consider stress to be a process in which events or external stimuli, called stressors, are perceived as a threat to the well-being of an organism (Cox, 1985). On the other hand, the stress response, composed of all the symptoms we usually associate with stress (e.g., fear, anxiety, and anger), is just a part of the stress process (Baum et al., 1981; Lazarus & Cohen, 1977). Lazarus considered that stress is not a variable but, instead, a construct made of different variables and processes; it is the result of the relationship between an individual and their surroundings, which they perceive as being demanding and whose demands surpass the resources available to deal with them, threatening the individual's psychological well-being (Lazarus & Cohen, 1977; Lazarus & Folkman, 1984).

The stress response is determined by the way an individual perceives a threat. If, after assessing an event, it is determined that there is a higher probability of that event exceeding an individual's internal resources for managing it, there is a higher chance of that event being considered stressful (Baum et al., 1978; Lazarus et al., 1952). This is the reason why a single event may have a different impact on different people – the cognitive assessment of a situation will mediate the stress response it prompts.

Regarding the most common stress responses, these include, among others, a decrease in the cognitive function and ability to manage problems, a decrease in the ability to manage frustration, aggressiveness, and dejection, a decrease of empathy, an increase of social isolation, learned helplessness, maladaptive coping responses, somatic complications, anxiety, fear, guilt, anger, and depression (Baum et al., 1978; Lazarus & Cohen, 1977).

Occupational stress

Many work situations or conditions are considered stressful by workers, and several occupations involve environmental and organizational factors that can influence the perceived stress levels of a professional. Occupational stress may be defined as a complex psychological state that results from the assessment an individual makes of the demands of a certain job, being that these demands exceed the ability of an individual to manage them (LaRocco et al., 1980). This discrepancy between an individual's cognitive and emotional resources and the demands of their work environment will cause psychological, physiological, and behavioral tensions (Hart & Cooper, 2001; Hurrell et al., 1998).

Concerning the factors responsible for higher levels of occupational stress, researchers have referred to stress factors intrinsic to a certain job (e.g., physical conditions of the workplace, work overload or underload, lack of resources, long hours, and job risks) (Mazzola et al., 2011; Spector, 2002), factors related to career progression (i.e., fear of losing a job, worries related

to new responsibilities in the workplace, frustration of not being promoted, etc.) (Mazzola et al., 2011; Rout & Rout, 2002), factors associated with work roles (i.e., role conflict and role ambiguity) (Beehr, 1995; Rout & Rout, 2002), factors linked with relationships at work (e.g., conflicts among coworkers), factors related to organizational structures (e.g., inability to participate in decision making processes) (Hart & Cooper, 2001; Spector, 2002), and, finally, factors associated with work-home management (e.g., stress at home may negatively influence people's stress levels at work and job stress may affect an individual's personal and family life) (Hart & Cooper, 2001; Rout & Rout, 2002). Individual characteristics (e.g., gender, age, work experience, personality, attitude, self-esteem, and personal motivations) may also mediate the experience of occupational stress (Hart & Cooper, 2001). Nevertheless, we can ascertain that there are generic stressors, shared by most professions (e.g., workload and extensive schedules), and stressors which are specific to each occupation (Mazzola et al., 2011).

Regarding the physical consequences of occupational stress, several authors identify issues such as gastrointestinal problems and weight fluctuations (e.g., Rout & Rout, 2002), chronic conditions (e.g., Hurrell & Murphy, 1996), headaches and musculoskeletal pain (e.g., Hespanhol, 2005), high blood pressure (e.g., Spector, 2002), sexual impotence (e.g., Hespanhol, 2005), and cardiovascular complications (e.g., Spector, 2002). Psychological outcomes of stress typically involve symptoms of anxiety (e.g., Hespanhol, 2005), depression (e.g., Sapolsky, 2004), irritability (e.g., Beehr, 1995), anger (e.g., Motowidlo et al., 1986), frustration (e.g., Motowidlo et al., 1986), insomnia (e.g., Hespanhol, 2005), fatigue (e.g., Ivancevich & Matteson, 1980), and suicidal ideation (e.g., Ivancevich & Matteson, 1980). Other occupational stress outcomes may include cognitive function problems [e.g., impaired decision-making ability, attentional problems, and mental blocks (e.g., Ivancevich & Matteson, 1980)], maladaptive coping strategies and behavioral problems, namely tobacco, alcohol, and drug use (e.g., Rout & Rout, 2002), over and under-eating (e.g., Beehr, 1995), as well as feelings of dissatisfaction about the job, absenteeism (e.g., Spector, 2002), and, as we will explore in the following section, burnout.

Burnout

Burnout can be defined as a negative psychological experience responsible for feelings, attitudes, and expectations regarding a profession which incite problems, discomfort and disfunction in a person's life (Maslach et al., 2008; Maslach & Leiter, 2017). It is a negative and persistent mental state related to a job, caused by a prolonged and chronic exposure to occupational stress situations (Maslach & Leiter, 2016). Currently, despite a lack of consensus regarding an exact definition of burnout, there is a general understanding that this construct is composed of three dimensions, namely exhaustion, cynicism/detachment, and inefficacy (Ahola et al., 2006; Maslach et al., 2008; Maslach & Leiter, 2017).

Maslach reasoned that burnout evolves in different phases. Firstly, job

demands have an impact on the emotional resources of an individual, leading to feelings of exhaustion. To protect themselves from this resource depletion, the individual will try to distance themselves from their occupation, which culminates in the development of negative attitudes towards it and the people involved in it, leading to a feeling of detachment or cynicism. Finally, if these conditions are maintained, the worker will start to question their competence and job efficacy and start to feel inadequate and ineffective (Jackson & Maslach, 1982; Maslach & Leiter, 2017).

Regarding the emergence of burnout, we can consider situational and individual factors. Amongst situational predictors, it is possible to highlight job characteristics (e.g., work overload, role demands, role conflict and ambiguity, deadlines, lack of resources, lack of social support, lack of control in the decision-making process, lack of feedback and absence of autonomy), as well as occupational characteristics (e.g., emotional demands associated with dealing with highly emotional customers) (Maslach & Leiter, 2017). On the other hand, individual factors, (e.g., age, marital status, level of education and years of experience) are also considered to be mediators in the development of burnout (Leiter et al., 2015). This means that younger, single workers, with higher education and less years of experience in a certain profession, will have higher chances of developing burnout. Additionally, subjects with an external locus of control, low self-esteem, and an avoidant coping style [in which people try to deny, minimize, or avoid dealing with something perceived as stressful (Carver et al., 1989)] are also more prone to experience burnout, and the same can be said for individuals with unrealistic expectations regarding the work they will carry out (e.g., Maslach & Leiter, 2017).

Burnout is related to negative consequences on the performance of a professional, particularly feelings of dissatisfaction and lack of commitment, conflicts with colleagues, absenteeism, and turnover (Maslach & Leiter, 2016, 2017). Additionally, it is frequently associated with negative outcomes on their physical [e.g., headaches (Maslach & Leiter, 2017), muscular tension and musculoskeletal pain (Maslach & Leiter, 2017; Melamed et al., 2006), hypertension and cardiovascular disease (Maslach & Leiter, 2017; Toker et al., 2012), type 2 diabetes (Melamed et al., 2006), sleep problems (Maslach & Leiter, 2017)] and psychological health [e.g., anxiety, depression, anger, low self-esteem (Maslach & Leiter, 2017)], as well as behavioral changes [e.g., risk practices such as smoking, prescription drug usage, and drug and alcohol abuse (Jackson & Maslach, 1982)].

Occasionally, burnout can be considered “contagious”, in the sense that frequent conflicts between colleagues may have a negative impact in them, which, in turn, may lead to the development of this condition in different people of the same workplace (González-Morales et al., 2012). Worker’s personal and family lives may also suffer due to burnout (Burke & Greenglass, 2001; Maslach & Leiter, 2017).

Link between stress, occupational stress, and burnout

After reflecting on the concepts of stress, occupational stress, and burnout, we can now conclude that stress concerns the process which stems from the relationship between an individual and an environment they perceive as demanding or that exceeds their ability to deal with, threatening their psychological wellbeing (Lazarus & Folkman, 1984). Conversely, occupational stress is a response to the demands and pressures of a profession, perceived as too challenging when compared to the knowledge and capabilities of an individual, threatening their ability to cope (World Health Organization, 2020). Hence, occupational stress is a specific form of stress, associated with specific stressors of an occupation.

Burnout, contrastingly, is a syndrome composed of feelings of emotional exhaustion, detachment, and inefficacy in workers, which can be developed as a response to feelings of impotence and failure in the workplace (Maslach & Jackson, 1984; Pines & Keinan, 2005). Burnout is a possible consequence to the persistent exposure to occupational stress, being that it is frequently considered to be a subcategory of stress (Cooper et al., 2001; Hobfoll & Shirom, 2000; Pines & Keinan, 2005). Many of the physical symptoms of burnout can be predicted by its exhaustion dimension, which is considered a close component to the stress concept; this explains why many of the burnout symptoms are like stress or occupational stress symptoms (Maslach, 2001; Maslach & Leiter, 2016). However, the difference between these three concepts stems from the premise that stress is a response to a critical episode, occupational stress is a response to critical episodes *and* specific characteristics of a job, and burnout is a syndrome developed by an agglomeration of unresolved occupational stress throughout time, implying a chronic psychological erosion (Maslach & Leiter, 2016). So, even if there are some who consider burnout to be a subcategory of stress, it is evident that these are different concepts, with diverse characteristics.

Forensic professions as high-risk occupations to the development of occupational stress, burnout, and psychopathology

The existing literature allows us to understand that certain professions are more likely to lead to the development of psychopathology than others, and that, indeed, the work done by legal professions may beget the emergence of occupational stress, burnout, and depression symptoms, due to the content and overload of the work they do (Eaton et al., 1990).

Firstly, we can consider that, overall, the Justice System is an instigator of cynicism, suspicion, hostility, and aggressiveness, variables which can increase stress among law workers (Benjamin et al., 1986). Consequently, research done in the last thirty years has shown that lawyers have higher levels of depression (Benjamin et al., 1990; Eaton et al., 1990; Kelk et al., 2009), occupational stress (Tsai et al., 2009; Tsai & Chan, 2009), burnout (Tsai et al., 2009; Tsai & Chan, 2009), and psychological distress (Beck et al., 1995; Kelk et al., 2009), when compared to the general

population.

As for the factors responsible for this type of symptoms, we can identify work overload (i.e., high number of caseloads that are required to be dealt with quickly), deadlines, social isolation, lack of privacy, lack of information and resources for legal decision-making, and the participation in controversial judicial cases, crimes against children, sexual crimes and other violent crimes (Ferreira et al., 2014; Fonseca, 2017; Levin et al., 2011; Levin & Greisberg, 2003; Lipp & Tanganelli, 2002). The need to maintain confidentiality, worries about personal safety and the participation in unpredictable, long, and frequently interrupted trials may also facilitate the development of stress and psychological distress in judges, attorneys (Benjamin et al., 1986), and, eventually, lawyers and other types of forensic professionals. Additionally, conflicts with colleagues or clients, extensive schedules (which affect the personal and family lives of these professionals), excessive responsibilities and sparse rewards, as well as feelings of inequality and lack of control when it comes to the work done may also lead to the development of occupational stress and burnout symptoms in professions related to the Justice System (Ferreira et al., 2014; Fonseca, 2017; Lipp & Tanganelli, 2002).

Studies regarding psychopathology in the legal professions

The last forty years have shown an increase in studies dedicated to the psychological assessment of people in the justice profession, and most of these studies have focused on the analysis of variables such as stress and anxiety (e.g., Kelk et al., 2009; Lipp & Tanganelli, 2002; Tsai & Chan, 2009; Tsai et al., 2009), burnout (e.g., Jackson, 1987; Levin et al., 2011; Levin et al., 2021; Tsai & Chan, 2009; Tsai et al., 2009), depression (e.g., Benjamin et al., 1990; Hagan & Kay, 2007; Kelk et al., 2009; Levin et al., 2011), and vicarious trauma [i.e., experience of intrusive thoughts, avoidance, withdrawal, and symptoms of tension related to the exposure to traumatic material in the workplace (Figley, 1996)] (e.g., Jaffe et al., 2003; Levin & Greisberg, 2003; Levin et al., 2011; Levin et al., 2021; Vrkleviski & Franklin, 2008). Research addressing the prevalence of other variables, such as substance abuse (Beck et al., 1995; Benjamin et al., 1990; Jackson, 1986; Levin et al., 2011; Tsai & Chan, 2009; Tsai et al., 2009; Krill et al., 2016) also exist, even if in a lesser scale. In Portugal, however, the number of studies regarding the assessment of these variables related to the psychological functioning of workers such as judges, lawyers, and attorneys (e.g., Ferreira et al., 2014; Santos, 2012) is sparse, notwithstanding the significant impact of their actions and decisions in other people's lives.

The existing international studies available, referenced above, are predominantly theoretical, and tend to focus solely on one type of sample – either judges (e.g., Chamberlain & Miller, 2009; Jaffe et al., 2003) or lawyers (e.g., Azeem et al., 2020; Beck et al., 1995; Benjamin et al., 1990; Hagan & Kay, 2007; Jackson et al., 1987; Sharma et al., 2010; Tsai et al., 2009) – and few are those who combine, in a single study, multiple samples of forensic

professionals (e.g., Ciocoiu et al., 2010; Tsai & Chan, 2009).

Limitations of existing studies

Some limitations referenced in international studies have referred to the limited size of their samples, the lack of randomization and representation of these samples in regard to the interest populations (i.e., judges, attorneys, and lawyers) (Jaffe et al., 2003; Krill et al., 2016; Vrklevski & Franklin, 2008), the use of non-standardized or more complete assessment tools for symptoms (e.g., judicial stress or occupational stress) or other variables of interest (e.g., area of expertise), and the reluctance felt by participants in admitting psychological symptoms, such as anxiety and burnout (Vrklevski & Franklin, 2008).

Overall, the existing studies unveil the scarcity and need of assessment and research tools in current literature, particularly tools focused on the evaluation of psychological symptoms such as stress and burnout in workers with unique characteristics, as is the case with forensic professionals, whose job impacts innumerable people's lives.

II – Objectives

The current study's main objective is the development and validation of the Stress Scale for Forensic Professionals (*Escala de Stress para Profissionais Forenses*; ESPF). This stress scale aims to identify signs of psychological strain and stress in people working for the Justice System and to provide a tool for the identification of the most common sources of stress in these occupations, as well as potential harmful coping strategies adopted by forensic workers to manage perceived stress.

We hypothesize that this scale may be used as an indicator of potential psychological distress in people in forensic professions, whilst also aiding in the prevention of burnout or other forms of psychological maladies associated with occupational stress. Additionally, we propose to fill in the gap regarding the lack of existing tools for the assessment of these symptoms in forensic professionals.

Accordingly, we aim to test if this newly developed scale is efficient in the assessment of stress-related symptoms and in the identification of the primary sources of stress in forensic professions. Although this scale was originally developed with lawyers, attorneys, and judges in mind, we ultimately consider that it can also be applied to other justice-related occupations, such as officers of justice, solicitors, and experts working under the Portuguese National Institute of Legal Medicine and Forensic Sciences (*Instituto Nacional de Medicina Legal e Ciências Forenses*; INMLCF), among others.

III – Methods

The Development and validation of the Stress Scale for Forensic Professionals (ESPF)

Considering that the few existing instruments for the psychological assessment of forensic professionals (e.g., Azeem et al., 2020; Lipp & Tanganelli, 2002; Qureshi, 2020; Verma, 2008) were developed with a single sample in mind (in the sense that they are solely applicable to judges, lawyers or attorneys), and taking into account that there is frequently an issue with social desirability involved in them, we elected to develop a new assessment tool for stress, applicable to every occupation related to the Justice System and capable of analyzing the most common sources of stress in these types of professions, whilst maintaining the validity of the answers given.

The Stress Scale for Forensic Professionals (*Escala de Stress para Profissionais Forenses*; ESPF) was developed from a process composed of several stages: a) literature review; b) review of existing stress and judicial stress assessment tools; c) construction of a preliminary scale for the assessment of the most common sources of stress in forensic occupations, such as in the work done by judges, attorneys and lawyers; d) preliminary scale review done by forensic professionals and other experts; e) pilot version. Below we will explore each of these stages:

- a) Firstly, a theoretical literature review concerning the study of occupational stress and burnout in the legal profession was conducted, considering the research done by Chamberlain & Miller (2009), Elwork & Benjamin (1995), Lipp & Tanganelli (2002), Gil-Monte et al. (2016), Gomme & Hall (1995), Miller et al. (2018), Na et al. (2018), Resnick et al. (2011), and Schiltz (1999). From this review, we were able to create seven items for the assessment of stress sources in the legal profession.
- b) Following this, research was done regarding existing stress assessment tools, and, particularly, stress and psychological distress in forensic occupations, leading to the adaptation of eight items from the 23 QVS – *Questionário de Vulnerabilidade ao Stress* (Vaz Serra, 2002), for the assessment of vulnerability to stress, and ten items from the *Inventário de Fontes Stressoras na Atividade Profissional do Juiz do Trabalho* (IFSJ) (Lipp & Tanganelli, 2002), for the assessment of stress sources in the legal profession.
- c) Subsequently, a preliminary scale was constructed, comprised of 25 items built from the literature review or adapted from the above-mentioned scales. After further literature review (Brown, 2010; Vagias, 2006; Wyatt, 1987) and team discussion, we elected to develop a five-point Likert-type scale, with “extreme” minimal and maximal levels (i.e., *absolutely disagree*, *disagree*, *do not agree nor disagree*, *agree*, *absolutely agree*). Every item was verified for grammatical and punctuation errors.
- d) This preliminary scale was then sent to individuals in forensic occupations (e.g., one forensic psychiatrist, one lawyer, one attorney

from the Portuguese Public Prosecution Service, and one judge), who, in turn, provided us with feedback and gave us suggestions regarding potential new items. From this feedback, we included 15 more items that considered worries and problems in these occupations which we had yet to consider, and which weren't described in other studies or assessment tests for occupational stress or burnout in judges, attorneys, and lawyers.

- e) The pilot version of the Stress Scale for Forensic Professionals (ESPF) is a self-report Likert-type instrument comprised of 41 items measured in a five-point scale and includes a small instruction script for participants. In addition to the aforementioned 41 items, the pilot version of ESPF also included seven items from the *Escala de Desejabilidade Social de 20 Itens* (EDS-20; Almiro et al., 2017) (an unidimensional social desirability scale), which were not considered in the factorial structure or final scores of our scale, but instead used solely for the identification of response styles in participants.

Sample and procedure

In the next stage of instrument development, the 41-item version of this scale (plus the seven items of EDS-20) was included in a protocol which was then completed by 348 individuals in the legal profession, particularly 282 lawyers and 66 attorneys from the Portuguese Public Prosecution Service. Lawyers were contacted via social media (e.g., *Facebook*) and e-mail, while also benefitting from the help of two Regional Councils of the Portuguese Bar Association (i.e., Regional Council of Madeira and Regional Council of Faro) who aided us in the dissemination of our protocol. Attorneys' responses, on the other hand, were obtained thanks to the contribution of the Portuguese Public Prosecution Service, who made our assessment protocol available to every Portuguese attorney, via their own online platform. Our protocol was available on the online survey administration software *Google Forms* for approximately three months (from March 2021 to June 2021), to ensure maximum response rate from participants. Apart from the 41-item version of the ESPF, our protocol also included the complete version of the Oldenburg's Burnout Inventory (OLBI; Demerouti & Bakker, 2008; Portuguese version by Sinal et al., 2019) and of the Personality Assessment Inventory (PAI; Morey, 2007), whose Portuguese version is currently being validated. In total, our protocol was comprised of three different assessment scales (ESPF, OLBI, and PAI) and took approximately an hour to complete. Additionally, aside from the aforementioned protocol, we also included a sociodemographic questionnaire, for data gathering.

Sociodemographic questionnaire

The sociodemographic questionnaire contained within our protocol aimed to collect data regarding the gender, age, marital status, work status

(i.e., currently working, or retired), years of experience, and work district of forensic professionals. Additionally, the questionnaire included questions related to physical altercations that may have occurred while performing their profession, as well as inquiries about psychological or psychiatric treatments and medication use of these professionals.

Oldenburg Burnout Inventory (OLBI; Demerouti & Bakker, 2008; Sinval et al., 2019)

The Oldenburg Burnout Inventory is a four-point Likert-type scale for the assessment of burnout, originally developed by Demerouti and Bakker. This instrument is comprised of 16 items that assess the two core dimensions of burnout: *exhaustion* and *disengagement* (Demerouti & Bakker, 2008). Additionally, it covers affective, physical, and cognitive aspects of burnout.

According to the authors, the Oldenburg Burnout Inventory has a good internal consistency, with a reported Cronbach alpha coefficient of .85 (Demerouti & Bakker, 2008). The Portuguese version of OLBI also showed high internal consistency values ($\alpha = .93$) (Sinval et al., 2019). In the present study, OLBI showed excellent internal consistency (Evers et al., 2013), with a Cronbach alpha coefficient reported of .89 (see Table A1, Appendix).

Personality Assessment Inventory (PAI; Morey, 2007)

The Personality Assessment Inventory is a self-administered test of personality, psychopathology, and psychosocial environment, comprised of 344 items, arranged in 22 scales: 4 validity scales, 11 clinical scales, 5 treatment consideration scales, and 2 interpersonal scales (Morey, 2015). The Portuguese version of PAI is currently being validated by Paulino et al. (2018) for forensic settings.

In the original version of PAI, internal consistency values for the full scale were close to .80, considered to be adequate values (Morey, 2015). In the current study, PAI – used to check for convergent and divergent validity of ESPF – also exhibited excellent consistency ($\alpha = .951$) (see Table A2, Appendix) (Evers et al., 2013).

IV – Results

To ascertain ESPF's validity, we decided to assess construct validity, convergent and divergent validity, and the reliability of our scale. Thus, to assess construct validity, we performed a Principal Components Analysis, as well as an analysis of the scree plot and Parallel Analysis of our data, to aid us in determining the existence of several, independent factors. Regarding convergent validity, we proceeded to analyze Pearson's correlation scores between ESPF scores, and scores obtained in tools which propose to assess similar or equivalent constructs as the ones we propose to measure with our scale. Consequently, we analyzed correlations between the total and

subscales' scores of ESPF and scores obtained in the Oldenburg Burnout Inventory (OLBI), as well as in the *Stress* and *Anxiety* subscales of the Personality Assessment Inventory (PAI). Conversely, to assess divergent validity, we analyzed Pearson's correlations between ESPF scores, and scores obtained in tools which propose to assess different, non-related variables to the ones our scale measures. Hence, we checked for correlations between ESPF's total and subscale scores and the *Antisocial Features* and *Warmth* subscales of PAI. Finally, to determine the reliability of our scale, we measured Cronbach's alpha coefficient. In the process of validating our scale, we also analyzed descriptive statistics, particularly regarding differences in scores related to the type of forensic profession, gender, age, and work experience. In the following section, we will proceed to explore each of these validity studies.

Construct validity

The 41 items of the Stress Scale for Forensic Professionals (ESPF) were subjected to Principal Components Analysis (PCA) using SPSS version 25. Prior to performing PCA, the suitability of data for factor analysis was assessed by inspecting the correlation matrix, which revealed the presence of several coefficients of .30 and above. The Kaiser-Meyer-Olkin (KMO) value was .91, exceeding the recommended value of .60 (Kaiser, 1974) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance ($p < .00$), supporting the factorability of the correlation matrix (see Table B1, Appendix).

Principal Components Analysis revealed the presence of nine components with eigenvalues exceeding 1, explaining cumulatively 57.67% of the variance. Because Kaiser's criterion can, sometimes, retain too many factors (Pallant, 2020), we inspected the scree plot, which revealed a break close to the third and fifth component. Subsequently, we proceeded to do a Parallel Analysis, which showed only five components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (41 variables and 348 respondents). Taking these results into account, we elected to extract, initially, four factors. However, these four factors only explained 41.98% of the variance, which was less than desirable; furthermore, an inspection of the communality values revealed that some items had weak loadings ($< .30$) which ultimately led us to eliminate them (particularly items 2, 12, 25, 26, 27, 36, 40, 43, and 48) (see Table B2, Appendix). After eliminating these items and renumbering the remaining ones, the KMO value stayed .91 and Bartlett's Test of Sphericity maintained statistical significance. Therefore, we analyzed the principal components once more, now obtaining six components instead of nine. The scree plot showed similar results, with a break between the third and fifth component, and new Parallel Analysis results now showed four components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (32 variables, and 348 respondents). Consequently,

we decided to retain four components for further investigation (See Table B3 and Figure B1, Appendix).

The four-component solution explains a total of 48.98% of the variance, with Component 1 contributing 29.19%, Component 2 contributing 7.75%, Component 3 contributing 7.11%, and Component 4 contributing 4.93%. To aid in the interpretation of these four components, oblimin rotation was performed (see Table B4, Appendix). There were weak correlations between the four factors ($< .30$) which supports the idea that they are independent from each other (leading us to expect similar solutions had we used the Varimax rotation). After analyzing the four factors, we decided to eliminate item 7 (“I deal with repetitive and monotonous tasks, doing them uninterestedly or effortlessly”), considering it did not suit the factor it proposed to represent. After eliminating this item, we renumbered the remaining items accordingly. The 31-item version of the ESPF is comprised of four components, which we named (i.) *Vulnerability to Stress* (VS), (ii.) *Workload* (WL), (iii.) *Social Support and Recognition* (SSR), and (iv.) *Substance Use* (SU).

Factor 1 is comprised of 16 items and explains 29.19% of the variance, with a mean value of 56.19 ($SD = 10.69$), a maximum score of 80 and a minimum score of 16 (see Table 1). The items included in this component refer to attitudes towards the forensic profession, as well as towards relationships with colleagues, clients, and tasks associated with it, that are most likely to lead to strain, stress, and negative feelings regarding judicial work. Consequently, this factor was named *Vulnerability to Stress* (VS). High scores in this dimension indicate that certain conditions of the work done by professionals in the Justice System are conducive to feelings of stress, strain, and psychological distress, which studies show may lead to more serious psychological problems, such as burnout (e.g., Pines & Keinan, 2005). The Cronbach alpha value of this factor was .90, thus exceeding the minimum recommended value of .70 (Evers et al., 2013), indicating adequate internal consistency. Regarding item-total correlations (see Table 1, Appendix C), item 12 (“My job’s assignments make me nervous”) represents the biggest correlation with the total of factor 1 ($r = .712$). The lowest item-total correlation belongs to item 27 (“Working with publicly scrutinized cases and/or with too many people makes me anxious”) ($r = .448$). Every item correlated above .30 with the total of the *Vulnerability to Stress* dimension. Considering item means (see Table C2, Appendix), participants reported less vulnerability to stress on item 14 (“I feel guilty when I make decisions”), with a mean of 2.42 ($SD = 1.086$), while item 2 (“I worry that I may fail and harm others with a job badly done”) had the highest mean score of 4.57 ($SD = .707$).

Table 1. Factor 1 items and statistics (16 items) – Vulnerability to Stress (VS)

	12. My job’s assignments make me nervous.
	19. I get nervous and upset when I am not as good as I expected at my job’s assignments.
Items	16. I tend to feel guilty when I am criticized by others.
	2. I worry that I may fail and harm others with a job badly done.
	22. I feel bad when I am not perfect at what I do.
	11. Thinking about the impact of my job on other people’s lives makes me worried.

3. I get easily worried about day-to-day challenges of my job. 9. I rarely let myself become disheartened by unpleasant professional events. 29. I fear disciplinary sanctions on account of my job performance. 1. Conflicts with colleagues stress me (e.g., attorneys, lawyers, etc.). 14. I feel guilty when I make decisions. 5. I feel pressured by society's expectations regarding my job. 27. Working with publicly scrutinized cases and/or with too many people makes me anxious. 15. I frequently feel frustrated by the cases I work with. 28. I feel that no matter how much I work justice is not made in courts. 17. My profession negatively interferes with my personal life.					
Factor	<i>M</i>	σ^2	<i>SD</i>	α	Range _a
Statistics	56.19	114.320	10.692	.901	16-80

Note. Range = minimum score – maximum score

The second factor, with seven items (see Table 2), explains 7.75% of the scale variance and has good internal consistency ($\alpha = .856$) (Evers et al., 2013). Because the seven items of this scale measure attitudes of the professional towards their workload and perceptions of overload or underload, we named this factor *Workload* (WL). Literature frequently associates workload with the development of occupational stress and burnout (e.g., Maslach & Leiter, 2017). High scores in this factor point to a forensic professional's perception of overwork. Scale statistics show a mean value of 24.49 ($SD = 5.304$), with a possible maximum score of 35 and a minimum score of 10. Item 30 ("My job jeopardizes my intimate/family life.") has the minimum mean value of 3.10 ($SD = 1.248$), whereas the maximum mean value belongs to item 4 ("I must work in an excessively high rate to comply with my job's deadlines."), with a mean of 3.90 ($SD = .997$) (see Table D1, Appendix). Concerning item-total correlations (see Table D2, Appendix), the lowest value belongs to item 31 ("I do not have enough time to deepen my knowledge about specific thematic areas.") ($r = .505$), and the highest value is attributed to item 18 ("I have an excessive workload") ($r = .760$). All seven items presented correlations above the recommended .30 psychometric value with the total of the *Workload* scale (Pallant, 2020).

Table 2. Factor 2 items and statistics (7 items) – Workload (WL)

Items	18. I have an excessive workload. 20. I believe I work too many hours. 4. I must work in an excessively high rate to comply with my job's deadlines. 6. I feel that I have too many deadlines to abide by. 21. I believe I have as much time as I wished for to make informed decisions. 30. My job jeopardizes my intimate/family life. 31. I do not have enough time to deepen my knowledge about specific thematic areas.					
	Factor	<i>M</i>	σ^2	<i>SD</i>	α	Range _a
	Statistics	24.49	28.135	5.304	.858	10-35

Note. Range = minimum score – maximum score

Factor 3 explains 7.11% of the total variance of ESPF, being comprised of only four items that search to describe perceptions of social support, recognition, and feelings of autonomy in and outside of the workplace (see Table 3). Hence, we decided to name this factor *Social Support and Recognition* (SSR). In the existing literature, lack of social support is commonly associated with increased levels of stress in the workplace and the development of psychological strain and psychopathology (e.g., Leiter et al., 2015). Being that this factor is reversely scored, high scores are indicative of a perception of lack of support and or/autonomy in the workplace. Internal consistency values were undesirable, but acceptable ($\alpha = .64$) (Devellis, 2003; Evers et al., 2013). In reality, weak Cronbach alpha values are common for scales with few items (i.e., less than 10) (Pallant, 2020), so we decided to check for inter-item correlation values, which pointed to a mean inter-item correlation of .31 (an optimal mean inter-item correlation value), with values ranging from .18 to .40 (Briggs & Cheek, 1986). Therefore, we can infer that the 4 items of this factor all measure the same underlying construct.

Scale statistics show a mean value of 9.82 ($SD = 2.753$), with a minimum possible score of 4 and a maximum of 20. The lowest mean in the scale belongs to item 13 (“When I need to make a decision, I feel that I can ponder and discuss it with a colleague”) with a value of 2.05 ($SD = .941$), and the highest value belongs to item 7 (“When I have a personal problem to solve, I can usually benefit from someone else’s help”), with a mean of 2.80 ($SD = 1.081$). Conversely, the highest item-total correlation value belongs to item 13 ($r = .505$), while the lowest correlation with the total of SSR belongs to item 10 ($r = .379$) (see Table E2, Appendix). Each of the four items that constitute this factor had correlations above the recommended value of .30 (Pallant, 2020).

Table 3. Factor 3 items and statistics (4 items) – Social Support and Recognition (SSR)

Items	13. When I need to decide, I feel that I can ponder and discuss it with a colleague.				
	7. When I have a personal problem to solve, I can usually benefit from someone else's help.				
	10. I have autonomy that allows me to apply my ideas to improve the quality of my work.				
	8. I believe my work is recognized by others.				
Factor	<i>M</i>	σ^2	<i>SD</i>	α	Range _a
Statistics	9.82	7.578	2.753	.640	4-20

Note. Range = minimum score – maximum score

The fourth factor of ESPF contributes to 4.93% of the variance, making it the factor which contributes the least to the variance of the scale. Because this was a low value, we decided to verify if this factor was consistent and significant to the global scale. Indeed, this factor is comprised of four items (see Table 4) that propose to assess maladaptive coping strategies associated with judicial stress and the consumption of prescription drugs as a result of psychological or psychiatric maladies related to the job done by forensic professionals. Therefore, we elected to name this factor *Substance Use* (SU). In effect, some authors refer to alcohol, drugs and prescription

drugs consumption as a coping mechanism adopted by overworked, stressed, and burned-out professionals (e.g., Kahill, 1988). The internal consistency of this factor is weak ($\alpha = .658$), but acceptable, nonetheless (Devellis, 2003; Evers et al., 2013). Regardless, we checked the mean inter-item correlation value of this scale, which was .31, an optimal value, following the recommendations made by Briggs and Cheek (1986), who propose inter-item correlation values ranging from .20 to .40. In this case, the inter-item values ranged from .13 to .81. Thus, we can conclude that this subscale is measuring the same underlying characteristic – substance use. In conclusion, although this factor contributes little to the total variance of the scale, we reasoned it presented acceptable internal consistency while also measuring consistently the construct it proposes to assess.

The maximum score of SU is 14 and the minimum score is 4. Furthermore, descriptive statistics (see Table F1, Appendix) identify item 25 (“I need to resort to anxiolytic medication because of my job”) as the item with a highest mean ($M = 2.01$; $SD = 1.276$), and item 24 (“I need to resort to narcotics (e.g., cocaine, hashish) to help me deal with my job’s demands”) as the item with the lowest mean value ($M = 1.13$; $SD = .399$). Concerning the item-total correlations (see Table F2, Appendix), item 25 has the highest correlation with SU ($r = .703$), whereas item 24 has the lowest item-total correlation ($r = .237$). Although this item – along with item 23 (“I need to resort to alcohol to help me deal with my job’s demands”) – present a correlation below the recommend value of .30 (Pallant, 2020), we elected to maintain them, considering ESPF’s overall Cronbach alpha is high, and considering their elimination would not impact the subscale’s alpha coefficient.

Table 4. Factor 4 items and statistics (4 items) – Substance Use (SU)

Items	23. I need to resort to alcohol to help me deal with my job's demands.				
	24. I need to resort to narcotics (e.g., cocaine, hashish) to help me deal with my job's demands.				
	25. I need to resort to anxiolytic medication because of my job.				
	26. I need to resort to antidepressant medication because of my job.				
Factor	<i>M</i>	σ^2	<i>SD</i>	α	Range _a
Statistics	6.36	7.304	2.703	.658	4-14

Note. Range = minimum score – maximum score

Analyzing Pearson’s correlations between the four factors, we found moderate correlations between VS and WL ($r = .560$; $N = 348$; $p < .001$) and between VS and SU ($r = .427$; $N = 348$; $p < .001$). On the other hand, there were weak correlations between VS and SSR ($r = .291$; $N = 348$; $p < .001$). WL correlated moderately with SU ($r = .426$; $N = 348$; $p < .001$) and weakly with SSR ($r = .265$; $N = 348$; $p < .001$). Finally, there were weak correlations between SSR and SU ($r = .249$; $N = 348$; $p < .001$) (Cohen, 1988) (see Table L1, Appendix).

There were moderate to strong statistically significant correlations (Cohen, 1988) between each of the factors and the global scale (VS: $r = .923$; $p < .001$; WL: $r = .778$; $p < .001$; SSR: $r = .469$; $p < .001$; SU: $r = .603$; $p < .001$).

.001). These results emphasize the plausibility of a four-factor solution for ESPF.

Convergent validity

To examine convergent validity, we analyzed correlations between ESPF and two measures that the literature refers to as equal or similar to the construct relevant to our study (i.e., stress, psychological strain), such as burnout, anxiety, and stress. Accordingly, we checked for correlations between total scores obtained in the ESPF and the scores obtained with OLBI, as well as in the *Anxiety* (ANX) and *Stress* (STR) subscales of PAI (see Table L2, Appendix).

The correlation coefficient between total scores of ESPF and OLBI ($r = .774$; $N = 348$; $p < .001$) was strong (Cohen, 1988). Considering the two dimensions of OLBI [*Disengagement* (DIS) and *Exhaustion* (EXH)], both correlated strongly with the global ESPF scale (DIS: $r = .591$.; $N = 348$; $p < .001$; EXH: $r = .805$; $N = 348$; $p < .001$). Regarding the four dimensions of ESPF [*Vulnerability to Stress* (VS), *Workload* (WL), *Social Support and Recognition* (SSR), and *Substance Use* (SU)], DIS had strong correlations with VS ($r = .558$.; $N = 348$; $p < .001$), and moderate correlations with WL ($r = .338$; $N = 348$; $p < .001$), with SSR ($r = .446$; $N = 348$; $p < .001$), and with SU ($r = .376$; $N = 348$; $p < .001$), whilst EXH correlated strongly with VS ($r = .734$; $N = 348$; $p < .001$), with WL ($r = .617$; $N = 348$; $p < .001$), and with SU ($r = .509$; $N = 348$; $p < .001$), while correlating moderately with SSR ($r = .407$; $N = 348$; $p < .001$) (Cohen, 1988).

Regarding the correlation coefficients between ESPF and PAI subscales, and according to Cohen (1988), correlation between the *Anxiety* (ANX) subscale and ESPF ($r = .693$; $N = 348$; $p < .001$) was strong, and between the *Stress* (STR) subscale and ESPF was moderate ($r = .412$; $N = 348$; $p < .001$). On the other hand, the ANX subscale reported strong correlations with VS ($r = .659$; $N = 348$; $p < .001$) and SU ($r = .541$; $N = 348$; $p < .001$), and moderate correlations with WL ($r = .420$; $N = 348$; $p < .001$) and SSR ($r = .361$; $N = 348$; $p < .001$) (Cohen, 1988). The STR subscale reported medium correlations with VR ($r = .359$; $N = 348$; $p < .001$), SSR ($r = .339$; $N = 348$; $p < .001$), and SU ($r = .365$; $N = 348$; $p < .001$), whilst reporting small correlations with WL ($r = .229$; $N = 348$; $p < .001$) (Cohen, 1988).

Divergent validity

To check for divergent validity, we analyzed correlations between ESPF and two measures literature refers to as different and non-related to psychological stress and strain, such as antisocial features and warmth. Consequently, we checked for correlations between total scores obtained in the ESPF and the scores obtained in the *Antisocial features* (ANT), and *Warmth* (WRM) subscales of PAI.

Both the correlation coefficients between ANT and ESPF ($r = .107$; $N = 348$; $p = .047$), and WRM and ESPF ($r = -.237$; $N = 348$; $p < .001$), were weak (see Table L3, Appendix for subscales' correlation coefficients).

Reliability

After obtaining a four-factor, 31-item solution for ESPF, we wished to verify if its items measured the same underlying construct (psychological distress, strain, and stress in forensic work). Thus, to test the internal consistency of our scale, we opted to use Cronbach's alpha coefficient. Ideally, a respectable Cronbach alpha value of a scale should be above .70 (Evers et al., 2013).

The Cronbach alpha value for the Stress Scale for Forensic Professionals was .91, indicating excellent internal consistency (Evers et al., 2013). The total score mean for ESPF is 96.8 ($SD = 16.911$) (Table 5) (to see individually considered items, refer to Table B5 and Table B6, Appendix).

Table 5. Psychometric properties of ESPF (31 items)

<i>M</i>	<i>SD</i>	α	Range _a
96.80	16.953	.914	56 – 142

Note. Range = minimum score – maximum score

An analysis of the relationship between each item and the global scale (see Table B5, Appendix), revealed that most items have correlation values above .30 (Pallant, 2020) with the global scale, bar for item 7 (“When I have a personal problem to solve, I can usually benefit from someone else’s help”) ($r = .173$), item 10 (“I have autonomy that allows me to apply my ideas to improve the quality of my work”) ($r = .282$), item 13 (“When I need to make a decision, I feel that I can ponder and discuss it with a colleague”) ($r = .246$), item 23 (“I need to resort to alcohol to help me deal with my job’s demands”) ($r = .209$), and item 24 [“I need to resort to narcotics (e.g., cocaine, hashish) to help me deal with my job’s demands”] ($r = .080$). Nevertheless, we opted to maintain these items, considering their elimination would not significantly modify the internal consistency of the scale, and because we considered the information it proposed to measure important for our study. Item 17 (“My profession negatively interferes with my personal life”) had the strongest correlation with the total scores of the scale ($r = .708$), while item 24 had the weakest correlation ($r = .080$). Again, despite the weak correlation between item 24 and the total scale, we assessed that its elimination would not significantly alter the internal consistency of the scale (Cronbach's alpha if item deleted = .915).

Analyzing the main descriptive statistics of the items of ESPF (Table B6, Appendix), we determined that means vary from 1.13 ($SD = .399$) – associated to item 24 – to 4.57 ($SD = .707$) – related to item 2 (“I worry that I may fail and harm others with a job badly done”) – the latter of which had the highest mean score among all the items of ESPF, pointing to high levels of psychological stress related to forensic work.

Considering the mean total score of ESPF ($M = 96.8$), we verified that forensic professionals scored highly, but not extremely, in regard to psychological stress associated with the specific traits of their work (considering that the minimum score is 56 and the maximum score is 142). This, on the other hand, can be attested by an analysis of the item mean ($M = 3.13$), which highlights a lack of compromise from participants who thereby frequently chose the intermediate level of our 5 level Likert-type scale (i.e., “do not agree nor disagree”). This is a commonly found issue in Likert scales with these types of response options, and it may reflect a need to avoid reporting less socially acceptable answers or a response to items unfamiliar to the participant (Chyung et al., 2017). Although midpoints in Likert-type scales are useful for making sure no participants are forced into expressing agreement or disagreement when they lack a clear opinion, the issue of excessive neutral answers can be solved by a change in this structure of possible responses, or, alternatively, by adding other response options (i.e., “not applicable”, “I don’t know”, or “it depends”) (Chyung et al, 2017).

Descriptive statistics

After assessing the construct, convergent, and divergent validity of our scale, and after making sure it was a reliable tool for the evaluation of stress in forensic professionals, we proceeded to further test the validity of ESPF by analyzing the data obtained in our forensic professional’s sample, with special focus on differences in scores because of the type of forensic profession (i.e., lawyers or attorneys from the Portuguese prosecution office), gender, age, and years of experience. Thus, the following sections will search to analyze these differences.

Differences in ESPF scores considering the type of forensic profession

Starting by analyzing differences between scores in the two forensic professions of this study (i.e., lawyers and attorneys from the Portuguese prosecution office), we observed that, in the global scale, lawyers ($M = 97.51$; $N = 282$; $SD = 16.761$) had higher levels of psychological stress in result of their job than attorneys ($M = 93.77$; $N = 66$; $SD = 17.559$) (Table 7). Concerning each of the instrument’s subscales, on the other hand, we observed that lawyers had higher scores in VS (lawyers: $M = 57.12$; $SD = 10.523$; attorneys: $M = 51.92$; $SD = 10.644$), and in SU (lawyers: $M = 6.45$; $SD = 2.728$; attorneys: $M = 5.97$; $SD = 2.572$), whereas attorneys scored higher in WL (attorneys: $M = 25.92$; $SD = 5.523$; lawyers: $M = 24.15$; $SD = 5.205$) and SSR (attorneys: $M = 9.95$; $SD = 3.02$; lawyers: $M = 9.79$; $SD = 2.691$) .

Table 7. Descriptive statistics – ESPF total scale and subscales' scores comparisons based on forensic profession

	Forensic Profession	
	Lawyers (<i>n</i> = 282)	Attorneys (<i>n</i> = 66)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
ESPF – Total	97.51 (16.761)	93.77 (17.559)
VS	57.12 (10.523)	51.92 (10.644)
WL	24.15 (5.205)	25.92 (5.523)
SSR	9.79 (2.691)	9.95 (3.02)
SU	6.45 (2.728)	5.97 (2.572)

Considering that the assumptions of independence of observations, normal distribution, and homogeneity of variance were respected (see Table G1 and G2, Appendix), we elected to use a parametric test to verify statistically significant differences between genders (Pallant, 2020). Thus, we proceeded to conduct an independent-samples t-test to compare ESPF scores for lawyers and attorneys. There was no significant difference in scores for lawyers ($M = 97.51$; $SD = 16.761$) and attorneys ($M = 93.77$; $SD = 17.559$; $t(346) = 1.61$, $p = .107$, two-tailed), and the magnitude of the difference in the means (mean difference = 3.73; 95% *CI*: -.82 to 8.28) was very small (eta squared = .007). Regarding each of the subscales, there were statistically significant differences in scores based on gender in VS and WL, but no significant differences in SSR or SU (see Table G3, Table H1, Table I1, Table J1, Table K1, Appendix).

Differences in ESPF scores based on gender

About gender (Table 8) and regarding the global scale, women presented higher levels of psychological stress and strain because of their forensic profession ($M = 98.90$; $N = 253$; $SD = 16.515$) than men ($M = 91.20$; $N = 95$; $SD = 16.918$). Similar results can be found when focusing on each of the subscales, with women scoring higher than men in VS (women: $M = 57.74$; $SD = 9.993$; men: $M = 51.85$; $SD = 11.469$), in WL (women: $M = 24.80$; $SD = 5.343$; men: $M = 23.64$; $SD = 5.130$), in SSR (women: $M = 9.98$; $SD = 2.828$; men: $M = 9.40$; $SD = 2.507$), and in SU (women: $M = 6.38$; $SD = 2.727$; men: $M = 6.31$; $SD = 2.650$).

Table 8. Descriptive statistics – ESPF total scale and subscales' scores comparisons based on gender

	Gender	
	Female (<i>n</i> = 253)	Male (<i>n</i> = 95)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
ESPF – Total	98.90 (16.515)	91.20 (16.918)
VS	57.74 (9.993)	51.85 (11.469)
WL	24.80 (5.343)	23.64 (5.130)
SSR	9.98 (2.828)	9.40 (2.507)
SU	6.38 (2.727)	6.31 (2.650)

An independent-samples t-test was conducted to compare ESPF scores for males and females. There were statistically significant differences in scores for males and females ($t(346) = -3.850$; $p < .001$, two-tailed). However, the magnitude of the difference in the means (mean difference = -7.70, 95% *CI*: -11.64 to -3.77) was small ($\eta^2 = .04$) (Cohen, 1988). Alas, concerning each of the subscales, there were statistically significant differences in scores based on gender solely in VS (see Table G4, Table H2, Table I2, Table J2, Table K2, Appendix).

Differences in ESPF scores based on age

On the subject of age¹, participants were divided into six groups (Group 1: 20-30; Group 2: 31-40; Group3: 41-50; Group 4: 51-60; Group 5: 61-70; Group 6: 71-80). Participants aged 31-40 ($N = 79$) scored highest in the global scale, with a mean of 100.87 ($SD = 15.976$), followed by participants aged 20-30 ($N = 39$), whose mean was 99.90 ($SD = 18.563$) (see Table 9). Participants with ages ranging from 41 to 50 years old ($N = 140$) presented mean scores of 96.59 ($SD = 16.152$), participants with ages between 51 and 60 years old ($N = 67$) had means of 94.84 ($SD = 17.188$), participants with ages ranging from 71 to 80 ($N = 3$) had mean scores of 90.00 ($SD = 1.732$), and, finally, participants aged 61-70 ($N = 19$) scored lowest in the global scale, with a mean of 83.79 ($SD = 17.428$). Regarding differences in subscale results based on age, the highest scores in VS were attributed to people with ages ranging from 20 to 30 years old ($M = 59.59$; $SD = 9.795$), followed by participants aged 31-40 ($M = 59.27$; $SD = 9.254$), participants aged 41-50 ($M = 56.14$; $SD = 10.356$), and participants aged 51-60 ($M = 53.43$; $SD = 11.003$), with participants ranging from 71 to 80 years old scoring the lowest in this subscale ($M = 50.33$; $SD = 2.082$). On the other hand, the highest scores in WL were attributed to people with ages ranging from 31 to 40 years old ($M = 24.97$; $SD = 5.406$), followed by participants aged 51-60 ($M = 24.64$; $SD = 4.920$), people aged 41-50 ($M = 24.63$; $SD = 5.114$), people aged 20-30 ($M = 24.18$; $SD = 6.336$), people aged 61-70 ($M = 21.89$; $SD = 5.415$), and finally people aged 71-80 ($M = 23.33$; $SD = 3.055$). Regarding SSR, people with ages ranging from 20-30 had the highest scores ($M = 10.15$; $SD = 3.022$), followed by participants aged 71-80 ($M = 10.00$; $SD = 1.732$), people aged 51-60 ($M = 9.94$; $SD = 3.045$), people aged 31-40 ($M = 9.92$; $SD = 2.645$), people aged 41-50 ($M = 9.62$; $SD = 2.713$), with people aged 61-70 having the lowest scores ($M = 9.58$; $SD = 2.090$). Finally, concerning SU results, people aged 51-60 scored the highest among the other age groups ($M = 6.82$; $SD = 2.833$), followed by participants with ages ranging from 31 to 40 ($M = 6.71$; $SD = 2.992$), people aged 71-80 ($M = 6.33$; $SD = 2.082$), people aged 41-50 ($M = 6.20$; $SD = 2.582$), people aged 20-30 ($M = 5.97$; $SD = 2.680$), with people with ages ranging from 61 to 70 scoring the lowest ($M = 5.32$; $SD = 1.565$).

¹ Cases excluded: $N = 1$

Table 9. Descriptive statistics – ESPF total scale and subscales' scores comparisons based on age

	Age					
	20-30	31-40	41-50	51-60	61-70	71-80
	(<i>n</i> = 39)	(<i>n</i> = 79)	(<i>n</i> = 140)	(<i>n</i> = 67)	(<i>n</i> = 19)	(<i>n</i> = 3)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
ESPF – Total	99.90 (18.563)	100.87(15.975)	96.59 (16.152)	94.84 (17.188)	83.79 (17.428)	90.00 (1.732)
VS	59.59 (9.795)	59.27 (9.254)	56.14 (10.356)	53.43 (11.003)	47.00 (13.233)	50.33 (2.082)
WL	24.18 (6.336)	24.97 (5.406)	24.63 (5.114)	24.64 (4.920)	21.89 (5.415)	23.33 (3.055)
SSR	10.15 (3.022)	9.92 (2.645)	9.62 (2.713)	9.94 (3.045)	9.58 (2.090)	10.00 (1.732)
SU	5.97 (2.680)	6.71 (2.992)	6.20 (2.582)	6.82 (2.833)	5.32 (1.565)	6.33 (2.082)

To check for differences in ESPF global and subscales scores for different age groups, we elected to conduct a one-way between-groups analysis of variance, using ANOVA. There was a statistically significant difference at the $p < .05$ level in ESPF global scores for the six age groups [$F(5, 341) = 3.84, p = .002$]. The effect size, calculated using eta squared, was small ($\eta^2 = .05$) (Cohen, 1988). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for people aged 61-70 ($M = 83.79; SD = 17.428$) was significantly different from participants aged 20-30 ($M = 99.90; SD = 18.563$), from participants aged 31-40 ($M = 100.87; SD = 15.975$), and from participants aged 41-50 ($M = 96.59; SD = 16.152$). Participants aged 61-70 ($M = 83.79; SD = 17.428$) did not differ significantly from either people aged 51-60 ($M = 94.84; SD = 17.188$) or people aged 71-80 ($M = 90.00; SD = 1.732$), and there were no other significant differences between other age groups (see Table G5, Table H3, Table I3, Table J3, Table K3, Appendix). Regarding each of the ESPF subscales, there was a statistically significant difference at the $p < .05$ level in VS scores for the six age groups [$F(5, 341) = 6.40, p < .001$]. The effect size, using eta squared, was .09, a moderate effect (Cohen, 1988). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for people aged 20-30 ($M = 59.59; SD = 9.795$) was significantly different from people aged 51-60 ($M = 53.43; SD = 11.003$) and from people aged 61-70 ($M = 47.00; SD = 13.23$). People aged 31-40 ($M = 59.27; SD = 9.254$) had significant differences in mean score when compared to people aged 51-60 and people aged 61-70. Furthermore, the mean score for people aged 41-50 ($M = 56.14; SD = 10.356$) was significantly different from people aged 61-70. Concerning the scores obtained in the WL subscale, there were no significant differences between age groups [$F(5, 341) = 1.13, p = .345; \eta^2 = .02$], and the same can be said for the scores obtained in SSR [$F(5, 341) = .336, p = .891; \eta^2 = .01$], and for the scores obtained in SU [$F(5, 341) = 1.483, p = .195; \eta^2 = .02$], all of which had small effect sizes (Cohen, 1988).

Differences in ESPF scores based on work experience

Considering years of experience², participants were divided into five groups (Group 1: 0-10; Group 2: 11-20; Group 3: 21-30; Group 4: 31-40; Group 5: 41-50) (see Table 10). Results show that forensic professionals with less than 10 years of experience score the highest in the global scale ($M = 99.56$; $N = 87$; $SD = 17.320$), followed by participants with experience ranging from 11 to 20 years ($M = 97.73$; $N = 149$; $SD = 16.768$), people with 21 to 30 years of experience ($M = 93.72$; $N = 71$; $SD = 17.034$), people with 31-40 years of experience ($M = 91.78$; $N = 23$; $SD = 17.558$), and finally people with more than 40 years of experience ($M = 87.00$; $N = 2$; $SD = 5.657$), whose scores were the lowest among all the groups. Considering differences between years of experience and each of the ESPF subscales, we observe that people with less than 10 years of experience scored higher than any of the other groups in the VS subscale ($M = 58.33$; $SD = 9.923$), followed by with people with 11 to 20 years of experience ($M = 57.14$; $SD = 10.456$), people with 21-30 years of experience ($M = 53.11$; $SD = 10.655$), and participants with experience ranging from 31 to 40 years ($M = 51.57$; $SD = 13.611$), with people with more than 40 years of experience scoring the least ($M = 48.00$; $SD = 4.243$). In the WL subscale, on the other hand, people with 11 to 20 years of experience scored the highest ($M = 24.65$; $SD = 5.494$), followed by participants with 21 to 30 years of experience ($M = 24.56$; $SD = 5.095$), participants with less than 10 years of experience ($M = 24.46$; $SD = 5.538$), participants with experience ranging from 31 to 40 years ($M = 23.78$; $SD = 4.612$), and participants with more than 40 years of experience ($M = 20.50$; $SD = 4.950$). Scores in the SSR were the highest in participants with 41 to 50 years of experience ($M = 12.50$; $SD = .707$), followed by people with experience ranging from 31 to 40 years ($M = 10.22$; $SD = 2.335$), participants with less than 10 years of experience ($M = 9.97$; $SD = 2.678$), people with 11 to 20 years of experience ($M = 9.83$; $SD = 2.873$), and, finally, participants with 21 to 30 years of experience in forensic professions ($M = 9.49$; $SD = 2.777$). Lastly, scores in the SU subscale show that participants with less than 10 years of experience had the highest scores among other groups ($M = 6.80$; $SD = 3.026$), followed by people with experience ranging from 21 to 30 years ($M = 6.55$; $SD = 2.766$), participants with 31 to 40 years of experience ($M = 6.22$; $SD = 2.335$), and participants with 11 to 20 years of experience ($M = 6.11$; $SD = 2.569$), with people with more than 40 years of experience scoring the least among the different groups ($M = 6.00$; $SD = 2.828$).

² Cases excluded: $N = 16$

Table 10. Descriptive statistics – ESPF total scale and subscales' scores comparisons based on years of experience

	Years of Experience				
	0-10	11-20	21-30	31-40	41-50
	(<i>n</i> = 87)	(<i>n</i> = 149)	(<i>n</i> = 71)	(<i>n</i> = 23)	(<i>n</i> = 2)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
ESPF – Total	99.56 (17.320)	97.73 (16.768)	93.72 (17.034)	91.78 (17.558)	87.00 (5.657)
VS	58.33 (9.923)	57.14 (10.456)	53.11 (10.655)	51.57 (13.611)	48.00 (4.243)
WL	24.46 (5.538)	24.65 (5.494)	24.56 (5.095)	23.78 (4.612)	20.50 (4.950)
SSR	9.97 (2.678)	9.83 (2.873)	9.49 (2.777)	10.22 (2.335)	12.50 (.707)
SU	6.80 (3.026)	6.11 (2.569)	6.55 (2.766)	6.22 (2.335)	6.00 (2.828)

ANOVA analysis showed no significant differences in ESPF global scores between years of experience groups [$F(4, 327) = 1.93, p = .104$], and the effect size was small ($\eta^2 = .02$) (Cohen, 1988). Regarding differences in ESPF subscales among different years of experience, there was a statistically significant difference at the $p < .05$ level in VS scores for the five “years of experience” groups [$F(4, 327) = 4.08, p = .003$], with an effect size of .05 (using eta squared), a small effect (Cohen, 1988). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for participants with less than 10 years of experience ($M = 58.33; SD = 9.923$) was significantly different from participants with 21 to 30 years of experience ($M = 53.11; SD = 10.655$). The remaining groups did not differ significantly from each other. Regarding WL scores, there were no statistically significant differences between the five groups [$F(4, 327) = .414, p = .799$], and the effect size was small ($\eta^2 = .01$). The same can be said for SSR scores [$F(4, 327) = .896, p = .467; \eta^2 = .01$], and for SU scores [$F(4, 327) = .979, p = .419; \eta^2 = .01$] (see Table G6, Table H4, Table I4, Table J4, Table K4, Appendix).

V – Discussion

Throughout the present dissertation, we proceeded to test the validity of our scale by checking construct, convergent, and divergent validity, while also analyzing the reliability of ESPF and differences in scores regarding divergent characteristics of our sample (i.e., type of forensic work, gender, age, work experience).

Construct validity was tested by studying results from Principal Component Analysis and Parallel Analysis, as well as by interpreting the corresponding scree plot, which led us to a four-factor solution for our scale that allowed us to better interpret the results obtained in each of the items included in ESPF, and that proposes to measure specific constructs related to judicial stress.

Regarding convergent validity, we checked for correlations between ESPF scores, and scores obtained in tests which measure similar constructs as the ones we propose to measure with our scale (i.e., OLB scores or scores obtained in the *Stress* and *Anxiety* subscales of PAI). Accordingly, results

pointed to a strong relationship between ESPF and OLBI scores, which we consider to be congruent with the existing literature concerning burnout. Indeed, as stated above, the Oldenburg Burnout Inventory is comprised of two scales – *Disengagement* and *Exhaustion* (Demerouti & Bakker, 2008) – and the exhaustion dimension of burnout, in particular, is strongly related to the most common symptoms of stress (e.g., Maslach & Leiter, 2016), which are generally assessed in the *Vulnerability to Stress* dimension of ESPF (e.g., item 11: “Thinking about the impact of my job on other people’s lives makes me worried”). The disengagement dimension, on the other hand, is usually related to negative attitudes towards clients, colleagues and the work done (e.g., Maslach & Leiter, 2017), which is similarly assessed in the *Vulnerability to Stress* dimension (e.g., item 15: “I frequently feel frustrated by the cases I work with”). The moderate correlations between OLBI and the other dimensions may stem from the fact that, although OLBI assesses professionals’ views regarding their job, it does not focus on exact sources of stress, protective/risk factors or coping strategies utilized by professionals to deal with it. However, because workload, social support/recognition, and substance use are commonly associated with burnout (e.g., Maslach & Leiter, 2017) (being that they are common mediators to the experience of burnout), it is nevertheless understandable why the correspondent ESPF components correlate moderately with OLBI results.

Concerning the strong and moderate correlations obtained between ESPF scores and the *Anxiety* (ANX) and *Stress* (STR) subscales of PAI, results were also predictable, considering the close relationship between the concepts of stress and anxiety. In this sense, literature reports that anxiety is a common complaint associated with stress (Quick & Henderson, 2016), which means that the presence of stress symptoms can be expected to be followed by anxiety symptoms. The ANX subscale of PAI defines anxiety as an agglomeration of symptoms such as worry, impaired concentration and attention, tension, nervousness, and fatigue, among others (Morey, 2015), all of which may also be considered stress symptoms, as we previously explored in the conceptual framework section of the present dissertation. This also explains the strong correlation found between ANX scores and VS scores, considering that the latter subscale heavily relies on the assessment of perceived stress symptoms such as worry related to forensic work (e.g., item 2: “I worry that I may fail and harm others with a job badly done”). The moderate relationship found between the STR subscale and ESPF scores may stem from the fact that the content measured in the referenced PAI subscale relates to a perception of an uncertain and unstable environment (Morey, 2015), which, although measured in ESPF (e.g., item 31: “I do not have enough time to deepen my knowledge about specific thematic areas.”) is not the sole focus of our scale, considering we tried to further explore the concept of stress by including other sides of this construct (such as the symptoms of fatigue, worry, guilt, tension, among others, also related to stress). Our scale also included items related to overwork, social support, and substance use, none of which are considered in the STR subscale of PAI, further justifying the presence of a moderate relationship between STR scores and ESPF total

and subscales scores (while also helping us understand the small correlation found between STR and WL scores). Accordingly, we can safely conclude that the correlations obtained between these four scales justify the convergent validity of our scale.

Regarding divergent validity, we checked for correlates between ESPF total and subscales scores, and the scores obtained in the ANT and WRM subscales of PAI, considering these subscales measure constructs which are non-related to the one we propose to measure with our scale. On one hand, considering the relationship between ANT and ESPF, the results obtained were to be expected, seeing that occupational stress is not usually related to antisocial behaviors and attitudes. Rather, these features develop, sometimes, as a result of traumatic events, present consistently throughout the life of an individual (as is the case in trauma victims, and people with abusive childhoods) (e.g., Lobbestael & Arntz, 2010; Susman, 2005), where the antisocial features are the result of a lifetime of trauma and stressful situations. Nevertheless, considering the specific sample of our study, we presume this is not the case, which is supported by the weak correlations obtained between these two variables.

Correlation coefficients in WRM are of specific interest, considering the fact that there were negative significant correlations with ESPF. This means that, although there is a weak relationship between these two variables (i.e., psychological stress and warmth), it is of a negative nature, where the higher the level of psychological stress, the lower the level of warmth, which is compatible with existing literature that suggest that stress may lead to lower tolerance to frustration, anger, and aggressive behaviors and attitudes (e.g., Cohen, 1980) all of which are antonymous to warmth, when you consider this variable the extent to which a subject is empathic and engaging in interpersonal relationships (Boyle & Lennon, 1994).

Therefore, the correlation coefficients between these three variables corroborate divergent validity, considering they reflect weak associations among them. Our results also show that high levels of stress and psychological strain in consequence of forensic work may lead to more frustration, anger, and aggressiveness (i.e., less warmth) in lawyers and attorneys.

Concerning the reliability of our scale, internal consistency values were optimal in the global scale, VS and WL, and somewhat undesirable, yet acceptable, in subscales such as SSR and SU. This may stem from the fact that these two subscales are comprised of few items, thus leading to smaller alpha coefficients. Nevertheless, to ascertain that the aforementioned scales measured their proposed constructs (i.e., social support and substance use), we tested their inter-item correlation values which proved to be optimal, leading us to conclude that they were acceptable tools for the measurement of a perception of social support and of substance use as a coping mechanism to help forensic professionals manage judicial stress.

After assessing construct, convergent, and divergent validity, as well as the reliability of ESPF, we proceeded to further validate our scale by analyzing the scores obtained by our sample in ESPF, giving special focus to differences

in scores between forensic professions, genders, age groups, and different work experience.

Firstly, regarding differences between forensic occupations, the lack of international studies focused on differences between diverging forensic professions (such is the case of lawyers and attorneys) makes it more difficult to interpret the obtained results, even if they show no significant differences between one another. Regardless, lawyers reported higher scores in VS and SU, while attorneys reported higher scores in WL and SSR than the mean scores for each of these subscales. These results are congruent with the existing literature that reports high levels of stress in forensic professionals (e.g., Tsai et al., 2009), as well as overload and social isolation as responsible factors for stress and burnout in these occupations (e.g., Gil-Monte et al., 2016). The high scores obtained by lawyers in the SU scale are also consistent with international studies which report that the incidence of substance use is higher for lawyers than the general population (e.g., Rothstein, 2008). These high scores in ESPF for both samples put forward the possibility that the forensic profession, comprised of specific tasks and structures, is conducive to a stressful workplace which may lead to high levels of psychological strain and stress, and thus facilitate a later development of psychological problems such as burnout.

Concerning differences in scores because of gender, our results show that women score higher in the four subscales of ESPF when compared to the mean scores and when compared to men, results that are compatible with the findings of other studies, that report higher levels of stress in women in forensic professions than men (e.g., Flores et al., 2009; Sharma et al., 2010). Flores and collaborators' study (2009), in particular, highlight that women may be more susceptible to stress (which is, indeed, identified in the current study by their high scores in VS), or, rather, more likely to report it than men, which is related to cultural aspects concerning gender roles. Thus, it may be useful to consider that our results, likewise, can be the outcome of a reluctance from male participants to report stress symptoms or the perception of stressful aspects of their job. Some studies also draw attention to possible issues, such as the fact that working women, contrary to men, may face biases related to gender, stereotyping discrimination, and difficulties related to a possible need to manage work-home tasks (Sharma et al., 2010). Finally, a study conducted by Miller and collaborators (2018) proposed that women, more than men, tend to seek social support in times of stress and that, accordingly, a perception of social isolation may lead to higher levels of distress in this gender. This may also explain why women scored higher in the SSR than men: if female participants are more sensible to issues related to social support, they may be more likely to report feelings of social isolation (thus scoring higher in SSR) and, consequently, more stress than men (hence the high scores in the global scale).

It may also be important to point that, in other studies, men usually score higher in substance use than women (e.g., Beck et al., 1995; Krill et al., 2016), which is conflicting with our results, that show higher SU scores in female participants when compared to males. Again, this may stem from

problems related to social desirability and a reluctance, from men, to report a need to resort to these types of substances to help them manage stress and psychological strain, in comparison to women.

The issue of age and work experience is one of great relevance in the study of occupational stress and burnout, especially because they are frequently used interchangeably, even if they are, in truth, different concepts. Concerning age, the results of our current study are consistent with the existing literature (e.g., Krill et al., 2016), with higher stress levels in younger age groups. These higher levels of strain and stress in younger forensic professionals may stem from the fact that these subjects have less experience in the field, as well as less social support from colleagues, and less control over the work they do. However, this brings attention to the fact that, nonetheless, age should not be confounded with experience. Regarding substance use, studies commonly report higher levels of substance use in younger forensic professionals (e.g., Krill et al., 2016), which contradicts our findings. Granted, our study showed higher scores in the SU subscale in people with ages varying from 50 to 60 years old. That being said, there were no significant differences between age groups, which signifies that, although people aged 50 to 60 tend to resort more to substances to manage the stress of their legal profession, they do not resort to these measures significantly more than any of the other age groups.

As is the case with age, the existing studies report that people with less experience are more likely to report stress and psychological strain because of their forensic profession than people with more years of experience (e.g., Azeem et al., 2020). This was also the case with our study, where forensic professionals with less than 10 years of experience scored the most out of any other professional experience group. Admittedly, the issue of the relationship between experience and stress has been studied throughout the years, with investigators defending that the reason for a decrease of stress in professionals with more years of experience is that people with more experience tend to develop effective coping mechanisms to deal with stressors at work, thus having more stress-resistant traits (Motowidlo et al., 1986). On the other hand, more stress prone people tend to quit their job earlier in their lives (Maslach et al., 2001), leading to an older and more experienced group of professionals that is more resistant to stress and its long-term consequences.

VI – Conclusions

The present master's dissertation sought to develop and validate a tool for the assessment of psychological stress and strain in the forensic profession (ESPF) that may be useful for preventing grimmer, more complex conditions such as burnout in the Justice System.

Although stress and occupational stress have been the focus of innumerable studies throughout the last 50 years, stress in forensic professions has not been as heavily scrutinized, and in Portugal there is still a lack of understanding about which factors lead to stress and, eventually, burnout in professionals such as lawyers and attorneys of the Portuguese Public

Prosecution Service. In truth, occupational stress can be developed in consequence of factors such as perceived overwork, extensive schedules, and lack of social support, all of which forensic professionals must manage during their occupation, and which we searched to assess with our scale.

ESPF showed reasonable psychometric properties regarding internal consistency, as well as construct, convergent and divergent validity, meaning it is an adequate tool for the assessment of stress and psychological strain levels in forensic professionals, as well as of some of the coping mechanisms they demand (i.e., psychological and/or psychiatric treatment; psychopharmaceutical consumption because of the forensic profession).

Concerning reliability, the final version of ESPF, comprised of 31 items, presented very good internal consistency, and Principal Component Analysis revealed the presence of four components: *Vulnerability to Stress* (VS), *Workload* (WL), *Social Support and Recognition* (SSR), and *Substance Use* (SU). Although SSR and SU had less than desirable alpha coefficients, inter-item correlation values were optimal, leading us to believe that each of the items of these factors measure the underlying construct they propose to assess. The four factors explain a considerable percentage of the variance in the study sample and total correlations with the total scale were acceptable.

Regarding convergent validity, we expected high correlations between ESPF and scores obtained in assessment tools for similar or equal constructs (e.g., stress and burnout). Thus, we checked for relationships between ESPF scores, OLBI scores and the scores obtained in the *Stress* (STR) and *Anxiety* (ANX) subscales of PAI. As expected, high correlations were obtained.

Concerning divergent validity, we checked for the relationship between ESPF scores, and scores obtained in the *Antisocial Features* (ANT) and *Warmth* (WRM) subscales of PAI, considering these were constructs non-related to the proposed assessed constructs of our scale. Results showed small correlations in the ANT subscale and small and negative correlations with WRM, supporting literature that proposes that high levels of stress lead to aggressiveness and lack of empathy (i.e., less warmth).

Data analysis focused on individual differences showed that lawyers scored higher in the global scale, VS, and SU, while attorneys scored higher in WL and SSR. No significant differences between lawyers and attorneys in the global scale were found, and the same can be said in SSR and SU scores. However, statistically significant differences in scores based on the forensic profession in VS and WL were found. Analysis of differences in scores based on gender showed that women scored higher than men in the global scale, as well as in every subscale, although t-test analysis only showed statistically significant differences between genders in the global scale and in VS. Regarding age, younger forensic professionals (20-40 years old) scored generally higher than older age groups in ESPF scale and subscales, and post-hoc analysis indicated statistically significant differences in global scores between participants aged 20-30, participants aged 31-40, and participants aged 41-50. Regarding each of the subscales, significant differences in scores were only found in VS (between people aged 20-30, people aged 51-60, and people aged 61-70, as well as between people aged 41-50 and people aged 61-

70). Although participants with less years of experience tended to score higher in ESPF and subsequent subscales, work experience did not appear to impact differences in scores in ESPF and in any other subscale, for the exception of VS scores, where participants with less than 10 years of experience scored significantly higher than participants with 20 to 30 years of experience.

Overall, further investigation is needed for the betterment of the results found concerning internal and item structure of the scale, and the administration of social desirability scales in addition to the ESPF is fundamental to guarantee the validity of the responses given, especially regarding more sensitive topics (e.g., narcotics and alcohol use). Thus, when used individually, our scale should be accompanied by social desirability tools, as is the case of the EDS-20 items we included in our protocol. Otherwise, if ESPF is used alongside other assessment tools, the ensuing validity scales, if existing, should be considered (e.g., *Positive Impression* scale of PAI).

Currently, studies are being planned with the aim of administrating ESPF to judges; however, for future studies, we also propose an administration of our scale to other forensic professions, such as solicitors, officers of justice, professionals working under the Portuguese National Institute of Legal Medicine and Forensic Sciences, among others, to enable a more comprehensive study of the stress levels of Justice System professionals, and to allow a better understanding of the apparent psychological erosion of people who consistently impact other people's lives with their work, and whose psychological wellbeing should be a major source of concern for those who care for a functioning and thriving Justice System. Ultimately, further studies using this scale may be particularly useful for the assessment, regulation, and monitorization of mental health in forensic professionals, with the intent to avoid the development of bleaker and more grievous psychopathological disorders. On the other hand, regular psychological evaluations of professionals in the field, using protocols that integrate ESPF, may be an asset by allowing a swift call for help from these professionals, whilst allowing justice to be made by people in their optimal decision making capabilities.

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Appendices

Appendix A – PAI and OLBI internal consistency

Table 1. Internal consistency of OLBI

α (16 items)	.888
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Table 2. Internal consistency of PAI

α (344 items)	.951
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Appendix B – Psychometric characteristics of ESPF (31 items)

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		,905
Bartlett's Test of Sphericity	Approx. Chi-Square	4765,540
	Df	496
	Sig.	,000

Table 2. Excluded items from final version of ESPF

I need to resort to high blood pressure medication because of my job.
I can manage cases that involve violent crimes without being affected by them.
I get bothered when I observe legal decisions that collide with my personal views.
When dealing with expert's reports, I only read the conclusions, because I have no time for more.
There are unpleasant things about me that lead to the withdrawal of others.
I worry about my personal safety when working.
I feel disturbed by other people's comments in social media and/or online press.
I feel that many justice professionals have no empathy with victims, and this disturbs me.
I feel that there are sparse means in Justice that allow a better management of my duties.
I deal with repetitive and monotonous tasks, doing them uninterestedly or effortlessly.

Table 3. Comparison of eigenvalues from PCA and criterion values from parallel analysis

Component Number	Actual eigenvalue from PCA	Criterion value from parallel analysis	Decision
1	9.313	1.6295	accept
2	2.490	1.5393	accept
3	2.283	1.4742	accept
4	1.579	1.4215	accept
5	1.346	1.3706	reject

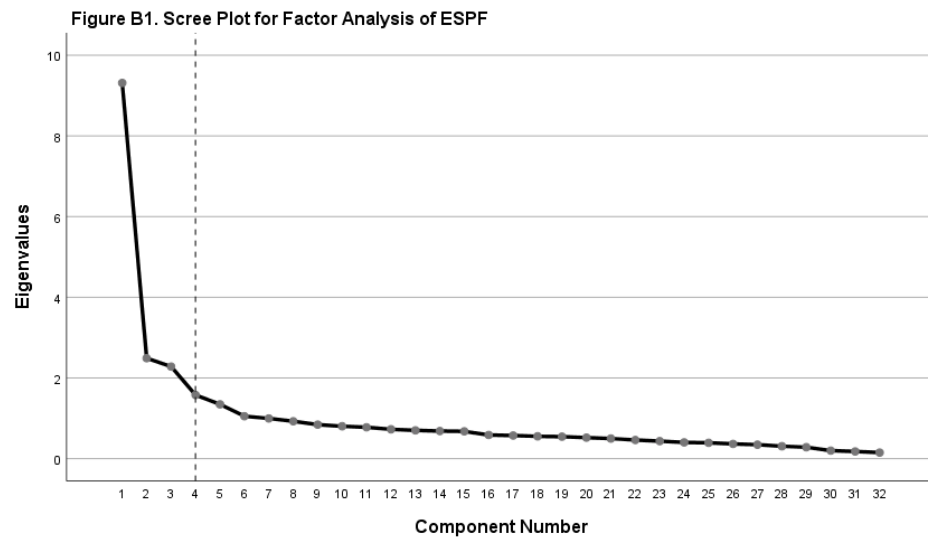


Figure B1. Scree Plot graph with 4 factor retention for ESPF.

Table 4. Pattern and structure matrix for PCA with oblimin rotation of 4 factor solution

Item	Pattern coefficients				Structure coefficients				Communalities
	1	2	3	4	1	2	3	4	
12. My job's assignments make me nervous.	.727	.002	.019	.131	.758	.306	.204	.281	.593
19. I get nervous and upset when I am not as good as I expected at my job's assignments.	.716	.148	-.246	-.059	.708	.380	-.076	.057	.579
16. I tend to feel guilty when I am criticized by others.	.712	-.059	.052	.193	.739	-.251	.235	.338	.589
2. I worry that I may fail and harm others with a job badly done.	.695	.050	-.330	-.203	.602	.242	-.207	-.119	.523
22. I feel bad when I am not perfect at what I do.	.672	.098	-.009	-.049	.699	.353	.145	.097	.498
11. Thinking about the impact of my job on other people's lives makes me worried.	.663	.108	-.224	-.047	.647	.324	-.070	.058	.477
3. I get easily worried about day-to-day challenges of my job.	.648	-.020	.109	.040	.673	.256	.256	.188	.466

9. I rarely let myself become disheartened by unpleasant professional events.	.596	-.044	.164	-.019	.611	.213	.284	.127	.399
29. I fear disciplinary sanctions on account of my job performance.	.576	-.007	.188	-.080	.598	.238	.298	.071	.393
1. Conflicts with colleagues stress me (e.g., attorneys, lawyers, etc.).	.567	-.010	-.010	-.106	.540	.197	.093	.005	.303
14. I feel guilty when I make decisions.	.559	-.153	.100	.282	.578	.117	.252	.394	.442
5. I feel pressured by society's expectations regarding my job.	.554	.201	-.005	.108	.653	.430	.170	.244	.474
27. Working with publicly scrutinized cases and/or with too many people makes me anxious.	.507	.112	.015	-.160	.522	.292	.114	-.041	.306
15. I frequently feel frustrated by the cases I work with.	.497	-.005	.257	.308	.613	.270	.424	.456	.552
28. I feel that no matter how much I work justice is not made in courts.	.471	.013	.082	.176	.529	.233	.221	.288	.321
17. My profession negatively interferes with my personal life.	.426	.320	.215	.161	.630	.541	.391	.328	.578
18. I have an excessive workload.	-.084	.908	-.020	-.001	.266	.872	.109	.093	.767
20. I believe I work too many hours.	-.131	.888	-.050	-.028	.199	.825	.061	.048	.703
4. I must work in an excessively high rate to comply with my job's deadlines.	.052	.786	-.069	-.061	.331	.787	.060	.035	.630
6. I feel that I have too many deadlines to abide by.	.043	.726	.010	.039	.336	.749	.116	.141	.565
21. I believe I have as much time as I wished for to make informed decisions.	.109	.517	.271	.017	.373	.606	.382	.155	.461
30. My job jeopardizes my intimate/family life.	.309	.463	.216	.122	.562	.635	.383	.284	.585

31. I do not have enough time to deepen my knowledge about specific thematic areas.	.229	.446	.026	.087	.426	.550	.166	.194	.364
13. When I need to make a decision, I feel that I can ponder and discuss it with a colleague.	-.045	.001	.783	-.118	.103	.097	.751	.022	.581
7. When I have a personal problem to solve, I can usually benefit from someone else's help.	-.089	.099	.618	-.187	.048	.142	.579	-.075	.382
10. I have autonomy that allows me to apply my ideas to improve the quality of my work.	-.006	.032	.610	.068	.154	.138	.627	.187	.399
8. I believe my work is recognized by others.	.187	-.025	.598	.027	.314	.149	.640	.174	.442
23. I need to resort to alcohol to help me deal with my job's demands.	-.065	.153	-.212	.754	.100	.188	-.059	.720	.577
24. I need to resort to narcotics (e.g., cocaine, hashish) to help me deal with my job's demands.	-.090	-.074	-.112	.711	.000	-.037	-.009	.662	.474
25. I need to resort to anxiolytic medication because of my job.	.147	.292	.211	.392	.386	.434	.366	.499	.457
26. I need to resort to antidepressant medication because of my job.	.087	.319	.246	.349	.335	.437	.383	.453	.421

Note. Major loadings for each item are bolded

Table 5. Internal consistency of ESPF (item analysis)

Item	M_a	σ_a^2	r_b	α_a
1	92.86	273.187	.407	.913
2	92.31	276.654	.376	.913
3	93.31	264.753	.576	.910
4	92.97	269.115	.488	.912
5	93.24	262.964	.619	.910
6	93.21	268.045	.514	.911
7	94.08	278.592	.173	.917
8	94.15	272.426	.389	.913

9	93.25	266.005	.516	.911
10	94.64	276.064	.282	.915
11	92.75	271.831	.493	.912
12	93.42	262.678	.652	.909
13	94.82	277.405	.246	.915
14	94.45	267.497	.488	.912
15	94.20	262.377	.612	.910
16	93.84	261.074	.634	.909
17	93.74	257.048	.708	.908
18	93.49	268.002	.501	.912
19	92.81	269.960	.557	.911
20	93.29	271.045	.426	.913
21	93.63	268.206	.547	.911
22	93.16	264.589	.597	.910
23	95.50	280.170	.209	.915
24	95.75	284.761	.080	.915
25	94.87	262.173	.537	.911
26	95.03	265.522	.505	.911
27	93.25	269.829	.429	.913
28	93.62	266.439	.484	.912
29	93.66	263.166	.512	.911
30	93.78	256.664	.694	.908
31	93.29	268.587	.507	.911

Note. a = if item deleted; b = item-total correlation

Table 6. ESPF items descriptive statistics

Item	<i>M</i>	<i>SD</i>
1	4.02	.892
2	4.57	.707
3	3.57	1.070
4	3.90	.997
5	3.63	1.091
6	3.67	1.006
7	2.80	1.081
8	2.73	.982
9	3.62	1.116
10	2.24	.961
11	4.13	.830
12	3.45	1.052
13	2.05	.941
14	2.42	1.086
15	2.67	1.130
16	3.04	1.151
17	3.13	1.215
18	3.38	1.033

19	4.07	.839
20	3.59	.993
21	3.26	.942
22	3.71	1.045
23	1.37	.750
24	1.13	.399
25	2.01	1.276
26	1.85	1.162
27	3.63	1.064
28	3.26	1.154
29	3.22	1.275
30	3.10	1.248
31	3.59	.990

**Appendix C – Psychometric properties and descriptive statistics
of Factor 1 items: *Vulnerability to Stress (VS)***

Table 1. Internal consistency of Factor 1 (item analysis)

Item	M_a	σ^2_a	r_b	α_a
1	52.16	105.195	.455	.898
2	51.62	106.872	.475	.898
3	52.62	100.011	.614	.893
5	52.55	99.670	.619	.893
9	52.56	100.819	.548	.896
11	52.05	104.266	.553	.896
12	52.73	98.366	.712	.890
14	53.76	101.292	.543	.896
15	53.51	99.522	.601	.894
16	53.14	97.147	.699	.890
17	53.05	97.908	.624	.893
19	52.12	103.039	.622	.894
22	52.47	99.961	.634	.882
27	52.56	103.479	.448	.899
28	52.93	101.518	.493	.898
29	52.97	99.213	.531	.897

Note. a = if item deleted; b = item-total correlation

Table 2. Factor 1 items descriptive statistics

Item	M	SD
1	4.02	.892
2	4.57	.707
3	3.57	1.070
5	3.63	1.091
9	3.62	1.116
11	4.13	.830
12	3.45	1.052
14	2.42	1.086
15	2.67	1.130
16	3.04	1.151
17	3.13	1.215
19	4.07	.839
22	3.71	1.045
27	3.63	1.064
28	3.26	1.154
29	3.22	1.275

**Appendix D – Psychometric properties and descriptive statistics
of Factor 2 Items: *Workload (WL)***

Table 1. Factor 2 items descriptive statistics

Item	<i>M</i>	<i>SD</i>
4	3.90	.997
6	3.67	1.006
18	3.38	1.033
20	3.59	.993
21	3.26	.942
30	3.10	1.248
31	3.59	.990

Table 2. Internal consistency of Factor 2 (item analysis)

Item	M_a	σ_a^2	r_b	α_a
4	20.58	21.068	.664	.830
6	20.82	21.221	.637	.834
18	21.10	20.041	.760	.816
20	20.90	20.978	.678	.828
21	21.23	22.362	.548	.846
30	21.39	20.065	.582	.846
31	20.89	22.426	.505	.852

Note. a = if item deleted; b = item-total correlation

**Appendix E – Psychometric properties and descriptive statistics
of Factor 3 items: *Social Support and Recognition (SSR)***

Table 1. Factor 3 items descriptive statistics

Item	<i>M</i>	<i>SD</i>
7	2.80	1.081
8	2.73	.982
10	2.24	.961
13	2.05	.941

Table 2. Internal consistency of Factor 3 (item analysis)

Item	M_a	σ_a^2	r_b	α_a
7	7.02	4.645	.379	.604
8	7.09	4.848	.408	.579
10	7.58	4.958	.396	.587
13	7.77	4.646	.505	.513

Note. a = if item deleted; b = item-total correlation

**Appendix F – Psychometric properties and descriptive statistics
of Factor 4: *Substance Use (SU)***

Table 1. Factor 4 items descriptive statistics

Item	<i>M</i>	<i>SD</i>
23	1.37	.750
24	1.13	.399
25	2.01	1.276
26	1.85	1.162

Table 2. Internal consistency of Factor 4 (item analysis)

Item	M_a	σ_a^2	r_b	α_a
23	4.99	5.810	.257	.690
24	5.23	6.657	.237	.702
25	4.35	2.719	.703	.357
26	4.51	3.121	.690	.370

Note. a = if item deleted; b = item-total correlation

Appendix G – T tests and ANOVA results for impact of sociodemographic variables (ESPF – Total)

Table 1. Tests of normality (ESPF – Total x Forensic profession)

	Forensic profession	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
ESPF – Total	Lawyers	.048	282	.200	.995	282	.428
	Attorneys	.071	66	.200	.981	66	.398

Table 2. Test of homogeneity of Variances

		Levene statistic	df1	df2	Sig.
ESPF – Total	Based on mean	.344	1	346	.558
	Based on median	.256	1	346	.611
	Based on median and with adjusted df	.259	1	345.3	.611
	Based on trimmed mean	.324	1	346	.570

Table 3. T test results for forensic profession variable

	Forensic profession	M	SD	t (346)	p	95% CI		Cohen's d
						LL	UP	
ESPF – Total	Lawyers _a	97.51	16.761	1.61	.107	-0.82	8.28	.5
	Attorneys _b	93.77	17.559					

Note. CI = Confidence Interval; LL = lower limit; UL = upper limit; a: n = 282; b: n = 66

Table 4. T test results for gender variable

	Gender	M	SD	t (346)	p	95% CI		Cohen's d
						LL	UP	
ESPF – Total	Female _a	98.90	16.515	-3.850	.000	-11.64	-3.77	.2
	Male _b	91.20	16.918					

Note. CI = Confidence Interval; LL = lower limit; UL = upper limit; a: n = 253; b: n = 95

Table 5. ANOVA results for age variable

	Age	M	DP	ANOVA		
				F(5, 341)	p	η^2_p
ESPF – Total	20-30 _a	99.90	18.563	3.84	.002*	.05
	31-40 _b	100.87	15.975			
	41-50 _c	96.59	16.151			
	51-60 _d	94.84	17.188			
	61-70 _e	83.79	17.428			
	71-80 _f	90.00	1.732			

Note. a: n = 39; b: n = 79; c: n = 140; d: n = 67; e: n = 19; f: n = 3

* $p < .05$

Table 6. ANOVA results for years of experience variable

	Years of experience	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (4, 327)	<i>p</i>	η^2_p
ESPF – Total	0-10 ^a	99.56	17.320	1.93	.104	.02
	11-20 ^b	97.73	16.768			
	21-30 ^c	93.72	17.034			
	31-40 ^d	91.78	17.558			
	41-50 ^e	87.00	5.567			

Note. a: *n* = 87; b: *n* = 149; c: *n* = 71; d: *n* = 23; e: *n* = 2

Table 7. ANOVA results for marital status variable

	Marital status	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (3, 344)	<i>p</i>	η^2_p
ESPF – Total	Single ^a	95.77	16.378	.34	.795	.003
	Married/in a <i>de facto</i> union ^b	97.15	17.304			
	Divorced/separated ^c	97.62	15.156			
	Widowed ^d	88.99	41.01			

Note. a: *n* = 86; b: *n* = 226; c: *n* = 34; d: *n* = 2;

Table 8. T test results for involvement in physical altercations at work variable

	Involvement	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
ESPF – Total	Yes ^a	92.13	14.555	1.090	.277	-3.92	13.67	.2
	No ^b	97.01	17.042					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; a: *n* = 15; b: *n* = 333

Table 9. ANOVA results for psychological treatment variable

	Psychological treatment	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (2, 345)	<i>p</i>	η^2_p
ESPF – Total	Yes ^a	107.00	15.311	9.138	.000	.05
	No ^b	94.94	16.714			
	Not currently, but benefitted in the past ^c	102.43	16.319			

Note. a: *n* = 25; b: *n* = 277; c: *n* = 46.

Table 10. ANOVA results for psychiatric treatment variable

	Psychiatric treatment	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (2, 345)	<i>p</i>	η^2_p
ESPF – Total	Yes ^a	106.91	18.040	10.633	.000	.06
	No ^b	94.74	16.483			
	Not currently, but benefitted in the past ^c	102.50	15.364			

Note. a: $n = 32$; b: $n = 274$; c: $n = 42$.

Table 11. ANOVA results for psychopharmaceutical consumption variable

	Consumption of psychopharmaceuticals	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (2, 345)	<i>p</i>	η^2_p
ESPF – Total	Yes ^a	106.02	15.769	27.356	.000	.14
	No ^b	92.25	15.473			
	Not currently, but consumed in the past ^c	103.56	17.913			

Note. a: $n = 87$; b: $n = 227$; c: $n = 34$.

Appendix H – T tests and ANOVA results for impact of sociodemographic variables of ESPF Factor 1: *Vulnerability to Stress*

Table 1. T test results for forensic profession variable

	Forensic profession	M	SD	t (346)	p	95% CI		Cohen's d
						LL	UP	
<i>Vulnerability to stress</i>	Lawyers _a	57.12	10.523	3.601	.000	2.36	8.03	.2
	Attorneys _b	51.92	10.644					

Note. CI = Confidence Interval; LL = lower limit; UL = upper limit; a: n = 282; b: n = 66

Table 2. T test results for gender variable

	Gender	M	SD	t (346)	p	95% CI		Cohen's d
						LL	UP	
<i>Vulnerability to stress</i>	Female _a	57.74	9.993	-4.697	.000	-8.35	-3.42	.2
	Male _b	51.85	11.469					

Note. CI = Confidence Interval; LL = lower limit; UL = upper limit; a: n = 253; b: n = 95

Table 3. ANOVA results for age variable

	Age	M	DP	ANOVA		
				F(5, 341)	p	η^2_p
<i>Vulnerability to stress</i>	20-30 _a	59.59	9.795	2.111	.147	.086
	31-40 _b	59.27	9.254			
	41-50 _c	56.14	10.356			
	51-60 _d	53.43	11.003			
	61-70 _e	47.00	13.233			
	71-80 _f	50.33	2.082			

Note. a: n = 39; b: n = 79; c: n = 140; d: n = 67; e: n = 19; f: n = 3

Table 4. ANOVA results for years of experience variable

	Years of experience	M	DP	ANOVA		
				F(4, 327)	p	η^2_p
<i>Vulnerability to stress</i>	0-10 _a	58.33	9.923	4.083	.003*	.048
	11-20 _b	57.14	10.456			
	21-30 _c	53.11	10.655			
	31-40 _d	51.57	13.611			
	41-50 _e	48.00	4.243			

Note. a: n = 87; b: n = 149; c: n = 71; d: n = 23; e: n = 2

* p < .005

Table 5. ANOVA results for marital status variable

Marital status		<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (3, 344)	<i>p</i>	η^2_p
<i>Vulnerability to stress</i>	Single ^a	55.85	10.299	1.308	.272	.011
	Married/in a <i>de facto</i> union ^b	56.47	10.849			
	Divorced/separated ^c	55.41	8.914			
	Widowed ^d	42.00	36.770			

Note. a: *n* = 86; b: *n* = 226; c: *n* = 34; d: *n* = 2;

Appendix I – T tests and ANOVA results for impact of sociodemographic variables on ESPF Factor 2: *Workload*

Table 1. T test results for forensic profession variable

	Forensic profession	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
<i>Workload</i>	Lawyers _a	24.15	5.205	-2.466	.014	-3.19	-.36	.2
	Attorneys _b	25.92	5.523					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; a: n = 282; b: n = 66

Table 2. T test results for gender variable

	Gender	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
<i>Workload</i>	Female _a	24.80	5.343	-1.824	.069	-2.41	.09	.2
	Male _b	23.64	5.130					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; a: n = 253; b: n = 95

Table 3. ANOVA results for age variable

	Age	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (5, 341)	<i>p</i>	η^2_p
<i>Workload</i>	20-30 _a	24.18	6.336	1.128	.345	.016
	31-40 _b	24.97	5.406			
	41-50 _c	24.63	5.114			
	51-60 _d	24.64	4.920			
	61-70 _e	21.89	5.415			
	71-80 _f	23.33	3.055			

Note. a: n = 39; b: n = 79; c: n = 140; d: n = 67; e: n = 19; f: n = 3

Table 4. ANOVA results for years of experience variable

	Years of experience	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (4, 327)	<i>p</i>	η^2_p
<i>Workload</i>	0-10 _a	24.46	5.538	.414	.799	.005
	11-20 _b	24.65	5.494			
	21-30 _c	24.56	5.095			
	31-40 _d	23.78	4.612			
	41-50 _e	20.50	4.950			

Note. a: n = 87; b: n = 149; c: n = 71; d: n = 23; e: n = 2

Table 5. ANOVA results for marital status variable

	Marital status	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (3, 344)	<i>p</i>	η^2_p
<i>Workload</i>	Single ^a	23.83	5.250	1.081	.357	.009
	Married/in a <i>de facto</i> union ^b	24.59	5.416			
	Divorced/separated ^c	25.24	4.691			
	Widowed ^d	28.50	2.121			

Note. a: $n = 86$; b: $n = 226$; c: $n = 34$; d: $n = 2$;

**Appendix J – T tests and ANOVA results for impact of
sociodemographic variables on ESPF Factor 3: Social Support
and Recognition**

Table 1. T test results for forensic profession variable

	Forensic profession	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
<i>Social Support and Recognition</i>	Lawyers _a	9.79	2.691	-.444	.657	-.91	.57	.2
	Attorneys _b	9.95	3.02					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; *a*: *n* = 282; *b*: *n* = 66

Table 2. T test results for gender variable

	Gender	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
<i>Social Support and Recognition</i>	Female _a	9.98	2.828	-1.745	.082	-1.23	.07	.2
	Male _b	9.40	2.507					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; *a*: *n* = 253; *b*: *n* = 95

Table 3. ANOVA results for age variable

	Age	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (5, 341)	<i>p</i>	η^2_p
<i>Social Support and Recognition</i>	20-30 _a	10.15	3.022	.336	.891	.005
	31-40 _b	9.92	2.645			
	41-50 _c	9.62	2.713			
	51-60 _d	9.94	3.045			
	61-70 _e	9.58	2.090			
	71-80 _f	10.00	1.732			

Note. *a*: *n* = 39; *b*: *n* = 79; *c*: *n* = 140; *d*: *n* = 67; *e*: *n* = 19; *f*: *n* = 3

Table 4. ANOVA results for years of experience variable

	Years of experience	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (4, 327)	<i>p</i>	η^2_p
<i>Social Support and Recognition</i>	0-10 _a	9.97	2.678	.896	.467	.011
	11-20 _b	9.83	2.873			
	21-30 _c	9.49	2.777			
	31-40 _d	10.22	2.335			
	41-50 _e	12.50	.707			

Note. *a*: *n* = 87; *b*: *n* = 149; *c*: *n* = 71; *d*: *n* = 23; *e*: *n* = 2

Table 5. ANOVA results for marital status variable

		<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (3, 344)	<i>p</i>	η^2_p
<i>Social Support and Recognition</i>	Single ^a	10.02	2.906	.348	.791	.003
	Married/in a <i>de facto</i> union ^b	9.71	2.712			
	Divorced/separated ^c	10.03	2.702			
	Widowed ^d	10.00	2.828			

Note. a: *n* = 86; b: *n* = 226; c: *n* = 34; d: *n* = 2;

**Appendix K – T tests and ANOVA results for impact of
sociodemographic variables on ESPF Factor 4: Substance Use**

Table 1. T test results for forensic profession variable

	Forensic profession	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
<i>Substance Use</i>	Lawyers _a	6.45	2.728	1.312	.191	-.24	1.21	.2
	Attorneys _b	5.97	2.572					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; *a*: *n* = 282; *b*: *n* = 66

Table 2. T test results for gender variable

	Gender	<i>M</i>	<i>SD</i>	<i>t</i> (346)	<i>p</i>	95% CI		Cohen's <i>d</i>
						<i>LL</i>	<i>UP</i>	
<i>Substance Use</i>	Female _a	6.38	2.727	-.240	.811	-.72	.56	.2
	Male _b	6.31	2.650					

Note. CI = Confidence Interval; *LL* = lower limit; *UL* = upper limit; *a*: *n* = 253; *b*: *n* = 95

Table 3. ANOVA results for age variable

	Age	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (5, 341)	<i>p</i>	η^2_p
<i>Substance Use</i>	20-30 _a	5.97	2.680	1.483	.195	.021
	31-40 _b	6.71	2.992			
	41-50 _c	6.20	2.582			
	51-60 _d	6.82	2.833			
	61-70 _e	5.32	1.565			
	71-80 _f	6.33	2.082			

Note. *a*: *n* = 39; *b*: *n* = 79; *c*: *n* = 140; *d*: *n* = 67; *e*: *n* = 19; *f*: *n* = 3

Table 4. ANOVA results for years of experience variable

	Years of experience	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (4, 327)	<i>p</i>	η^2_p
<i>Substance Use</i>	0-10 _a	6.80	3.026	.979	.419	.012
	11-20 _b	6.11	2.569			
	21-30 _c	6.55	2.766			
	31-40 _d	6.22	2.335			
	41-50 _e	6.00	2.828			

Note. *a*: *n* = 87; *b*: *n* = 149; *c*: *n* = 71; *d*: *n* = 23; *e*: *n* = 2

Table 5. ANOVA results for marital status variable

	Marital status	<i>M</i>	<i>DP</i>	ANOVA		
				<i>F</i> (3, 344)	<i>p</i>	η^2_p
<i>Substance Use</i>	Single ^a	6.07	2.769	.976	.404	.008
	Married/in a <i>de facto</i> union ^b	6.38	2.664			
	Divorced/separated ^c	6.94	2.696			
	Widowed ^d	7.50	4.950			

Note. a: *n* = 86; b: *n* = 226; c: *n* = 34; d: *n* = 2;

Appendix L – Correlations Analysis (Pearson's *r*)

Table 1. Pearson's correlation results between ESPF and factors

Measure	ESPF	VS	WL	SSR	SU
ESPF	-	.923*	.778*	.469*	.603*
VS	.923*	-	.560*	.291*	.427*
WL	.778*	.560*	-	.265*	.426*
SSR	.469*	.291*	.265*	-	.249*
SU	.603*	.427*	.426*	.249*	-

Note. VS = Vulnerability to stress; WL = Workload; SSR = Social support and recognition; SU = Substance use.

* $p < .01$

Table 2. Pearson's correlation – convergent validity

Measure	ANX	STR	OLBI	DIS	EXH
ESPF	.693*	.412*	.774*	.591*	.805*
VS	.659*	.359*	.716*	.558*	.734*
WL	.420*	.229*	.533*	.338*	.617*
SSR	.361*	.339*	.467*	.446*	.407*
SU	.541*	.365*	.490*	.376*	.509*

Note. VS = Vulnerability to stress; WL = Workload; SSR = Social support and recognition; SU = Substance use; STR = Stress; ANX = Anxiety; DIS = Disengagement; EXH = Exhaustion.

* $p < .01$

Table 3. Pearson's correlation – divergent validity

Measure	ANT	WRM
ESPF	.107*	-.237**
VS	.070	-.233**
WL	.094	-.106*
SSR	.005	-.235**
SU	.201**	-.116*

Note. VS = Vulnerability to stress; WL = Workload; SSR = Social support and recognition; SU = Substance use; ANT = Antisocial features; WRM = Warmth.

* $p < .05$; ** $p < .01$