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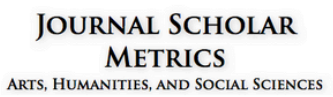

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Mental Health and Work Engagement as Predictors of Different Burnout Conceptualizations in a Multi-Occupational Sample from Latvia

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Abstract

The aim of the study was to investigate the role of mental health concepts (depression, anxiety, and stress) and work engagement in the prediction of burnout sub-variables in different conceptual models and which sub-variable they explain the most. It was assumed, that conceptualization of burnout subtypes could be more successful in the distinction of the burnout from other mental health phenomena compared to the well-known approach. A cross-sectional study among multi-occupational sample (N=394) was conducted. A correlational and multivariative design was done. Depression, Anxiety and Stress Scales was used for measure depression, anxiety, and stress and Utrecht Work Engagement Scale for measure work engagement. Maslach Burnout Inventory General Survey and Burnout Clinical Subtype Questionnaire were used for burnout measures. Anxiety, work engagement, and stress were significant predictors of Frenetic subtype, Work engagement and depression explained Underchallenged subtype, depression, work engagement and anxiety explained Worn-Out, but all independent variables explained Exhaustion, in turn depression and work engagement predicted Cynicism and Professional efficacy. Sociodemographic factors were controlled. Work engagement had greater predictive value of the burnout in the Montero Marín model, but the mental health factors played a more dominant role in the Maslach model. The results indicate a greater role of depression in the classical burnout model.

Key words: burnout, burnout subtypes, correlates, predictors.

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Novelty and Significance

What is already known about the topic?

- Professional burnout is a common complaint about impaired mental health in work settings.
- The relationship between burnout, mental health, and work engagement are contradictory, especially concerning burnout and depression.
- There are different burnout conceptualizations, treating burnout as a homogenous or heterogenic condition.

What this paper adds?

- The study identified the specific relationships between burnout, mental health concepts, and work engagement comparing two different burnout conceptualizations.
- Subtype conceptualization of the burnout allows identifying a broader range of burnout related variety among employees, which may guide the development of individually suitable and effective interventions for different burnout subtypes.

The aim of the study was to investigate the role of mental health concepts (depression, anxiety, and stress) and work engagement in the prediction of burnout sub-variables in different conceptual models and which sub-variable they explain the most.

Our special focus was on depression as the most debated possible overlapping construct (Bianchi, Schonfeld, & Laurent, 2015a,b,c; Maslach & Leiter, 2016). We also included stress as an important trigger of the burnout process and anxiety as a part of the tripartite model of anxiety and depression (Clark & Watson, 1991). Work

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engagement demonstrated a contradictory relationship with burnout (Leiter & Maslach, 2017; Bocéréan, Dupret, & Feltrin, 2019) and was included in our investigation as well.

The novelty of this study is that we used Maslach conceptualization of the burnout (Maslach, Jackson, & Leiter, 1996) together with Montero Marín's conceptualization of burnout subtypes (Montero Marín & García Campayo, 2010) in variable-oriented approach and investigated the relationship with depression, anxiety, stress and work engagement (as independent variables) in one multi-occupational sample.

To date, the classical Maslach conceptualisation of the burnout (Maslach *et alia*, 1996) have been used more frequently in research work (Bianchi *et alia*, 2015a). However, new models are also emerging (Montero Marín & García Campayo, 2010). We assumed that conceptualization of burnout subtypes (Montero Marín & García Campayo, 2010) could be more successful in the distinction of the burnout from other mental health phenomena compared to the well-known three-dimension approach (Maslach *et alia*, 1996). Burnout subtype model provide an alternative explanation of the individual differences in burnout experience and could be helpful for earlier detection and more successful intervention of the burnout (Montero Marín, Prado Abril, Demarzo, García Toro, & García Campayo, 2016a).

Nevertheless, scientists and practitioners have been studying burnout phenomenon all over the world since the last century 70-ties, burnout is not recognized as mental illness in either the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, APA, 2013), or in the 11th Revision of the International Classification of Diseases (ICD-11, WHO, 2019). This lack of an official diagnosis limits access to treatment, disability coverage, and workplace accommodations (Maslach & Leiter, 2016). Disability applications usually have referred to depression, chronic fatigue or other mental health issues with an unfortunate consequence of such inaccurate diagnoses –resulting in reduced possibilities for accurate treatment, successful recovery and return to work (Maslach & Leiter, 2016).

The classical approach to the burnout is developed by Christina Maslach and colleagues, who proposed defining burnout as a psychological syndrome of emotional exhaustion, depersonalization, and reduced efficacy as a result of a prolonged exposure to chronic interpersonal stressors at the workplace (Maslach *et alia*, 1996; Maslach, Schaufeli & Leiter, 2001; Maslach, 2003). The most popular burnout measurement tool -the *Maslach Burnout Inventory* (MBI), is based on this conceptualization (Maslach et alia, 1996)

Burnout is generally perceived as unified disorder with homogeneous symptomatology across people. Exhaustion is described as a lack of emotional resources, feelings of tiredness, and chronic fatigue; Cynicism refers to distancing from one's work and to the development of negative attitudes towards work tasks, customers and colleagues. Reduced professional efficacy is embodying a loss of competence and productivity, and negative evaluation of personal accomplishments at work (Maslach & Leiter, 2016).

However, recent investigations showed that burnout manifests in different ways and different burnout subtypes might exist (Maslach & Leiter, 2008; Leiter & Maslach, 2016; Mäkikangas & Kinnunen, 2016; Bauernhofer *et alia*, 2018). These are person-oriented studies exploring burnout subtypes based on the Maslach conceptualization of burnout so far, and consistently the work is done from the analysis of the three dimensions of the MBI (Mäkikangas & Kinnunen, 2016; Bauernhofer *et alia*, 2018). For example, Leiter and Maslach (2016) identified five different profiles on the continuum from the most negative experience to the most positive. Burnout was the most negative

endpoint, characterized by high results on all three MBI dimensions, but Engagement as positive endpoint came along with low results on all three MBI dimensions. The three intermediate profiles showed high result only in one MBI dimension. Disengaged showed high results in Cynicism, Overextended in Exhaustion, but Ineffective showed impaired results only in Professional Efficacy dimension. However, less is known about the factors predicting one or another burnout profile.

Nevertheless, there exists another way to solve the problem of the burnout inconsistent aetiology (Montero Marín & García Campayo, 2010). In this study we supplement the classic approach with a new conceptualization of burnout based on Farber's (Farber, 1999, Farber, 2000a, Farber, 2000b) proposal by Montero Marín (2009). This conceptualization was developed by conducting qualitative research and developing a theory of three different types of burnout, which has already received empirical support in different countries (Montero Marín & García Campayo, 2010; Montero Marín *et alia*, 2016b; Abeltina, Stokenberga, Skudra, Rascevska & Kolesovs, 2020; Demarzo *et alia*, 2020).

In the Montero Marín (2010) conceptualization, burnout subtypes differ on how the individual deals with stress and it was defined as the degree of dedication towards work. Based on this idea, three burnout subtypes have emerged: Frenetic, Underchallenged, and Worn-Out. Nevertheless, there is a possibility that individuals may fluctuate between these three profiles or gradually pass from one to another, along with a decrease in dedication level (Montero Marín & García Campayo, 2010).

Involvement in tasks and increasing effort to overcome difficulties defines the Frenetic subtype. Besides a high degree of involvement, individuals with this profile have great ambitions and a need for achievements, accompanied with the feeling of being overwhelmed caused by the neglect of health and personal life needs, in an attempt to satisfy work demands.

Indifference and detachment possess to the Underchallenged subtype. Individuals show no interest towards work and perform tasks in a superficial way. Other characteristics of this subtype are lack of development, along with a dissatisfaction of one's talents implementation, and boredom, experiencing work as monotonous and routine.

The Worn-Out subtype neglects responsibilities and surrenders toward difficulties. Also, individuals report impaired control over the results of their work and a lack of acknowledgement of their efforts (Montero Marín, García Campayo, Mosquera, & López, 2009). The Worn-Out subtype seemed to be closest to the classical Maslach conceptualisation of the burnout, as it showed the strongest correlations with all MBI-GS dimensions, compared to other subtypes (Montero Marín & García Campayo, 2010; Abeltina *et alia*, 2020).

Montero Marín's conceptualization of burnout was operationalized by the Burnout Clinical Subtype Questionnaire (BCSQ-36), which showed a satisfactory model fit in Spanish, Latvian, and Brazilian cultures (Montero Marín & García Campayo, 2010; Montero Marín *et alia*, 2016b; Wickramasinghe & Wijesinghe, 2018; Abeltina *et alia*, 2020, Demarzo *et alia*, 2020). The BCSQ has been translated and previously used in different countries: Spain (Montero Marín & García Campayo, 2010), Iran (Mohebbi *et alia* 2019), Sri Lanka (Wickramasinghe & Wijesinghe, 2018), Austria (Bauernhofer *et alia*, 2019), Brazil (Demarzo *et alia*, 2020), and Latvia (Abeltina *et alia*, 2020).

One sub-aim of this study was to investigate the relationship of burnout subtypes to depression, since there was an intense debate taking place among researchers about these constructs during the past decades (Ahola *et alia*, 2005; Ahola & Hakanen, 2007;

Toker & Biron, 2012; Hakanen & Schaufeli, 2012; Bianchi *et alia*, 2015a,b,c; Maslach & Leiter, 2016; van Dam, 2016; Bauernhofer *et alia*, 2018). Should we consider the burnout as a unique construct or rather a new label of an already known phenomenon of depression?

Depression and burnout are manifested by similar physical and psychological symptoms (fatigue, low self-esteem, sleep disturbances, feelings of failure, impaired cognitive performance, etc.) and researchers pay attention to the difficulties to make clinical differentiation and separate confirmed diagnosis of depression from severe burnout (Bocéréan *et alia*, 2019). These two constructs were studied also at a biological level. Systematic review showed that burnout and depression appear to share a common biological basis (Bakusic, Schaufeli, Claes, & Godderis, 2017).

Another systematic review and meta-analysis pointed out alarming results from some studies. For example, Maske *et alia* (2016) showed that 58% of individuals who have been diagnosed with burnout were also diagnosed with depression or a depressive episode. The authors warned that these similarities between burnout and depression might lead to a false diagnosis, resulting in false treatments of the individuals who suffer from one of the disorders (Koutsimani, Montgomery, & Georganta, 2019). Also, Bianchi and colleagues made a series of studies and offered to look at burnout as a specific form of depression and not as a different type of pathology (Bianchi, Boffy, Hingray, Truchot, & Laurent, 2013; Bianchi *et alia*, 2015a,b,c). His latest findings again suggest that burnout may not be a specifically job-induced syndrome, and he continues questioning the validity of the burnout construct (Bianchi, Schonfeld, & Laurent, 2019; Bianchi & Brisson, 2019).

There is no lack of evidence for the opposite idea, that burnout can be distinguished from depressive symptoms. For example, there are studies where burnout and depression didn't not show the overlap and burnout was differentiated from depression (Bakker, Schaufeli, Demerouti, Janssen, Van der Hulst, & Brouwer, 2000; Schaufeli, Bakker, Hoogduin, Schaap & Kladler, 2001; Toker & Biron, 2012). The study of Thuynsma and de Beer (2017) indicates that burnout is an independent multifaceted and multidimensional phenomenon that is not isolated from the field of work. Some studies considered show that burnout is work related and situation specific, whereas depression is context free and pervasive (Maslach & Leiter, 2016; Melchers, Plieger, Meermann, & Reuter, 2015). So, this could be an important factor to distinguish burnout from depression (Maslach *et alia* 2001; Iacovides, Fountoulakis, Kaprinis, & Kaprinis, 2003). But there is also discussion about whether, within this context, this is related only to the work environment or also to the in-home environment, where parents could experience burnout as well (Roskam, Brianda, & Mikolajczak, 2018).

Recent systematic review and meta-analysis of 69 studies showed that burnout and depression are associated with each other, but the effect is not so strong to suggest they are the same constructs; thus, it means that burnout and depression are more likely to be two different constructs rather than one (Koutsimani *et alia*, 2019).

Studies of the nature of the relationship between burnout and depression have also shown inconsistent results. The *Conservation of Resources Theory* (Hobfoll, 1989; Hobfoll & Freedy, 1993) indicates that depressive symptoms will appear in the late stages of burnout, and in this case, we could conceptualize relationships as unidirectional -from burnout to depression, and there is a body of studies confirming this idea (Schaufeli & Enzmann, 1998; Hakanen, Schaufeli, & Ahola, 2008; Hakanen & Schaufeli, 2012; Shin, Noh, Jang, Park, & Lee, 2013). But there are also researches

that show an opposite direction from depression to burnout (Salmela-Aro, Aunola, & Nurmi, 2008; Campbell, Prochazka, Yamashita, & Gopal, 2010; Armon, Shirom, & Melamed, 2012) or no predictive relation (Bianchi, Schonfeld, & Laurent, 2015d). To make this picture even more complex, it should be mentioned, that some researchers have found the reciprocal nature of the relationship between burnout and depression (Ahola & Hakanen, 2007; Toker & Biron, 2012).

From the perspective proposed by Montero Marín, there is only few studies, that had examined relationships between burnout clinical subtypes and depression. Results suggests the burnout subtypes and depression seem to be different, but related constructs (Demarzo *et alia*, 2019) and severe results in Worn-Out subtype was connected to the high level of depressive symptoms (Bauernhofer et alia, 2019).

Using two different conceptualizations of burnout in one sample can make an important contribution and help clarify whether burnout and depression are the same construct or not.

Some other concerns with construct overlap are connected to the distinction between burnout and anxiety. This overlap attracted less interest from researchers than in the case of depression (Koutsimani *et alia*, 2019), but several important conclusions should be mentioned.

Anxiety is a negative mood state that go along with bodily symptoms such as increased heart rate, muscle tension, a sense of unease, and worries about the future (APA, 2013; Barlow, 2002). The function of anxiety is to facilitate coping with adverse or unexpected situations in life (Steimer, 2002), though prolonged anxiety is one of the most common conditions impairing quality of life (Mendlowicz & Stein, 2000). Even more important, anxiety disorders are the most prevalent psychiatric disorders. There is a high comorbidity between anxiety and depressive disorders (Thibaut, 2017).

Research of Mousavi *et alia* (2017) showed that burnout significantly predicted 25% of anxiety variance. Meta-analysis of 36 studies (Koutsimani *et alia*, 2019) indicated an association between burnout and anxiety, which is not so strong that it indicates full overlap between the two variables. Overall burnout is associated with anxiety, but just like the case with depression, they are in fact different constructs (Koutsimani *et alia*, 2019). To the nature of the relationships between anxiety and burnout, it is possible that individuals who are more prone to experiencing higher levels of anxiety are also more likely to develop burnout as well (Koutsimani *et alia*, 2019).

Our research could help to provide an insight about the overlap between anxiety and burnout when we look at these constructs through different conceptualizations of professional burnout.

Researches into the phenomenon of burnout obviously come across the concept of stress. Burnout is seen both because of prolonged stress (Maslach & Jackson, 1981) and because of ineffective coping strategies dealing with this work-related stress (Shin, Park, Ying, Kim, Noh, & Lee, 2014). Also, there are studies that show burnout as a predictor of stress (Mousavi *et alia*, 2017). There is huge amount of research about organizational and individual factors as stressors (Shin *et alia*, 2014), which is not the focus of this study.

Considering the ambiguous position on the relationship between the concepts of burnout and other constructs, such as depression, anxiety, and stress, we controlled these indicators using Depression, Anxiety and Stress Scales (DASS, Lovibond & Lovibond, 1995, adapted in Latvia by Vanags & Raščevska, 2017). This measurement tool is based on Clark and Watson (1991) tripartite model of anxiety and depression. This model helps

to overcome the symptomatic overlap of depression and anxiety. The main idea of the model is that all symptoms of both concepts are divided into three groups: negative affect, positive affect, and physiological hyperarousal. Negative affect is the factor that is common to both anxiety and depression. In turn, physiological hyperarousal is unique to anxiety disorders, but low levels of positive affect to depression (Clark & Watson, 1991).

Including stress as an independent variable in our research could make clearer the relationships between different mental health constructs and burnout.

The next ongoing debate among scientists is about the constructs of burnout and engagement -the extent to which these are opposite or independent phenomena.

The work engagement concept emerged at the turn of the century and has attracted increasing interest from researchers over the last decade (Schaufeli & Witte, 2017). And in the very beginning Maslach and Leiter (1997) assumed that engagement is an opposite state of burnout and characterized by energy, involvement, and efficacy contrary to the three dimensions of burnout. This approach defines work-related psychological experience as a continuum between the burnout as negative endpoint and engagement as a positive pole (Leiter & Maslach, 2005). But soon Schaufeli and colleagues recognized that the absence of burnout does not necessarily mean the presence of engagement and vice versa, and they proposed to measure these two states by different instruments (Schaufeli, Salanova, González Romá, & Bakker, 2002b).

The Utrecht Work Engagement Scale (UWES) was developed, and the work engagement was defined as a positive, affective-motivational state of fulfilment that is characterized by work vigor, dedication, and absorption (Schaufeli *et alia*, 2002b). This approach towards engagement as a more independent state explains our affective states by two neurophysiological systems named as the typology of affective wellbeing of employees. One is the axis of pleasure-displeasure, but the other is the system of arousal (Bakker & Oerlemans, 2011). The burnout involves a low level of activation and displeasure, while work engagement -a high level of activation and a high level of pleasure (Schaufeli, 2013).

Correlational studies showed mixed results: strong negative correlations between the MBI and the UWES were found (Cole, Walter, Bedeian, & O'Boyle, 2012; Crawford, LePine, & Rich, 2010; Taris, Ybema, & Beek, 2017), as well as weak correlations (Mäkikangas, Feldt, Kinnunen, & Tolvanen, 2012).

The latest studies have concluded that work engagement is neither completely opposite, nor completely independent from the burnout phenomena (Leiter & Maslach, 2017), the two concepts can occur simultaneously, and that one is not necessarily the consequence or the opposite of the other (Bocéréan *et alia*, 2019). This approach is complemented by the idea that, the burnout and work engagement represent different experiences. Both constructs are related to job-related outcomes, but burnout is more strongly related to health outcomes, whereas work engagement -to motivational outcomes (Bakker, Demerouti, & Sanz Vergel, 2014).

The relationship between work engagement and the burnout subtypes was examined in several studies so far. Results showed, that the Underchallenged and Worn-Out subtypes shared a lack of engagement, but the Frenetic burnout subtype showed weak, but significant positive correlations with work engagement (Skudra & Stokenberga, 2019) or demonstrated itself as an engaged profile (Demarzo *et alia*, 2019).

As it was mentioned, the criterion used in Montero Marín conceptualization of the burnout is dedication to work (Montero Marín *et alia*, 2009), which is essentially in line with the work engagement concept, and we are expecting that this construct will

have predictive value for all burnout subtypes, but the direction of the relationship will be positive for Frenetic and negative for other two burnout subtypes.

Overall, to understand -which concepts are overlapping with a burnout and to what extent- we separately tested two conceptualizations of the burnout and mental health variables by multiple regression analysis. First, we looked for predictors of the burnout subtypes according to the Montero Marín model using DASS and UWES as independent variables. Second, we did the same for the Maslach burnout model. All social-demographics and occupational variables were controlled in the first step of regression. The additional questions for the study were: 1) What are the correlations between mental health measures and two burnout models –Maslach dimensions and Montero Marín subtypes? 2) Which mental health variables explain the variation of the Montero Marín burnout subtypes and which -Maslach burnout dimensions?

Method

Design and Participants

This study used a correlational and multivariative design. The sample of employees from different Latvian organizations was multi-occupational (*N*= 394). Respondents represented different occupational fields. The biggest group were employees from the health and social care field (24%). Seventeen percent were employees from the education field, 14% from IT and telecommunications, 10% from construction, 6% from wholesale and retail, and 5% from the finance and insurance field. Private enterprises and state or municipal institutions were represented pretty much the same, 55% and 42% accordingly. The biggest part of the participants were specialists (69%) or mid-level managers (23%). Seven per cent of participants were indicated as top managers. Almost 79% of respondents were females and the mean age of participants was 40.2 years (*SD*= 10.85). The youngest participant was 18 years old, but the oldest –73. The mean number of working hours per week was 38 with variance from 6 to 100 hours. One third of participants indicated that they are working less than the official maximum of a normal working week, i.e. less than 40 hours per week. Average work experience was 8.9 years with wide variance from several months to 55 years. This study respondents pointed out low absenteeism, only 3.5% of employees reported absence from work more than 20 days because of illness during last 3 month, but around 60% of respondents reported no absent days. In the perspective of one year, 36% had no absent days, but 35% missed 2-7 working days during the past year, while 7% were absent 30 or more days.

Instruments

Burnout Clinical Subtype Questionnaire (BCSQ-36; Montero Marín & García Campayo, 2010). BCSQ-36 has been developed to measure the alternative conceptualization of the burnout. It consists of 36 items, 12 items for each subtype. All subtypes have three subscales (4 items each). The Frenetic subtype scale is formed of three subscales: Ambition subscale (e.g.,, "I am ambitious to obtain important results in my work"); Overload subscale (e.g.,, "I neglect my personal life when I pursue important achievements in my work"); Involvement subscale (e.g.,, "If I don't achieve the expected result in my work, I try harder to achieve it"). The Underchallenged burnout subtype scale consists of Indifference subscale (e.g., "I'm not enthusiastic about my work"), Lack of Development subscale (e.g., "I feel that my work is an obstacle to the development of my abilities"), and Boredom subscale (e.g., "I am unhappy with my work because the tasks involved are monotonous"). The Worn-Out burnout subtype scale includes: Lack

of Acknowledgement subscale (e.g., "Professional recognition doesn't depend on efforts made at work"), Neglect subscale (e.g., "When things at work don't turn out as well as they should, I stop trying"), and Lack of Control subscale (e.g., "I feel the results of my work are beyond my control"). Respondents were asked to rate their degree of agreement with each of the items using the Likert-type scale with 7 response options, scored from 1 (totally disagree) to 7 (totally agree). Cronbach's alpha coefficients where .84 for Frenetic subtype, .92 for Underchallenged subtype, and .87 for Worn-Out subtype (Montero Marín & García Campayo, 2010). We used Latvian version of the BCSQ-36, where for the Frenetic, Underchallenged, and Worn-Out subtype Cronbach's alphas was .89, .94, and .89 accordingly (Abeltina *et alia*, 2020).

Maslach Burnout Inventory General Survey (MBI-GS; Maslach, Jackson, & Leiter, 1996). The MBI-GS is a scale formed by 16 items grouped into three dimensions. 5 items in the Exhaustion dimension (e.g., "I feel tired when I get up in the morning and have to face another day on the job"), 5 items in the Cynicism dimension (e.g., "I have become less enthusiastic about my work"), and 6 items in the Professional Efficacy dimension (e.g., "I deal very effectively with the problems of my work"). Subjects' answers obtained using a Likert-type scale with 7 options, scored from 0 (never) to 6 (every day). Cronbach's alpha coefficients ranging from .84 to .90 for Exhaustion, .74 to .84 for Cynicism, and from .70 to .78 for Professional Efficacy (Leiter & Schaufeli, 1996). In this study the Latvian language version was used (Caune, 2004), where Cronbach's alpha coefficients were .83 for Exhaustion, .69 for Cynicism, and .78 for Professional Efficacy.

Utrecht Work Engagement Scale 9 item version (UWES-9; Schaufeli, Bakker, & Salanova, 2006). The UWES-9 is a self-report instrument that includes the Vigor (e.g., "At my work, I feel bursting with energy"), Dedication (e.g., "I am enthusiastic about my job"), and Absorption (e.g., "I am immersed in my work") dimensions and each dimension is covered by three items (Schaufeli & Bakker, 2003). A Likert-type scale with 7 options, scored from 0 (never) to 6 (always / every day) is used to express one's feelings about their job. Cronbach's alpha coefficient was .93 for total UWES-9 scale in original study (Schaufeli & Bakker, 2003) and .92 in Latvian sample (Kronberga, 2014).

Depression, Anxiety and Stress Scales (DASS-42; Lovibond & Lovibond, 1995). The DASS-42 is a 42 item self-report instrument with three scales: The Depression Scale, the Anxiety Scale, and the Stress Scale. Each of these three scales contains 14 items, divided into subscales of 2-5 items. The Depression scale measures hopelessness, self-deprecation, dysphoria, devaluation of life, lack of interest/involvement, anhedonia, and inertia (e.g., "I couldn't seem to experience any positive feeling at all"). The Anxiety scale assesses situational anxiety, autonomic arousal, skeletal muscle effects, and the subjective experience of anxious affect (e.g., I was aware of dryness of my mouth"). The Stress scale consists of items measuring chronic non-specific arousal -difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient (e.g., "I found myself getting upset by quite trivial things"). A Likert-type scale with 4 options, scored from 0 (did not apply to me at all) to 4 (applied to me very much / most of the time), is used to point severity or frequency to which subjects have experienced each state over the past week. Scores for all scales are calculated by summing the scores for the relevant items. TThe DASS is based on a dimensional conception of psychological disorder, but it has recommended cut-offs for conventional severity categories: "normal", "moderate", and "severe". We used the Latvian version of the DASS-42 in this study (Vanags & Raščevska, 2017). Internal consistency was good and Cronbach's alpha coefficients were .92 for Depression Scale (in original study .91), .86 for Anxiety Scale (in original study .84), and .91 for Stress Scale (in original study .90) (Lovibond & Lovibond, 1995; Vanags & Raščevska, 2017).

Socio-demographical questions was in the end of this survey and obtained information about participant's sex, age, relationship status, education, occupational field and sector, work experience, work position, working hours per week, and work absenteeism during the last three-month and the last year.

Procedure

Recruitment of the participants was done via social networks and traditional electronic media (e.g.,, Facebook and Latvian news portal delfi.lv). The study was conducted from February to May 2018. Results where anonymously collected by *Google Survey Forms* and the measurements were obtained by a self-reported online questionnaire. A cover letter in the beginning of the survey explained the purpose of the study with indication that the answers would be anonymous and treated confidentially. Researchers' affiliation and their contact information were highlighted also.

Data Analysis

Descriptive statistics were used to calculate means and standard deviation (*SD*). Since some variables did not correspond to the normal distribution, Spearman's correlation analyses were used to investigate relationships among UWES-9 and DASS-42 subscales, MBI dimensions and BCSQ-36 subtypes. The interpretation of correlation was based on Evans (1996) guideline that r= .00 to .19 as very weak, r= .20 to .39 as weak, r=.40 to .59 as moderate, r= .60 to .79 as strong, but r= .80 to 1.0 as very strong correlation.

Multiple linear regression analysis with stepwise method (p for entry 0.05, p for removal 0.10) was used in order to find predictive factors associated with each burnout clinical subtype in BCSQ-36 and tree dimensions of MBI-GS. Adjusted regression coefficients with standard errors were computed from the results of the linear regression analyses. Tolerance value and Variance Inflation Factor was used to check the variables that entered into the models for multicollinearity. No problems of multicollinearity were diagnosed (for all independent variables that entered into the models the tolerance value was more than 0.2 and the VIF was less than 10). Also, standardized regression coefficients were performed as a measure of the effect of the predictive variables. Additionally, *Adjusted R squared* was reported as the percent of the variance explained by the model. *Adjusted R squared* were used to overcome the problem with false increase of *R-squared*, because of the addition of more variables, even if they do not have any relationship with the output variables. Independent variables entered in the model for BCSQ-36 subtypes and MBI dimensions were socio-demographics, DASS subscales, and UWES total score. Since the three dimensions of the UWES are strongly correlated, they weren't used in the multivariate regression analyses in order to avoid problems with multicollinearity. Instead, the total score of the UWES-9 were preferred as it is recommended by the authors of the scale (Schaufeli & Bakker, 2004). All DASS subscales were used based on measurement development principle. Scale items were created using Simultaneous Multi-Scale Dimensioning, which is used to design a measurement tool for various empirically related, but conceptually separable dimensions and at the same time striving to achieve maximum possible discrimination between scales (Lovibond & Lovibond, 1995; Vanags & Raščevska, 2017).

To understand the predictive value of mental health variables more clearly, we controlled sociodemographic factors in each multiple regression analysis. We included a set of six demographical and occupational factors, which have found to be related with burnout in previous studies (e.g.,, Purvanova & Muros, 2010; Ybema, Smulders, & Bongers, 2010; Montero Marín *et alia*, 2011a; Llorent & Ruiz Calzado, 2016; Marchand *et alia*, 2018; Demarzo *et alia*, 2019; Abeltina *et alia*, 2020), specifically: sex, age, relationship status (dichotomic scale), working experience, position at work (specialist or manager), and working hours. The data analysis was performed using the SPSS version 22 (IBM Corp, 2013).

RESULTS

At first, descriptive analysis was conducted (Table 1). The internal consistency of the BCSQ-36, MBI-GS, DASS-42 scales, and total score of UWES-9 was examined by computing a Cronbach's alpha coefficient. In all cases Cronbach's alpha reached a value larger than .80 and is considered satisfactory (Tabachnik & Fidell, 2013).

Table 1. Descriptive Statistics for BCSQ-36, MBI-GS, DASS-42 and UWES-9 Scales and Socio-demographics.

		M	*Md*	*SD*	Cronbach's α
BCSQ-36	Frenetic	56.74	57.00	11.63	.89
	Underchallenged	32.53	29.00	15.82	.94
	Worn-Out	35.97	35.00	12.46	.89
MBI-GS	Exhaustion	2.97	3.00	1.41	.89
	Cynicism	2.55	2.40	1.43	.83
	Professional Efficacy	4.51	4.67	.97	.81
DASS-42	Depression	26.15	21.00	22.47	.96
	Anxiety	22.53	18.00	19.07	.94
	Stress	36.21	36.50	22.64	.96
Total UWES-9		12.12	12.33	3.16	.92
Socio-demographics*	Age	40.20	40.00	10.85	
	Working hours per week	39.29	40.00	19.39	
	Work experience (in years)	8.93	6.00	8.52	

Notes: *= Age, working hours per week and work experience was measured with a single item each. Sex, relationship status and position at work were measured as dichotomic; *M*= Mean; *Md*= Median; *SD*= Standard Deviation;.

The next step was correlational analysis. All three burnout subtypes from BCSQ-36 and all three burnout scales from MBI-GS showed significant correlations with depression, anxiety, stress, and work engagement (Table 2).

Table 2. Spearman's Correlation Coefficients Between BCSQ-36, MBI-GS, DASS-42 and UWES-9.

		DASS-42			UWES-9			
		Depression	Anxiety	Stress	Vigor	Dedication	Absorption	TEs
BCSQ-36	Frenetic	.17**	.29**	.27**	.13*	.21**	.34**	.24**
	Ambition	-.04	.06	.04	.25**	.34**	.35**	.34**
	Overload	.33**	.40**	.39**	-.04	.02	.19**	.06
	Involvement	.09	.20**	.29**	.16**	.21**	.36**	.27**
	Underchallenged	.48**	.34**	.36**	-.49**	-.67**	-.54**	-.64**
	Indifference	.47**	.31**	.34**	-.56**	-.69**	-.62**	-.70**
	Lack of development	.41**	.30**	.32**	-.41**	-.61**	-.46**	-.56**
	Boredom	.45**	.34**	.34**	-.41**	-.58**	-.47**	-.55**
	Worn-Out	.59**	.52**	.53**	-.52**	-.52**	-.45**	-.56**
	Lack of Acknowledgement	.51**	.43**	.44**	-.46**	-.46**	-.38**	-.49**
	Neglect	.43**	.33**	.34**	-.45**	-.43**	-.48**	-.50**
	Lack of control	.54**	.53**	.53**	-.42**	-.42**	-.33**	-.44**
MBI-GS	Exhaustion	.62**	.60**	.61**	-.49**	-.42**	-.25**	-.44**
	Cynicisms	.63**	.52**	.54**	-.52**	-.58**	-.43**	-.58**
	Professional Efficacy	-.43**	-.29**	-.30**	.53**	.57**	.51**	.59**

Notes: *= p <.05; **= p <.01; TEs= Total Engagement score.

Among burnout subtypes measured by BCSQ-36, Worn-Out subtype correlated with depression, anxiety, and stress stronger than the others and showed moderate positive correlations. The Underchallenged subtype was related in a weak and moderate level, and correlations with the Frenetic subtype was weak or very weak. The Ambition subscale from Frenetic burnout subtype showed no significant correlations with DASS-42 subscales.

Correlations with work-engagement also allows distinguishing three burnout subtypes (BCSQ-36). The Underchallenged subtype showed strong negative correlation and the Worn-Out subtype –moderate negative correlations, but the Frenetic subtype was related with work-engagement in a positive way. This positive correlation was weak, but still significant.

MBI-GS correlations with UWES and DASS scales were as expected. All MBI-GS scales correlated with all DASS-42 scales in a significant way. Strong positive correlations were between Exhaustion dimension and all DASS-42 scales, Cynicism correlated from a moderate to strong level. Also, Professional Efficacy correlated with all DASS scales, but these correlations were weak or moderate, and negative. Regarding to the UWES-9, Exhaustion and Cynicism scales correlated moderately in a negative way, but Professional Efficacy in a positive (also moderate correlation).

The third step was multiple regression analysis. As mentioned above, demographic and occupational factors were included into the multiple regression analysis by enter method, and further stepwise regression method was used for depression, anxiety, stress, and work engagement indicators to explore relationships with burnout.

Three different models were generated by the stepwise method for the Frenetic burnout subtype (Table 3). The most appropriate model (R^2_{adj}= .30, $F(9, 384)$= 19.83, p <.01) explains 30% of the variance. Anxiety (β= .18), work engagement (β= .41) and

Table 3. Results of the Multiple Linear Regression Analyses for BCSQ-36 Frenetic Subtype Scale as Dependent Variable (N= 394).

Independent variable	*B*	*SE B*	β	*F*	Adjusted R^2	ΔR^2	*p*
1st step[1]				8.41	.10	.12	.000
Sex	.71	1.38	.03				
Age	-.08	.06	-.08				
Position at work (specialist or manager)	6.07	1.24	.24**				
Work experience	-.03	.08	-.02				
Relationship status (yes or no)	1.29	1.36	.05				
Working hours per week	.19	.04	.23**				
2nd step				12.20	.17	.07	.000
Sex	.36	1.3	.01				
Age	-.08	.06	-.08				
Position at work (specialist or manager)	6.13	1.19	.24**				
Work experience	-.05	.08	-.04				
Relationship status (yes or no)	1.59	1.32	.06				
Working hours per week	.16	.04	.19**				
DASS Anxiety Scale	.16	.03	.26**				
3rd step				20.55	.29	.12	.000
Sex	-.80	1.24	-.03				
Age	-.10	.06	-.09				
Position at work (specialist or manager)	4.76	1.12	.19**				
Work experience	-.07	.072	-.05				
Relationship status (yes or no)	1.05	1.22	.037				
Working hours per week	.16	.04	.19**				
DASS Anxiety Scale	.24	.03	.40**				
UWES total score	1.40	.17	.38**				
4th step				19.83	.30	.02	.000
Sex	-1.21	1.23	-.04				
Age	-.09	.06	-.07				
Position at work (specialist or manager)	4.57	1.10	.18**				
Work experience	-.05	.07	-.04				
Relationship status (yes or no)	1.10	1.21	.04				
Working hours per week	.14	.04	.17**				
DASS Anxiety Scale	.11	.05	.18*				
UWES total score	1.51	.18	.41**				
DASS Stress Scale	.14	.05	.28**				

Notes: [1]= In the first step Enter method was used; B= Unstandardized Beta; *= p <.05; **= p <.01; *SE B*= Standard error for Unstandardized Beta.

stress (β= .28) were significant predictors of the Frenetic subtype. The Depression scale was excluded from the models. Sociodemographic factors explained 10% of the total Frenetic subtype variance (two factors reached significance level: being a manager and more working hours per week).

The 47% of the Underchallenged burnout subtype variance is explained by the 3rd model of the multiple linear regression (R^2_{adj}= .47, F(8, 385)= 45.35, p <.01) (Table 4). Significant predictors of the Underchallenged burnout subtype were work engagement in the reverse way (β= -.55) and depression (β= .20), with controlled sociodemographic factors, which alone explained 4% of the variance (only being a specialist was significant predictor on the first step). Anxiety and stress variables were excluded.

Table 4. Results of the Multiple Linear Regression Analyses for BCSQ-36 Underchallenged Subtype Scale as Dependent Variable (N= 394).

Independent variable	*B*	*SE B*	β	*F*	Adjusted R^2	ΔR^2	*p*
1st step[1]				4.01	.04	.06	.000
Sex	-4.62	1.94	-.12				
Age	-.14	.09	-.09				
Position at work (specialist or manager)	-5.00	1.73	-.15**				
Work experience	-.04	.11	-.02				
Relationship status (yes or no)	-2.93	1.91	-.08				
Working hours per week	.06	.06	.05				
2nd step				46.64	.45	.40	.000
Sex	-2.40	1.48	-.06				
Age	-.10	.07	-.07				
Position at work (specialist or manager)	-1.73	1.33	-.05				
Work experience	-.01	.09	-.01				
Relationship status (yes or no)	-1.29	1.46	-.03				
Working hours per week	.02	.04	.02				
UWES total score	-3.23	.19	-.65**				
3rd step				45.35	.47	.03	.000
Sex	-3.02	1.45	-.08				
Age	-.10	.07	-.07				
Position at work (specialist or manager)	-2.06	1.30	-.06				
Work experience	-.01	.08	-.01				
Relationship status (yes or no)	-.59	1.43	-.02				
Working hours per week	-.01	.04	-.01				
UWES total score	-2.73	.22	-.55**				
DASS Anxiety Scale	.14	.03	.20**				

Notes:[1]= In the first step Enter method was used; *B*= Unstandardized Beta; **= p <.01; *SE B*= Standard error for Unstandardized Beta.

Engagement alone explained 40% of the variance and has a negative predictive relationship to the outcome. Individuals who scored higher on work engagement were predicted to score lower on Underchallenged burnout subtype. Adding the depression on the 3rd step of the regression analysis explained additionally 3% of the variance.

Along with controlled sociodemographic factors, depression (β= .23), work engagement (β= -.36) and anxiety (β= .21) together explained 47% of the Worn-Out subtype (R^2_{adj}= .47, F(9, 384)= 39.95, p <.01) (Table 5). Depression alone predicted 33%. Work engagement predicted lower Worn-Out scores, similarly as in the case of the Underchallenged subtype. Stress was excluded from models. Sociodemographic factors explained 4% of the total Worn-Out subtype variance (the significant predicting factor was position at work: being a specialist, more working hours were significant only on the first step of analysis).

All mental health variables together with work engagement explained 46% of MBI-GS Exhaustion (R^2_{adj}= .46, F(10, 383)= 34.20, p <.01). Sociodemographic factors were controlled and explained 3% of total variance (more working hours meant higher scores on Exhaustion scale, and relationship status factor reached a significant level on

Table 5. Results of the Multiple Linear Regression Analyses for BCSQ-36 Worn-Out Subtype Scale as Dependent Variable (*N*= 394).

Independent variable	*B*	*SE B*	*β*	*F*	Adjusted R^2	ΔR^2	*p*
1st step[1]				3.51	.04	.05	.000
Sex	-.34	1.53	-.01				
Age	.03	.07	.03				
Position at work (specialist or manager)	-4.19	1.37	-.16**				
Work experience	-.07	.09	-.05				
Relationship status (yes or no)	-2.47	1.51	-.08				
Working hours per week	.18	.04	.13*				
2nd step				34.64	.38	.33	.000
Sex	-.99	1.24	-.03				
Age	.03	.06	.03				
Position at work (specialist or manager)	-3.77	1.12	-.14**				
Work experience	-.06	.07	-.04				
Relationship status (yes or no)	-.18	1.23	-.01				
Working hours per week	.02	.04	.03				
DASS Depression Scale	.33	.02	.59**				
3rd step				42.53	.46	.08	.000
Sex	.14	1.16	.00				
Age	.05	.05	.04				
Position at work (specialist or manager)	-2.52	1.04	-.09*				
Work experience	-.05	.07	-.03				
Relationship status (yes or no)	-.18	1.15	-.01				
Working hours per week	.04	.03	.04				
DASS Depression Scale	.23	.03	.47**				
UWES total score	-1.36	.17	-.34**				
4th step				39.95	.47	.01	.000
Sex	.06	1.15	.00				
Age	.05	.05	.04				
Position at work (specialist or manager)	-2.54	1.03	-.09*				
Work experience	-.07	.07	-.05				
Relationship status (yes or no)	-.59	1.14	-.02				
Working hours per week	.04	.03	.05				
DASS Depression Scale	.13	.04	.23**				
UWES total score	-1.41	.17	-.36**				
DASS Anxiety Scale	.14	.04	.21**				

Notes:[1]= In the first step Enter method was used; *B*= Unstandardized Beta; *= $p < .05$; **= $p < .01$; *SE B*= Standard error for Unstandardized Beta.

some steps) (Table 6). Other factors were added to stepwise regression models in such sequence: depression, work engagement, stress, and anxiety. Depression alone explained 36% of the variance. Adding in the model, work engagement contributed an additional 3%. Individuals scored higher on work engagement predicted to score lower on the Exhaustion dimension of the MBI. Stress and anxiety explained 3% and 1% accordingly.

Depression and work engagement together predicted 50% of the Cynicism (R^2_{adj}= .50, $F(8, 385)$= 50.94, $p < .01$). In this model the best predictors were depression (β= .43) and work engagement in the reverse way (β= -.40) (Table 7). Depression alone explained 38%. Adding in the model, work engagement contributed an additional 11%. Work engagement predicted lower scores in MBI-GS Cynicism dimension. Sociodemographic factors were controlled, and accordingly to the results they do not provide significant effort (p= .052). Anxiety and stress were excluded from the models.

33% of Professional efficacy was explained by work engagement and depression (R^2_{adj}= .33, $F(8, 385)$= 24.66, $p < .01$) (Table 8). Higher work engagement predicted higher professional efficacy, but higher scores in depression predicted lower results in the MBI-GS Professional Efficacy scale. This scale in MBI-GS is reverse scale, which means that higher burnout rates show respondents who have lower scores in this scale.

Work engagement was the best predictor of the professional efficacy in this model (β= .50). Work engagement alone explained 30% of the variance, but depression in the 3rd step gave another 1% of the explanation. Sociodemographic factors were controlled, but didn't reach statistical significance (p=. 060).

Table 6. Results of the Multiple Linear Regression Analyses for BCSQ-36 Exhaustion Dimension as Dependent Variable (*N*= 394).

Independent variable	*B*	*SE B*	*β*	*F*	Adjusted R^2	ΔR^2	*p*
1st step[1]				3.06	.03	.05	.006
Sex	.21	.17	.06				
Age	.00	.01	.01				
Position at work (specialist or manager)	.05	.16	.02				
Work experience	.00	.01	.02				
Relationship status (yes or no)	.02	.17	.01				
Working hours per week	.02	.01	.21**				
2nd step				37.92	.40	.36	.000
Sex	.13	.14	.04				
Age	.00	.01	.01				
Position at work (specialist or manager)	.10	.12	.03				
Work experience	.01	.01	.03				
Relationship status (yes or no)	.29	.14	.09*				
Working hours per week	.01	.00	.10*				
DASS Depression Scale	.04	.00	.62**				
3rd step				37.55	.43	.03	.000
Sex	.21	.14	.06				
Age	.00	.01	.02				
Position at work (specialist or manager)	.18	.12	.06				
Work experience	.01	.01	.03				
Relationship status (yes or no)	.29	.13	.09*				
Working hours per week	.01	.00	.11*				
DASS Depression Scale	.03	.00	.51**				
UWES total score	-.09	.02	-.21**				
4th step				37.24	.45	.03	.000
Sex	.16	.13	.05				
Age	.00	.01	.02				
Position at work (specialist or manager)	.16	.12	.05				
Work experience	.01	.01	.03				
Relationship status (yes or no)	.23	.13	.07				
Working hours per week	.01	.00	.10*				
DASS Depression Scale	.02	.00	.27**				
UWES total score	-.09	.02	-.21**				
DASS Stress Scale	.02	.00	.30**				
5th step				34.20	.46	.01	.000
Sex	.17	.13	.05				
Age	.00	.01	.02				
Position at work (specialist or manager)	.17	.12	.05				
Work experience	.00	.01	.02				
Relationship status (yes or no)	.22	.13	.06				
Working hours per week	.01	.00	.10*				
DASS Depression Scale	.01	.01	.21*				
UWES total score	-.10	.02	-.22**				
DASS Stress Scale	.01	.01	.20*				
DASS Anxiety Scale	.01	.01	.16*				

Notes:[1]= In the first step Enter method was used; *B*= Unstandardized Beta; *= $p < .05$; **= $p < .01$; *SE B*= Standard error for Unstandardized Beta.

Table 7. Results of the Multiple Linear Regression Analyses for BCSQ-36 Cynicism Dimension as Dependent Variable (*N*= 394).

Independent variable	*B*	*SE B*	*β*	*F*	Adjusted R^2	ΔR^2	*p*
1st step[1]				2.11	.02	.03	.052
Sex	.05	.18	.01				
Age	-.00	.01	-.02				
Position at work (specialist or manager)	-.15	.16	-.05				
Work experience	.01	.01	.08				
Relationship status (yes or no)	-.22	.18	-.06				
Working hours per week	.02	.01	.15**				
2nd step				37.91	.40	.38	.000
Sex	-.03	.14	-.01				
Age	-.00	.01	-.02				
Position at work (specialist or manager)	-.10	.13	-.03				
Work experience	.01	.01	.09				
Relationship status (yes or no)	.06	.14	.02				
Working hours per week	.00	.00	.03				
DASS Depression Scale	.04	.00	.63**				
3rd step				50.94	.50	.11	.000
Sex	.11	.13	.03				
Age	-.00	.01	-.01				
Position at work (specialist or manager)	.06	.12	.02				
Work experience	.02	.01	.09				
Relationship status (yes or no)	.06	.13	.02				
Working hours per week	.01	.00	.05				
DASS Depression Scale	.03	.00	.43**				
UWES total score	-.18	.02	-.40**				

Notes:[1]= In the first step Enter method was used; *B*= Unstandardized Beta; **= $p < .01$; *SE B*= Standard error for Unstandardized Beta.

Table 8. Results of the Multiple Linear Regression Analyses for BCSQ-36 Professional Efficacy Dimension as Dependent Variable (*N*= 394).

Independent variable	*B*	*SE B*	*β*	*F*	Adjusted R^2	ΔR^2	*p*
1st step[1]				2.04	.02	.03	.060
Sex	.03	.12	.01				
Age	-.00	.01	-.01				
Position at work (specialist or manager)	.34	.12	.16**				
Work experience	.00	.01	.04				
Relationship status (yes or no)	.07	.12	.03				
Working hours per week	-.00	.00	-.04				
2nd step				26.96	.32	.30	.000
Sex	-.09	.10	-.04				
Age	-.00	.01	-.03				
Position at work (specialist or manager)	.17	.09	.08				
Work experience	.00	.01	.03				
Relationship status (yes or no)	-.02	.10	-.01				
Working hours per week	-.00	.00	-.02				
UWES total score	.17	.01	.56**				
3rd step				24.66	.33	.01	.000
Sex	-.07	.10	-.03				
Age	-.00	.01	-.03				
Position at work (specialist or manager)	.18	.09	.08				
Work experience	.00	.01	.03				
Relationship status (yes or no)	-.05	.10	-.02				
Working hours per week	.00	.00	.00				
UWES total score	.15	.02	.50**				
DASS Depression Scale	-.01	.00	-.12**				

Notes:[1]= In the first step Enter method was used; *B*= Unstandardized Beta; **= $p < .01$; *SE B*= Standard error for Unstandardized Beta.

Comparison of two burnout conceptualizations by the results of multiple linear regression is in the Table 9. All combinations of mental health factors and work engagement with predictive power mentioned above are represented here together.

Table 9. Comparison of Two Burnout Conceptualizations Explained by Mental Health Variables and Work Engagement (*N*= 394).

Model	Subtypes/ Dimensions	Predictive Variables[a]	Explained percentage of Variance		
			All factors[b]	Psychological factors[c]	Mental Health factors
BCSQ-36	Frenetic	Anxiety + Work engagement + Stress	30%	21%	9% (7% anxiety+2% stress)
	Underchallenged	(-) Work engagement + Depression	47%	43%	3% (depression)
	Worn-Out	Depression + (-) Work engagement + Anxiety	47%	42%	34% (33% depression+1% anxiety)
MBI-GS	Exhaustion	Depression + (-) Work engagement + Stress + Anxiety	46%	43%	40% (36% depression+3% stress+1% anxiety)
	Cynicism	Depression + (-) Work Engagement	50%	49%	38% (depression)
	Professional efficacy (in reverse way)	(-) Work engagement + Depression	33%	31%	1% (depression)

Notes: [a]= Mental health and work engagement variables included in stepwise linear regression (sociodemographic factors were controlled in all models); [b]= Together with controlled sociodemographic factors; [c]= Excluded sociodemographic factors, percentages are obtained by summing ΔR^2 indicators.

DISCUSSION

Following the aim of the study we investigate the role of depression, anxiety, stress and work engagement in the prediction of burnout sub-variables in different conceptual models and which sub-variable they explained the most.

The reliability of all used scales was reasonably high and allowed to make a valid analysis.

As expected, all three burnout subtypes from BCSQ-36 and all three burnout dimensions from MBI-GS showed significant correlations with depression, anxiety, stress, and work engagement. That is consistent with the results of other studies that show significant correlations between these constructs (Koutsimani *et alia*, 2019; Pasqualucci *et alia*, 2019; Montero Marín *et alia*, 2016b; Mousavi, Ramezani, Salehi, Khanzadeh, & Sheikholeslami, 2017; Demarzo *et alia*, 2020; Nahrgang, Morgeson & Hofmann, 2011).

Further investigation was done using multiple regression analysis to find out the most important predictive variables explaining each of the burnout models. When sociodemographic and occupational factors were controlled, stepwise multiple regression analysis showed that all mental health constructs (depression, anxiety, stress) and work engagement differently predict the burnout sub-variables. These factors in different combinations contributed to burnout with respect to both conceptualizations. All models had strong predictive power (explained variance from 30% to 50% including sociodemographic factors).

Although sociodemographic factors were not the main focus of this study, we would like to highlight some interesting outcomes. Overall, sociodemographic factors explained only a small part of the variation (from 2% as not significant and 3%, and 4% as significant), but in the case of the Frenetic subtype, these factors explained 10% of the variation. More working hours and managerial position at work affected burnout rates. An in-depth study of these factors may be carried out in future studies continuing the investigation started previously (Montero Marín *et alia*, 2011a; Wickramasinghe & Wijesinghe, 2018).

It should be mentioned that our results confirmed the idea that work engagement was an important predictive factor in all regression models for all burnout subtypes. It contributed to the Frenetic burnout subtype in a positive way, but to both the Underchallenged and Worn-Out in a negative way. Depression was an important predictor of Underchallenged and Worn-Out subtypes but didn't show up in the explanation of the Frenetic subtype. These results go along with the original idea of the Frenetic subtype as very active and involved in work tasks with great ambitions and an inability to tolerate mistakes (Montero Marín & García Campayo, 2010). As it was mentioned above, the Frenetic subtype was the only one variable, where sociodemographic factors showed important predictive power (10%).

Depression as a predictor was in all models for MBI-GS dimensions, as well as work engagement. Depression predicted higher scores in Exhaustion and Cynicism and reduced scores in Professional Efficacy, but work engagement in vice versa way –higher engagement lead to the higher scores in Professional Efficacy and lower scores in Exhaustion and Cynicism dimensions. The MBI-GS Cynicism dimension was explained most of all by depression (38%), but Exhaustion was the only dimension which was predicted by all mental health constructs used in this study (depression, anxiety, stress) and work engagement along with sociodemographic. Depression as predictor for MBI-GS Exhaustion dimension appeared in previous studies (Golonka, Mojsa-Kaja, Blukacz, Gawłowska, & Marek, 2019). Also, our study was consisting with findings, where current depressive symptomatology was the strongest predictor of all three burnout dimensions, but having ever experienced a depressive episode, as well as a history of depression in close family members, predicted current symptoms of Exhaustion and Cynicism (Nyklíček & Pop, 2005).

Hence depression and work engagement appeared as predictors in all MBI-GS dimensions and in two BCSQ-36 subtypes –Underchallenged and Worn-Out. Depression was not a predictive factor of the BCSQ-36 Frenetic subtype (in a model that includes stress and anxiety at the same time). Clark and Watson (1991) tripartite model of anxiety and depression was helpful in this case and overcame the symptomatic overlap of the depression and anxiety. Anxiety appeared in the explanation of the Frenetic and Worn-Out BCSQ-36 subtypes. Stress was as a predictor only in the Frenetic subtype in the BCSQ-36 model. Anxiety and stress didn't appear as predictor in the Cynicism and Professional Efficacy dimensions.

Overall, work engagement has greater predictive value of the burnout in the Montero Marín model, but the mental health factors play a more dominant role in the Maslach model, except the Professional Efficacy dimension.

From the first glance it seems that Underchallenged subtype is well recognized by classical burnout conceptualization. Two MBI-GS dimensions Cynicism and Professional Efficacy in reverse way is explained by the same mental health factors and in similar power as the Underchallenged Subtype. Work engagement in a reverse way and depression were the best predictors for all of them. However, variance explained by depression was small, only 3% in the Worn-Out case. Work engagement was the main explaining factor. That means interventions focused on the reducing the symptoms of depression may turn out ineffective for Underchallenged employees. Our results are consistent with findings in German student sample, whereas Underchallenged students could not clearly be distinguished with the MBI student version (Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002a) and only the BCSQ short student version (Montero Marín *et alia*, 2011b) identified them (Bauernhofer *et alia*, 2019).

The Worn-Out Subtype seems close to the Exhaustion dimension, explained by depression and work engagement in the reverse way, and anxiety. Only the stress factor additionally has predictive power in the case of the Exhaustion dimension. 33% of the Worn-Out subtype variance was explained by depression. And it could also be the reason that these employees are more visible to professionals, who are identifying burnout individuals by a classical model. This result is compatible with person-oriented approach study, where severely Worn-Out profile detected with the BCSQ-12-SS (Montero Marín *et alia*, 2012b) was similar to the burned-out profile detected with the MBI-SS (Bauernhofer *et alia*, 2019). Although a group with mildly Worn-Out students was not found with the MBI-SS in this study (Bauernhofer *et alia*, 2019).

It can be assumed, that Frenetic individuals are burned out, but not recognized in traditional conceptualization by MBI-GS. Our investigation shows that the Frenetic subtype could be explained by a combination of high engagement (11%), high anxiety (7%), and high stress (2%). But the great part of the variance is still related with unknown factors. Some part of the variance is explained by more working hours and being a manager (10%), suggesting these factors to be informative to recognize those under Frenetic burnout risk. Nevertheless, it's important to note, that these individuals are engaged in the work activities, but still are burning out. Previous study, which used a person-oriented approach to investigate distinct burnout risk groups in student sample found similarities in the Frenetic profile detected with the BCSQ-12-SS (Montero Marín *et alia*, 2012b) and severely Exhausted profile detected with the MBI-SS (Bauernhofer *et alia*, 2019). Perhaps our findings can be viewed under the assumption that the classical burnout model would rather describe a fully developed burnout syndrome, but the subtype model seems to show different pathways to the burnout and its early stages (Montero Marín *et alia*, 2016b).

Overlap with depression is a most popular critique for the burnout phenomena (Bianchi & Brisson, 2019) and it appears as predictor also in our research, not only in all MBI-GS dimensions, but also it emerged as a predictor for the Worn-Out subtype in the first place (but it explained only 3% of the variation) and also for the Underchallenged subtype on the second place (33% of the variation). But as it was mentioned, depression was not a predictor of the Frenetic subtype. These result goes along with a population-based Finnish study, where only half of the workers had depressive disorder along with burnout (Ahola *et alia*, 2005).

The results of this study indicate that the Montero Marín conceptualization of the burnout (Montero Marín & García Campayo, 2010) deals better with a problem of overlapping with depression and clearly shows the controversial nature of the relationships with work engagement. This conceptualization opens a wider view to the burnout by adding the Frenetic subtype –engaged and not depressed individuals who experience anxiety and stress. Combining it with a demanding work environment and low self-care habits make threats for their long-term well-being. This finding highlights a need for more broad screening for earlier signs of burnout and more individually tailored interventions (Montero Marín *et alia*, 2016a). Engagement very often is postulated as a positive antidote of burnout in classical burnout theories (Maslach *et alia*, 2001), but unfortunately in the case of the Frenetic subtype it makes them invisible for health care professionals and employers. Usually highly engaged people are served as an example to other workers, but not as individuals, who need help.

It could be that MBI-GS recognizes some burnout individuals too late or insufficiently. The alternative conceptualization on the other hand could give us the possibility to

recognize individuals at burnout risk early enough or coming by different trajectories. The question of whether these are different trajectories or stages of professional burnout is still open, as longitudinal studies are still missing. Further studies on the advantages and disadvantages of different conceptualizations should be done.

Results of this study confirmed the usefulness of the tripartite model of anxiety and depression in the burnout studies. Anxiety is predictive for the Frenetic subtype more than any other burnout subtype or dimension. It is possible that different manifestation of this affective model can be observed in different stages or trajectories of the burnout.

The present study has certain limitations. First, burnout, work engagement, depression, stress, and anxiety symptoms were self-reported, which could have introduced bias. In future research, it would be important seek solutions to reduce the possibilities of socially desirable responses. Second, voluntary participation could have introduced bias also. There is a higher means in the Frenetic subtype, than the other two subtypes in this sample. The nature of this profile – highly engaged and interested in work related activities individuals –may lead to the fact that these people participated more in the survey. To include a survey in the regular work-related assessments could be the solution for this limitation. Finally, the findings are the result of a cross-sectional research design. It means, that no causal conclusions could be drawn from the data and longitudinal studies are needed in the future.

Depression, anxiety, stress, and work engagement has some overlap with two different conceptualizations of burnout, but their explained variation does not exceed 50%. And we could assume independent variables and burnout as connected, but separate phenomena. Further studies should continue to investigate the unexplained part of the dispersion that predicts the burnout.

This study results shows that the extent of explained variation is similar in both models (BCSQ-36 and MBI-GS), however, these models are different in terms of the structure of the variables. Work engagement plays a larger role in the first model and depression in the second burnout model.

Accordingly, the results of this study indicate a greater role or overlap of depression in the classical Maslach burnout model.

The Montero Marín conceptualization of the burnout allows to identify a broader range of burnout related variety among employees, which may guide the development of individually suitable and effective interventions for different burnout subtypes.

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