Burnout Syndrome Among Health Care Students: The Role of Type D Personality

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Abstract
The aim of this study was to examine the effect of Type D personality, along with other personality traits (resilience and sense of coherence), on burnout syndrome and its counterpart, engagement, among students of nursing, midwifery, and psychology. A cross-sectional study was conducted on 97 university students (91.9% females; M age = 20.2 ± 1.49 years). A Type D personality subscale, School Burnout Inventory, Utrecht Work Engagement Scale, Sense of Coherence Questionnaire, and Baruth Protective Factor Inventory were used. Linear regression models, Student’s t test, and Pearson’s correlation analysis were employed. Negative affectivity, a dimension of Type D personality, was a significant personality predictor for burnout syndrome ($\beta = .54$; 95% CI = [0.33, 1.01]). The only significant personality predictor of engagement was a sense of coherence. Students who were identified as having Type D personality characteristics scored significantly higher on the burnout syndrome questionnaire ($t = −2.58$, $p < .01$). In health care professions, personality predictors should be addressed to prevent burnout.

Keywords
Type D personality, burnout syndrome, engagement, health care students, nursing, midwifery

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There is a long tradition of exploring the risk factors, possible pathways and promising prevention strategies for burnout syndrome among health care professionals. More recently, burnout syndrome among students has become of interest as it has significant influence on students’ well-being, academic achievement, and the quality of their professional preparation. Burnout syndrome is defined by a triad of emotional exhaustion, depersonalization, and a decreased sense of accomplishment that can occur among individuals who work with other people (Maslach, 1993). Salmela-Aro, Kiuru, Leskinen, and Nurmi (2009) proposed a similar concept of school-related burnout consisting of three factors: exhaustion due to school demands, a cynical and detached attitude toward one’s school, and feelings of inadequacy as a student. In their review on burnout syndrome among medical students, IsHak et al. (2013) found that, although burnout was originally thought to occur later in a medical career, a number of major multi-institutional studies have estimated that at least half of all medical students may be affected by burnout during their education. Galan, Sanmartin, Polo, and Giner (2011) showed that the occurrence of burnout syndrome increased significantly over time (comparing third and sixth years of the study) in a sample of Spanish medical students. Student burnout has been associated with dropout from school (Deary, Watson, & Hogston, 2003), could lead to decreased personal health and well-being (Dyrbye et al., 2010), and has been found to negatively influence students’ overall academic experience and their perceptions of stress (Stoliker & Lafreniere, 2015). Research studies that focus on personality predictors of burnout syndrome among students are scarce.

**Burnout Syndrome and Personality Factors**

Burnout syndrome is a complex phenomenon with a number of risk factors related to the organization of work as well as individual characteristics, such as personality traits or coping mechanisms. Extensive work overload, high emotional requirements at work, role conflict and role ambiguity, inadequate pay, a low sense of control, and a sense of injustice in work management are some of the most commonly known risk factors for burnout development (Bria, Baban, & Dumitrascu, 2012). The quality of social support was also identified as an important risk factor in this context (Bria et al., 2012; Mutkins, Brown, & Thorsteinsson, 2011). The lack of coping strategies (or a higher tendency to use maladaptive coping strategies when handling stressful situations) also contributes to burnout development (Montero-Marin, Prado-Abril, Piva Demarzo, Gascon, & Garcia-Campayo, 2014). Personality traits also seem to play a significant role in burnout etiology and management. Optimism, self-esteem, and internal locus of control have
been discussed in terms of their protective effects against burnout (Alarcon, Eschleman, & Bowling, 2009), similar to resilience and sense of coherence (van der Colff & Rothmann, 2009). The concept of resilience (the ability to withstand highly adverse life circumstances) and sense of coherence (characterized by a tendency to see the world as consistent, relatively predictable, understandable, and manageable) are largely overlapping constructs, in which both variables are defined in relation to the ability to cope with difficult life circumstances, an enhanced resistance to stress and a protective effect against burnout (Antonovsky, 1993; Baruth & Caroll, 2002; Skodova & Lajciakova, 2015). Empathy also seems to be an important protective personality factor as higher empathy and optimism levels were found to be associated with a lower burnout risk among medical students (Hojat, Vergare, Isenberg, Cohen, & Spandorfer, 2015).

Some studies have suggested a significant association between Type D personality and burnout syndrome and that Type D personality might be a possible risk factor for burnout. The results of a study by Ogińska-Bulik (2006) showed that higher levels of Type D personality characteristics were associated with worse mental health among health care professionals, higher burnout, and a perception of the workplace as more stressful. Similarly, a systematic review of research studies by Mols and Denollet (2010) showed a strong relationship between Type D personality characteristics and occupation-related problems, including higher burnout and more occupation-related stress. The study findings of Armon (2014) support a significant relationship between Type D characteristics and burnout syndrome and indicate the important mediating role of physical activity in this relationship.

Pedersen and Denollet (2003) explored Type D personality and found a highly increased risk of coronary heart disease and myocardial infarction among individuals with Type D personality characteristics.

Type D personality is characterized by an individual’s higher tendency to experience negative emotions and to suppress these emotions while avoiding social contact with other people. The concept of Type D (or distressed) personality is thus characterized by two factors: high negative affectivity and social inhibition. People with Type D personality may tend to experience more losses in life than others, and it is further characterized by impaired self-esteem, a lack of flexibility, and a reduced ability to cope with the load (Mols & Denollet, 2010).

The concept of work engagement describes a positive, fulfilling state of mind related to work that is characterized by vigor, dedication, and absorption. Key factors related to high engagement levels are high enthusiasm, feelings of meaningfulness at work, and sufficient energy. Whereas the impact of burnout syndrome on the quality of health care is negative, engagement is
positively related to higher job satisfaction, lower intentions to leave the job, and higher quality of health care provided (Schaufeli, Salanova, González-Roma, & Bakker, 2002; van Bogaert, van Heusden, Timmermans, & Franck, 2014). Work engagement is often defined as a counterpart to burnout syndrome. However, these two concepts are not direct opposites. More likely, both these characteristics have unique ways of influencing work-related characteristics as well as subjective well-being (Hakanen & Schaufeli, 2012).

**Purpose**

The aims of this study were (a) to explore whether there is a significant relationship between the following personality factors: Type D personality, resilience, sense of coherence, and levels of burnout syndrome and engagement among students of health care professions; (b) to examine whether Type D personality, resilience, and sense of coherence significantly predict the level of burnout syndrome among students; (c) to examine whether Type D personality, resilience, and sense of coherence significantly predict the level of engagement among students; and (d) to assess whether students with Type D personality characteristics differ in levels of burnout syndrome and engagement compared with students without Type D characteristics.

**Method**

**Research Design and Participants**

An ex post facto research design was employed to explore the research questions in this study. A convenient research sample of students was recruited that included 97 university students in the fields of psychology, nursing, and midwifery. Overall, 91.9% of respondents in the research group were women, and the average age was 20.2 years ($SD = 1.49$ years). Research data were collected over a 20-month period in 2013 to 2014. Data collection was carried out in a university setting, whereby students were asked to fill out questionnaires. The response rate was 82.1%. Students from the Slovak Republic participated in this study.

**Ethical Considerations**

Comprehensive information on the study’s aims, background, and their required involvement was provided to students participating in this study. Ethical approval for the research project was obtained from the local ethics committee at the university where the study was conducted.
Measures

Type D personality was assessed by the 14-item Type D Personality measure (DS14) designed by Denollet (2005). Type D personality is characterized by a higher tendency to experience negative emotions and by a lack of spontaneous expression of emotional experiences when interacting with other people (social inhibition). The DS14 is comprised of two subscales: negative affectivity and social inhibition. A score of 10 or more on both subscales identifies a person as having a Type D personality. In this study, to avoid strict labeling, students with a score of 10 or higher in one of the Type D personality subscales were referred to as individuals with a high level of Type D personality characteristics. The Cronbach's alpha of the DS 14 questionnaire was .80.

The School Burnout Inventory (SBI; Salmela-Aro et al., 2009), developed specifically for school environments, was used to assess burnout levels. The SBI is a short, nine-item questionnaire that focuses on self-evaluation of the most common burnout symptoms; higher scores indicate higher levels of burnout. The authors of the questionnaire proposed three subscales of the questionnaire: common exhaustion while completing schoolwork, cynicism about the meaning of school, and a sense of inadequacy at school. In the context of depressive symptoms, school engagement, and academic achievement, the SBI questionnaire showed high structural, item, and scale reliabilities and good concurrent validity (Salmela-Aro et al., 2009). The Slovak version of the questionnaire was first used in a study by Skodova and Lajciakova (2013, 2015) and has shown high reliability. In the present study, the Cronbach’s alpha for the SBI was .84.

A short version of the Utrecht Work Engagement Scale (UWES) was used to measure engagement for study. Originally, this scale was designed for research use in the work environment. For this study, all the questions were modified such that their meaning was related to study, for example, the work that is necessary to fulfill the requirements of study. The short version of the UWES contains nine items with answers scored on a 7-point Likert-type scale and a highest possible score of 54 points. A higher score indicates a higher level of engagement (Schaufeli, Bakker, & Salanova, 2006). The Cronbach’s alpha of the UWES in the current study was .88.

A 13-item version of Antonovsky’s (1993) Sense of Coherence Questionnaire (SOC) was used to measure the “sense of coherence” concept. This relatively stable personality trait refers to a person’s ability to cope with stressful situations; people with a high sense of coherence tend to perceive life as comprehensible, manageable, and meaningful. A higher score on the questionnaire indicates a higher sense of coherence and an ability to cope with stressful situations. Responses are measured on a 7-point scale and are
summed to a total score ranging from 13 to 91. The Slovak version of the questionnaire was first used in a study by Skodova and Lajciakova (2013, 2015) and has shown high reliability. In the present study, the Cronbach’s alpha for the SOC questionnaire was .77.

The concept of resilience was measured by the Baruth Protective Factor Inventory (BPFI). This measure is designed to identify the presence of positive protective factors regarding stress, which are understood as the key factors of resilience. Together, 16 items scored on a 5-point Likert-type scale cover the four subscales of resilience, as defined by the authors of the questionnaire: (a) an adaptable personality, (b) a supportive environment, (c) a lower level of stress, and (d) compensating experiences. The total score is between 16 and 80, and higher scores indicate a higher level of resilience, for example, a more resilient personality (Baruth & Caroll, 2002). The reliability (Cronbach’s α) of the BPFI in the current study was .84.

All research instruments used in this study were translated from the original English into Slovak using a back translation procedure by two independent language experts (Skodova & Lajciakova, 2013, 2015).

**Data Analysis**

Basic descriptive statistics were used to characterize the research sample. Linear regression was the main statistical method used in the study to explore Type D personality, resilience, and sense of coherence as possible predictors of students’ burnout syndrome and engagement levels. Burnout and engagement were entered as the outcome variables, while the Type D personality score, resilience, and sense of coherence were examined as predictor variables in the linear models. The students’ financial situations and types of study were entered as possible confounding variables. A Student’s t test was used for independent variables to show the differences in burnout and engagement between students with high and low Type D dimensions scores. A Pearson’s correlation analysis was also employed. All the statistical analyses were performed using IBM SPSS Statistics for Windows Version 22.0.

**Results**

Table 1 shows the basic demographic characteristics of the participants in the study. Most of the students were female, and the sample was highly homogeneous with regard to age ($M = 20.2, SD = 1.15$), with an equal distribution in the field of study. The majority of students described their financial situation as satisfactory, although 14.6% were experiencing financial strain. Economic
independence was rare in our sample; most of the students (94.8%) were living with their parents or family. Overall, 27.8% of students had a high score in the Type D personality questionnaire (a cutoff of 10 points or higher in one or both of the subscales). The mean values of the negative affectivity and social inhibition subscales of the Type D questionnaire were 10.77 (±6.18) and 9.64 (±6.55), respectively. The mean values of burnout syndrome and engagement in the overall research sample were 30.19 (±7.86) and 24.60 (±7.15), respectively. The mean (and SD) for resilience and sense of coherence were 60.87 (±6.8) and 57.55 (±9.92), respectively.

The Pearson’s correlation analysis found a significant positive association between burnout and the negative affectivity (NA) subscale of the Type D personality questionnaire (r = .53, p < .01). Both resilience and sense of coherence were negatively related to burnout levels (r = −.36 and r = −.39, respectively, p < .01), and sense of coherence was also positively associated with engagement (r = .26, p < .05). No significant relationship was found between burnout or engagement and the social inhibition subscale of the Type D questionnaire (Table 2).

The linear regression model showed that the only significant personality predictor for burnout syndrome was the negative affectivity subscale of the Type D questionnaire (β = .54, 95% CI = [0.33, 1.01]), while sense of

| Table 1. Basic Demographic Characteristics of the Research Sample. |
|-----------------|-----------------|-----------------|
| **Variable**    | **Total Sample n = 97** |
| Gender          | n (%)           |
| Male            | 4 (3.1)         |
| Female          | 93 (96.9)       |
| Field of study  |                 |
| Nursing/midwifery | 47 (48.5)     |
| Psychology      | 50 (51.5)       |
| Financial situation |             |
| Good or very good | 33 (34.4)     |
| Satisfactory    | 49 (51.0)       |
| Financial strain | 14 (14.6)      |
| Economic independence |             |
| Supported by parents | 91 (94.8) |
| Economically independent | 5 (5.2) |
| Type D personality |             |
| High level of Type D characteristics | 27 (27.8) |
| Low level of Type D characteristics | 70 (72.2) |
Table 2. Correlation Matrix With Pearson’s Correlation Coefficients for Key Study Variables.

<table>
<thead>
<tr>
<th></th>
<th>Engagement (r)</th>
<th>Negative Affectivity (r)</th>
<th>Social Inhibition (r)</th>
<th>Resilience (r)</th>
<th>Sense of Coherence (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout</td>
<td>−.27**</td>
<td>.53**</td>
<td>.09</td>
<td>−.36**</td>
<td>−.39**</td>
</tr>
<tr>
<td>Engagement</td>
<td>−.15</td>
<td>−.06</td>
<td>.13</td>
<td>.26*</td>
<td></td>
</tr>
<tr>
<td>Negative affectivity</td>
<td></td>
<td></td>
<td>−.27**</td>
<td>−.51**</td>
<td>−.68**</td>
</tr>
<tr>
<td>Social inhibition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resilience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.57</td>
</tr>
</tbody>
</table>

*Correlation significant at \(p \leq .05\). **Correlation significant at \(p \leq .01\).

Table 3. Linear Regression Models With the Effect of Type D and Other Personality Traits (Sense of Coherence and Resilience) on Burnout Syndrome.

<table>
<thead>
<tr>
<th>Variables</th>
<th>B Coefficient</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative affectivity</td>
<td>0.54</td>
<td>[0.33, 1.01]</td>
</tr>
<tr>
<td>Social inhibition</td>
<td>−0.15</td>
<td>[−0.42, 0.08]</td>
</tr>
<tr>
<td>Resilience</td>
<td>−0.15</td>
<td>[−0.45, 0.13]</td>
</tr>
<tr>
<td>Sense of coherence</td>
<td>0.06</td>
<td>[−0.17, 0.27]</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative affectivity</td>
<td>0.58</td>
<td>[0.38, 1.07]</td>
</tr>
<tr>
<td>Social inhibition</td>
<td>−0.16</td>
<td>[−0.44, 0.07]</td>
</tr>
<tr>
<td>Resilience</td>
<td>−0.11</td>
<td>[−0.42, 0.17]</td>
</tr>
<tr>
<td>Sense of coherence</td>
<td>0.06</td>
<td>[−0.17, 0.27]</td>
</tr>
<tr>
<td>Financial situation</td>
<td>0.04</td>
<td>[−1.59, 2.45]</td>
</tr>
<tr>
<td>Field of study</td>
<td>−0.15</td>
<td>[−2.57, 0.30]</td>
</tr>
</tbody>
</table>

Note. Statistically significant effects are in bold (\(p \leq .01\)). CI = confidence interval.

cohereence and resilience did not predict burnout among students of health care professions. The student’s financial situation and field of study did not have significant confounding effects in the linear regression model (Table 3). The total explained variance in the linear regression model was 25.7%.

The only significant personality predictor of engagement levels among students in our sample was sense of coherence (\(\beta = .31\), 95% CI = [0.01, 0.46]), while resilience and the Type D subscales (negative affectivity and
social inhibition) were not found to be significant predictors of engagement. However, after inclusion of the student’s financial situation and field of study in the linear regression model, the significant effect of sense of coherence on engagement diminished. The total explained variance in the linear regression model was 3.5% (Table 4).

Table 5 shows the significant differences in burnout syndrome among students who scored highly in the Type D dimensions (a cutoff of 10 points or higher in one or both of the subscales) when compared with students with low scores ($t = –2.58$, $p < .01$). Students with Type D personality characteristics scored significantly higher on the burnout syndrome questionnaire. No significant differences in engagement were found between students with high and low scores in the Type D personality dimensions (Table 5).
Discussion

The main focus of this study was the possible links between personality characteristics and burnout syndrome among students of health care professions. The results of the correlation analysis revealed a significant association between Type D and burnout syndrome. Resilience and sense of coherence were negatively related to burnout levels. However, the linear regression model showed that only the negative affectivity subscale of the Type D assessment was a significant personality predictor for burnout among students of health care professions and that the social inhibition subscale, sense of coherence, and resilience did not predict burnout in our study. Moreover, students with high levels of Type D personality scored significantly higher in the burnout syndrome questionnaire compared with students without Type D characteristics, which supports the assumption of a strong relationship between Type D personality and burnout syndrome.

Based on these findings, Type D personality appears to be a significant personality factor related to burnout syndrome, in line with the results of prior research in this area. Geuens, Braspenning, van Bogaert, and Franck (2015) identified nurses with high levels of Type D personality characteristics as more likely to have a high risk for burnout compared with individuals with low levels of Type D characteristics. Mols and Denollet (2010) identified evidence of a significant correlation between Type D personality and work-related problems (higher absences, higher burnout levels, and more work-related stress). Similarly, Ogińska-Bulik (2006) and Armon (2014) found higher burnout levels among people scoring high in Type D dimensions. Personality traits are generally considered to be relatively stable over time, indicating that the relationship between Type D personality and burnout syndrome persists among individuals during their course of study as well as later in their professional practice. However, Polman, Borkoles, and Nicholls (2010) found that students with high levels in Type D dimensions tend to use maladaptive coping strategies in stressful situations, which might explain the association between Type D characteristics and increased levels of burnout. In addition, Alarcon, Eschleman, and Bowling (2009) found that a student’s coping partially mediated the relationship between demands and burnout, suggesting that improving adaptive coping strategies can decrease burnout levels.

This has direct practical implications, as individual strategies for coping with stressful situations are modifiable. Super, Wagemakers, Picavet, Verkooijen, and Koelen (2015) reviewed several studies showing that interventions can positively influence the sense of coherence, a personality resource that reflects an individual’s coping capacity to deal with stressors.
The sense of coherence among health care students was positively modified due to social–psychological training that focuses on the enhancement of interpersonal and communication skills (Skodova & Lajciakova, 2013). Moreover, the successful reduction of distressed (Type D) personality characteristics was reported in patients with coronary artery disease as a result of an enhanced cardiac rehabilitation program (Karlsson et al., 2007, in Geuens et al., 2015) and a mindfulness-based stress reduction intervention (Nyklicek, van Beugen, & Denollet, 2013). This implies that interventions that develop and improve coping strategies could be useful, especially among students that score high in Type D personality dimensions.

No significant differences in engagement were found between students with high and low scores in the Type D dimensions. The only significant personality predictor of engagement levels among students in our sample was a sense of coherence. However, after including the student’s financial situation and field of study in the linear regression model, the significant effect of sense of coherence on engagement diminished. This implies that, although engagement is considered a counterpart to burnout syndrome, they are influenced by different factors. As Hakanen and Schaufeli (2012) conclude, burnout and engagement may be characterized as opposite, yet distinct factors.

The relationships between burnout syndrome and personality characteristics are complex, and burnout has a multifactorial etiology. This complexity of the association between variables was difficult to capture in our study due to some limitations, including the fact that the analyses were based on cross-sectional data; as such, they do not allow for the possibility of causal interpretations of associations between the variables. In addition, all the students were in a very narrow age range (19-21 years), which might have impacted the results. Further research with a larger sample would be useful for a more profound analysis of the interrelationships between burnout and personality factors. However, the significant association between Type D personality and burnout levels found in our study supports the hypothesis on the negative impact of this particular personality characteristic on burnout syndrome among health care professionals.

In conclusion, aside from organizational settings and workloads, personality predispositions play an important role in the development and management of burnout. However, research that focuses on the personality predictors of burnout among health care professionals is still lacking. The significant relationship between Type D personality and an elevated risk for burnout was found in the present study; students who were identified as having a Type D personality had significantly higher levels of burnout. This implies that specialized intervention programs targeted at increasing social skills, including positive coping strategies, should be provided for students, especially those...
who are at higher risk for developing burnout. Similar to other countries in Central-Eastern Europe, Slovakia has a well-established university education in nursing and midwifery (especially BSc undergraduate study programs) that follows EU directives and is strongly practically oriented. For instance, half of the undergraduate program in midwifery is practice (Mivsek, Baskova, & Wilhelmova, 2016). This means that students’ contact with the demands of their profession starts during their study. We believe that improving students’ ability to manage stress during their study and practical education can prevent burnout syndrome later in practice.

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