

WORK FOR THE PRISON SERVICE: SELECTED HEALTH CONSEQUENCES – INVESTIGATING THE ROLE OF PERSONAL RESOURCES, JOB DEMANDS, WORK STRESS, AND BURNOUT

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Abstract

Objectives: The specific job demands of the Prison Service (PS) may affect the health of officers. The job demands-resources model (JD-R) model was used to design a survey of the consequences of working subject to particular job demands. The aim was to gain an insight into the relationship between job demands, personal resources, occupational stress and burnout and selected health consequence indicators (such as behaviors associated with the consumption of alcohol, stress symptoms). **Material and Methods:** A total of 1732 PS officers in Poland were surveyed. The following tools were used as part of the survey: the *Copenhagen Psychosocial Questionnaire* (COPSOQ II), the *Multidimensional Inventory for Assessing Coping Responses* (COPE), the *Alcohol Use Disorders Identification Test* (AUDIT) and a form with a respondent's particulars. Path analysis using partial least squares structural equation modelling (PLS-SEM) was performed. **Results:** The assumed hypotheses were partially confirmed by the results. Out of 4 job demands categories only work pace turned out not to be a significant predictor of burnout and stress. For alcohol related behaviors, stress level was the only significant predictor, both as a direct and indirect effect taking into account job demands. It transpired that support from superiors rather than support from colleagues or self-efficacy was a significant moderator in the emotional demands – stress relationship. Limitations of the study and perspectives for its continuation are also presented herein. **Conclusions:** Based on the obtained results it may be concluded that job demands and support from superiors do have an impact on stress in the PS group. This is also consistent with available reports in literature. At the same time stress is a significant predictor of alcohol related behaviors. Coping through the use of psychoactive substances was not a significant factor in statistical analyses and it has still not been subject to sufficient scientific analysis. *Int J Occup Med Environ Health.* 2023;36(6)

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INTRODUCTION

Job demands are components of every working environment. They are associated with making a permanent effort at work, which might constitute physiological and/or psychological costs for a worker. The Prison Service (PS) is a particular example of an environment with specific demands. This uniformed service was established for performing tasks within the scope of pretrial detentions and enforcing prison sentences at penitentiary facilities [1]. There are a number of extraordinary situations a PS officer may encounter. These include fights between inmates, assaults, prison break attempts, and suicide attempts. Officers are legally permitted to apply proportional means of direct coercion (force) such as non-lethal weapons, physical force or hand-cuffs. At the end of 2021 there were 26 892 prison officers in Poland [2].

Job characteristics can have certain behavioral, emotional, and physical consequences. At the same time, individual characteristics may determine the state of psycho-physical health of an employee despite the specific work requirements. In the introduction, the issue of the characteristics of work in the PS and the relationship between the characteristics of work and the state of health of officers will be presented. The use of the job demands-resources (JD-R) model for the description of health consequences will be highlighted, with emphasis on the role of personal resources for the development of stress and job burnout. It will be described that the use of psychoactive substances might be seen as a manifestation of stress and professional burnout. It will be clarified that there is a need to fill the gap in the data on specific health consequences in the group of PS officers.

Work at penitentiary facilities entails exposure to a specific type of occupational stressors not only associated with interactions with inmates. The military-style organization of the PS is associated with subordination to the chain of command and the duty to remain on-call. Overload of responsibilities and low levels of autonomy are

indicated as conducive to the occurrence of in the work of PS officers [3]. Based on empirical research to date, this professional group may be classified as a group with the following attributes: high indications of mental health problems and burnout [4], high levels of stress as compared against other professional groups, lower average lifetime expectancy than the general population (by 16 years).

Furthermore, research has shown that in the absence of appropriate coping processes for difficult situations the mental and social functioning of PS staff may deteriorate [5,6]. The nature of the working environment, which entails employee isolation, shift work, a dangerous working environment and interpersonal relations (including bullying and harassment), increases the risk of alcohol use within this group [7–9]. Using alcohol as a way to cope may lead to potentially harmful problem drinking. Furthermore, the occurrence of burnout symptoms is often a positive predictor of the onset of drinking issues for employees [10,11]. Empirical research to date has focused on the use of psychoactive substances by inmates rather than staff. Expanding research on the use of alcohol by PS employees is indisputably important. According to research it is the cause of 22% of dismissals and the reason for 60% of partial incapacity to perform duties cautions issued to PS officers [12]. These statistical data from 2000–2001 were presented at the National Penitentiary Symposium at the Prison Service Training Center in Kalisz, Poland, by Petruk [12]. It was pointed out that the phenomenon of drinking alcohol is known by service employees or by observers of such events.

Psychoactive substance use among workers in professions with an increased psychosocial risk may assume many forms. Based on previous exploration of the issue of the role of stress coping strategies within the PS made it possible for the authors to conclude that, at the statistical trend level, reverting to alcohol or other psychoactive substance use strategies may be significant for

the development of job satisfaction of PS security staff who are responsible for order and security in a facility (questionnaire statements referred to “alcohol or other substances”) [13]. No research on the PS group encompassing the entire Poland has been carried out thus far. The authors only have studies of particular units where the numbers of participants did not inspire confidence. Therefore, the specific nature of the various studied facilities, such as prisons, remand centers, therapeutic wards for females, males, minors, repeat offenders as well as open, semi-open and closed prisons might not provide a reliable overall psychological picture of PS staff. Large study groups of >1000 are rarely found in the international PS literature. Groups of 200–300 are more prevalent [14,15].

The PS offers a unique job specification. The basic function of the state within the scope of public safety is enacted through its performance. According to the JD-R model by Bakker and Demerouti [16], predicting the negative consequences of prison work in the form of burnout is possible while taking into account both the challenges and difficulties (job demands) as well as the elements that make it possible to cope with work situations (resources). Researchers using the JD-R model confirm health problems resulting from burnout originate from high job demands [17,18]. According to Basińska [19], for a group of police officers this could assume the form of mental health disorders. At the same time, pursuant to the JD-R model, resources are necessary to be able to cope. These can assume the form of personal traits, objects that allow a certain state to be achieved or maintained or negative consequences to be prevented. For example, according to literature, support from colleagues offers significant protection against the development of depressive symptoms in the face of job burnout. Similar to self-efficacy and some stress coping strategies.

In the JD-R model, personal resources may act as mediators or as moderators [20]:

- A review of scientific studies allows the authors to conclude that mediation analyses of the role of support in the workplace are well established as part of psychological research [21–23]. At the same time, results of studies on the moderating effect of social support are inconclusive. This provides an inspiration to broaden the state of knowledge on this subject [24].
- A review of analyses in literature provides a broad range of knowledge on the mediating role of stress coping strategies. Its role in *inter alia* the relationship between stress and well-being in a group of police officers [25], between character traits and burnout in a group of bank employees [26] and also between stress and job-related outcomes in a group of teachers [27] has been demonstrated. At the same time, some studies indicate that coping strategies and social support can also be considered as moderators of occupational stress [28].
- Numerous studies have been performed under the assumption of the mediating role of the self-efficacy variable. Such analyses make it possible to illustrate why given relations occur. On the other hand, moderations make it possible to also determine which conditions are necessary for a given relation to occur. Therefore, differently constructed models should be researched [29].

A review of reports compiled using empirical data derived from a group of officers allows the authors to assume that there are grounds to consider burnout and stress simultaneously [30–32]. Both phenomena may lead to undesired health consequences and may stem from the JD-R relation. At the same time, these phenomena are not synonymous. Experiencing burnout entails of a set of symptoms which include exhaustion, negative attitude (indifference, objectification), lack of commitment (ineffectiveness, deliberate avoidance of work) [33]. Stress at work, on the other hand, entails experiencing tension, nervousness and problems with resting. Essentially both may trigger an adaptation

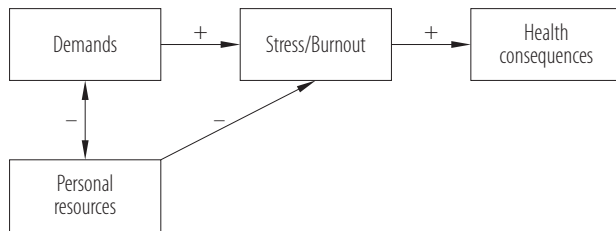


Figure 1. Research model for selected health consequences in Prison Service (N = 1732), Poland

mechanism and the specific coping methods lead to further consequences, which include health consequences. The aim of the presented study was to gain an insight into the moderating role of the relationship between job demands, personal resources, occupational stress, burnout, stress coping strategy entailing the consumption of alcohol and other psychoactive substances and selected health consequences in a group of prison officers. The following were analyzed:

- job demands (cognitive demands at work, emotional demands at work, quantitative, work pace),
- occupational stress and burnout,
- selected health consequences: particular stress symptoms (depressive stress symptoms, somatic stress symptoms, cognitive stress symptoms), characteristics of alcohol consumption,
- personal resources: self-efficacy and social support at work, stress coping strategy entailing the consumption of alcohol and other psychoactive substances.

The research model assumed:

- level I predictors: job requirements and work pace,
- level II predictors: professional burnout and a sense of stress,
- dependent variables: individual stress symptoms and characteristics of behavior related to alcohol consumption,
- level I moderators: social support at work and self-efficacy,
- level II moderator: coping strategy through the use of alcohol and other psychoactive substances.

Figure 1 shows a graphical representation of the relations in the adopted model.

The following research hypothesis were formulated on the basis of the literature:

- H1: Job demands (cognitive demands at work, emotional demands at work, quantitative demands at work, work pace) are predictors of burnout and stress.
- H2: Stress, burnout, job demands are predictors for selected health consequences: stress symptoms (depressive stress symptoms, somatic stress symptoms, cognitive stress symptoms) and characteristics of alcohol consumption.
- H3: Personal resources (self-efficacy and social support at work) moderate the relation: job demands (cognitive demands at work, emotional demands at work, quantitative demands at work, work pace) – occupational stress and job demands – burnout.
- H4: A strategy for coping through the use of alcohol and other substances moderates the relation: occupational stress – health consequences and burnout – health consequences.

MATERIAL AND METHODS

Prison Service officers in Poland took part in the study. The study was carried out in cooperation with the Central Board of the Prison Service (CBPS). Staff from all units subordinate to the CBPS were subject to the study. The study was conducted online on Association for Healthy Workplaces (Stowarzyszenie Zdrowa Praca) research website. The entire process was overseen by psychologists. A CBPS occupational health and safety psychologist was allocated to the subjects who were also provided with information about the study, its aim and participation terms, including the fact that participation is voluntary. Before taking part in the study on the website, each subject was required to consent to the research and was additionally informed of the aim and terms of the research in accordance with the requirements of

the American Psychological Association code of ethics (comprehensibility, voluntariness, confidentiality, right to information about the results). The study was anonymous. Each individual who completed the study received feedback on the results and potential preventive recommendations. Completing an online spreadsheet allowed the researchers to send this information automatically after the scores for each questionnaire were counted. The following tools were used as part of the study:

- The *Copenhagen Psychosocial Questionnaire* (COPSOQ II) to assess psychosocial risks in the work environment [34]. It comprises 127 questions that make up 41 subscales. These subscales were categorized by the authors of the original version of the tool into 7 different work-related areas (dimensions). These are: job demands, job content and organization, social relations and leadership, person-life interaction, values at work, health and well-being and exposure to negative behaviors. The following scales (their abbreviations are used in the article) were used in the data analyses:
 - *Stress* (ST) – feeling tense and trouble relaxing;
 - *Depressive Stress Symptoms* (DS) – anhedonia and bad mood symptoms; such as guilt, no self-confidence;
 - *Somatic Stress Symptoms* (SO) – physical stress related ailments, such as tummy aches, headaches, palpitations;
 - *Cognitive Stress Symptoms* (CS) – reactive problems with memory and attention span; for example, within the scope of making decisions;
 - *Self-Efficacy* (SE) – self-assessment of one's own capacity;
 - *Burnout* (BO) – physical and emotional exhaustion;
 - *Cognitive Demands at Work* (CD) – job aspects such as decision making, creativity and attention;
 - *Emotional Demands* (ED) – need to engage emotions into a task;
 - *Quantitative Demands* (QD) – describes the degree to which workload reflects the available time;
- *Work Pace* (WP) – aspects such as time pressure or imposed work rhythm;
- *Social Support from Colleagues* (SC), *Social Support from Supervisors* (SS).
- *Multidimensional Inventory for Assessing Coping Responses* (COPE) by Ch.C. Carver, M.F. Scheier, J.K. Weintraub, and Z. Juczyński and N. Ogińska-Bulik in the Polish adaptation [35]. The questionnaire is used to assess ways of coping with stress. It is a self-description-based tool consisting of 60 statements. Responses are provided on a 4-point scale. It makes it possible to assess 15 stressful situation reaction strategies. Data pertaining to 1 strategy have been used in the analyses: use of alcohol or other psychoactive substances. Statements such as “alcohol or other drugs” were used in the tool, e.g., “I drink alcohol or other drugs to feel better.” In analyses it is referred to using the COPE_Alk abbreviation.
- *Alcohol Use Disorder Identification Test* (AUDIT; AU). In its 2018 Polish adaptation and validation, the AUDIT scale comprises of 2 parts [36]. The self-report part 1 was used, containing 10 questions characterizing alcohol use, the drinking pattern, negative effects of drinking and symptoms of addiction. Once the test is completed and the points are added up, the severity of alcohol consumption can be assessed. In this study, the variable is described as “characteristics of alcohol consumption.”

The study also includes a section with the respondent's particulars that includes questions about age, education, gender, length of service, health status and marital status. A total of 1732 people from 16 districts were surveyed. The overall average length of service was 13.7 years and the average age in the sample was 36.4 years. More than 14% of women and 85% of men participated in the study. The largest group, 28.8%, had secondary education, 10.9% had a bachelor's degree, 0.1% had primary education and 55% had postgraduate education. Prison managers

were 29.5% of respondents, security staff 69.5% and re-education staff 30.5%. In total, 75.1% of respondents worked in a prison and 20.9% in a remand centre. More than 1% of the respondents worked in PS Regional Inspectorate; in Central Board of the PS – 0.2%; and others – 2.6%.

Ethics

This project was carried out in accordance with the recommendations of the American Psychological Association's Code of Ethics.

Statistics

The SPSS statistical package (v. 27, IBM SPSS) and the SmartPLS 4.0 software were used to analyze data [37]. Partial least squares structural equation modelling (PLS-SEM) was carried out to verify the hypotheses. The PLS-SEM method was used because the model presented concerns predictive verification, consists of multiple constructs and the aim is to better understand the theory by exploring complex relationships between constructs (exploratory research for theory development) [38]. The focus on the predictive validation of the presented model and its high complexity also influenced the fact that the CB-SEM method was not used for the analysis, but rather PLS-SEM as it is more suitable for analyzing such models [39].

As the selected PLS-SEM tool is not yet widespread in psychological literature, a decision was made to describe the procedure along with the coefficient values.

The inference PLS-SEM procedure itself comprises 2 parts: a structural analysis of the tested theoretical models and an assessment of the measurement model used. The structural analysis is based on defining links between constructs through pathways, which can reflect direct and interactional (moderated) effects. Analyses of direct effects will be considered in this work [37].

Reliability analysis was the first step. It involves verifying 3 indicators: Cronbach's α , composite reliability (CR) and consistent reliability coefficient (ρ_A). It is assumed

that to be considered reliable, the value of the coefficients should be at least 0. The next step is to estimate convergent validity. To that end, the value of the proportion of the average variance extracted (AVE) is verified, with an acceptable value of >0.50 [40].

When estimating discriminant validity, the Fornell-Larcker criterion should be verified. The indicator weights in the PLS-SEM analysis are standardized between 1 and -1 , with values close to 0 indicating a weak relationship and values close to 1 or -1 indicating a strong positive or negative relationship. Discriminant validity can be considered to have occurred if the square root of AVE for each construct is greater than the correlation coefficient between the constructs. Heterotrait-monotrait ratio of correlations (HTMT) is the second criterion used to estimate discriminant validity. If the value of this criterion is <0.9 and the confidence interval does not include 1, then the constructs can be considered to be different from each other. The next step in the PLS-SEM analysis is to verify the VIF collinearity index, which allows the authors to verify that the constructs used in the model do indeed represent different theoretical constructs. A bootstrapping value of 10 000 with a 2-sided confidence interval of 5% was used for the analyses [41].

The results are presented according to the PLM-SEM analysis steps described above. The results of reliability analyses for all the scales used will be presented first. Determining the discriminant validity measures will be the next step in the analysis of the results. Then predictors for given hypotheses will be discussed.

RESULTS

Reliability analyses

In line with the PLS-SEM, a reliability analysis was performed for all constructs used. The said analyses demonstrated that all the scales used scored >0.7 for Cronbach's α coefficient, with the exception of the QD scale with a result of >0.69 . All scales achieved a satisfactory result of ρ_A

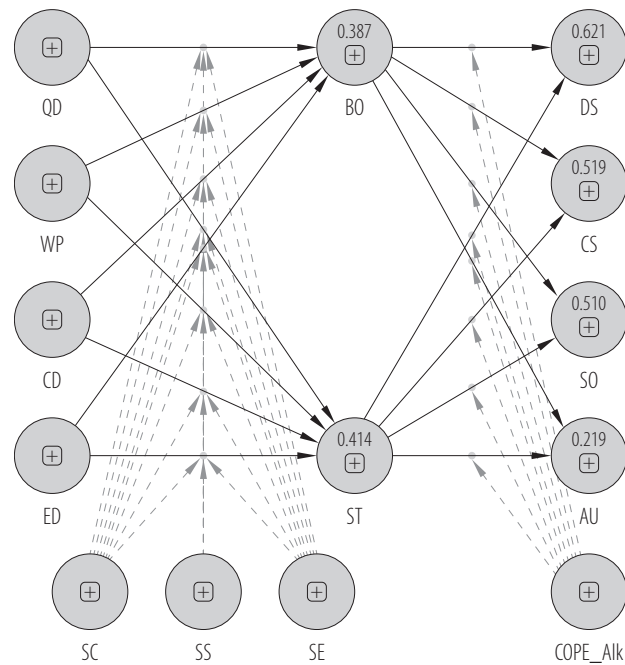
>0.7. The CR composite reliability measure also satisfies the goodness criterion with values >0.8 for all measures. The AVE criterion results were >0.5. Statistical significance of the results was demonstrated by a confidence interval (CI) analysis obtained by bootstrapping equaled 10 000. Therefore, all constructs were considered sufficiently reliable to be included in subsequent analyses.

Discriminant validity analysis

In order to verify discriminant validity of the selected constructs, an analysis defining the Fornell-Larcker criterion was performed, which showed that the square root of the AVE coefficient for most of the constructs is greater than for the correlation of that construct with other constructs. There were no situations for the ST scale where the value of the square root of the AVE = 0.8 coefficient is less than the correlation coefficient of this scale with the BO scale (0.9). The HTMT criterion measure is another analysis examining discriminant validity. For most of the constructs, the obtained results allowed the authors to conclude that the constructs used in the study are different from each other and that the value of the criterion is <0.9. That value was found to be too high for the ST and BO scales (HTMT = 0.97). An analysis using the bootstrapping method was also performed to estimate CI for each HTMT coefficient. All confidence intervals for each relation were found to be statistically significant as they did not include 0. The variance inflation factor (VIF) collinearity index was also used to analyze discriminant validity. The value of this coefficient was <5 for all items used to measure the variables. The obtained results allowed the authors to conclude that the constructs used meet the conditions of discriminant validity and can be used in further analyses as they measure different theoretical constructs.

Predictive analyses

A PLS-SEM predictive analysis was performed in order to verify the posed research questions. The bootstrapping



Abbreviations as in Table 1.

R² values taking into account moderators were provided for dependent variables.

Figure 2. Moderation model for burnout, stress scale, depressive stress symptoms, cognitive stress symptoms, somatic stress symptoms and alcohol related behaviors in Prison Service (N = 1732), Poland

equal 10 000 method was used to that end [42]. The performed analyses allowed the authors to determine β , t , p values and CI at the 5% level [41]. An R² parameter was also indicated to determine the predictive power of the model and an f^2 value indicating the power of a relation between the constructs. In other words, it is a measure of the impact of an exogenous construct on an endogenous construct. It is assumed that the value should be $f^2 > 0.02$ [43]. Figure 2 shows a graphical representation of the results.

According to the performed analyses, job demands such as QD, CD and ED were significant predictors of BO and ST, whilst WP was found not to be a significant predictor. For CD, the f^2 coefficient is <0.02 therefore it cannot be assumed that the CD and BO relation is sufficiently powerful. Similar results were obtained for the CD→ST and ED→ST pathways, with $f^2 = 0.014$ and $f^2 = 0.018$, respectively.

Furthermore, both BO and ST are significant predictors for the DS, CS and SO variables. Whereas for AU, ST was the only significant predictor, both as a direct and indirect effect taking into account job demands. For AU, the QD→ST→AU, CD→ST→AU, ED→ST→AU pathways and the ST→AU direct effect were found to be significant. The other pathways which take into account BO (both directly and indirectly taking into account ED, CD, WP, QD first level predictors) proved not to be significant.

The next step of the analyses was to verify the moderating effects between demands and stress as well as burnout moderated by SC, SS and SE. Based on the obtained results, the authors were able to conclude that only SS is a significant moderator of the ED→ST relationship. The other moderators were found not to be significant (SE, SC).

The final step was to test the moderation of alcohol use coping strategy on the relationship between burnout as well as stress and stress symptoms as well as alcohol related behaviors. That strategy turned out not to be a significant moderator.

A summary of the analyses is presented in Table 1, with only statistically significant data shown where p pathway significance was <0.05. Relations found not to be significant are not included in the table.

DISCUSSION

Based on the JD-R model, data from analyses performed to date and the specifics of prison work, a study was designed to describe the process of health consequences in a group of PS officers. The JD-R model was used for the study assumptions as it is the most widely used model for investigating the mutual relations between stress, its sources and health consequences as a process.

The study results have allowed the authors to confirm hypothesis H1. Analyses confirmed that quantitative, cognitive and emotional job demands are positively related with burnout and stress. At the same time, the observed relationship between cognitive demands

and burnout should be described as insufficiently powerful ($f^2 > 0.2$). It is known that the relationship between job demands and well-being in the PS group has already been analyzed empirically and confirmed, among other things, by the findings that lower employee well-being is related to job demands and can manifest itself in the form of exhaustion and lack of commitment [18,44]. The use of COPSOQ on a group of uniformed and non-uniformed prison and probation facility staff confirmed that emotional and quantitative job demands are particularly relevant to the onset of burnout [45]. The significance of these 2 scales has also been shown in analyses of burnout predictors using the *Copenhagen Burnout Inventory* (CBI) test on a group of human service work employees [46]. An analysis of the literature shows that job demands of a quantitative nature (QD) are a particularly sensitive issue in an organization with reduced staff numbers [47]. And this reflects the current situation in penitentiary facilities, which are seeing a large increase staff leaving the PS. In the present study, work pace was the only job demand found not to be a significant predictor of burnout and stress. Therefore acting quickly, often under pressure, does not seem to be so significant, despite the fact that the speed of reaction to perceived threats to inmate safety (in the position of a PS monitor) or the speed of reaction to breaches of order and the accuracy of the choice of intervention technique (in the PS intervention group) are important characteristics of the job. The obtained result suggests the people employed in these positions are well adapted.

The study found that burnout and stress were significant predictors of depressive, cognitive, and somatic symptoms (i.e., DS, CS, and SO). Studies can be found in the literature suggesting a relation between burnout and increased risk of illness, as well as a relation between burnout and given stress symptoms (using the COPSOQ tool) [48,49]. The relationship between ST due to excessive strain or role difficulties and stress symptoms in the form of health

Table 1. Significant relations together with values for dependent variables in the Prison Service (N = 1732), online research in Poland

| Relation/Pathway | β level | T-test | p | Bootstrap 95% CI | | f^2 |
|---|---------------|--------|-------|----------------------|----------------------|-------|
| | | | | LLCI _{Boot} | ULCI _{Boot} | |
| BO dependent variable ($R^2 = 0.387$) | | | | | | |
| QD→BO | 0.336 | 11.905 | 0.000 | 0.279 | 0.389 | 0.103 |
| QD→BO | 0.078 | 2.825 | 0.005 | 0.025 | 0.132 | 0.005 |
| ED→BO | 0.182 | 7.008 | 0.000 | 0.133 | 0.234 | 0.026 |
| ST dependent variable ($R^2 = 0.414$) | | | | | | |
| QD→ST | 0.312 | 10.734 | 0.000 | 0.253 | 0.367 | 0.093 |
| CD→ST | 0.135 | 4.925 | 0.000 | 0.082 | 0.190 | 0.014 |
| ED→ST | 0.149 | 5.943 | 0.000 | 0.100 | 0.199 | 0.018 |
| SS × ED→ST | 0.066 | 2.022 | 0.043 | 0.003 | 0.131 | n.a. |
| DS dependent variable ($R^2 = 0.621$) | | | | | | |
| BO→DS | 0.199 | 5.953 | 0.000 | 0.133 | 0.263 | 0.030 |
| ST→DS | 0.557 | 16.911 | 0.000 | 0.492 | 0.621 | 0.230 |
| QD→BO→DS | 0.067 | 5.392 | 0.000 | 0.043 | 0.092 | n.a. |
| CD→BO→DS | 0.016 | 2.516 | 0.012 | 0.005 | 0.029 | n.a. |
| ED→BO→DS | 0.036 | 4.503 | 0.000 | 0.022 | 0.053 | n.a. |
| QD→ST→DS | 0.174 | 8.621 | 0.000 | 0.135 | 0.213 | n.a. |
| CD→ST→DS | 0.075 | 4.682 | 0.000 | 0.045 | 0.108 | n.a. |
| ED→ST→DS | 0.083 | 5.653 | 0.000 | 0.055 | 0.113 | n.a. |
| SS × ED→ST→DS | 0.037 | 2.020 | 0.043 | 0.002 | 0.073 | n.a. |
| SO dependent variable ($R^2 = 0.510$) | | | | | | |
| BO→SO | 0.267 | 7.781 | 0.000 | 0.200 | 0.335 | 0.042 |
| ST→SO | 0.418 | 12.077 | 0.000 | 0.348 | 0.484 | 0.100 |
| QD→BO→SO | 0.090 | 6.415 | 0.000 | 0.063 | 0.118 | n.a. |
| CD→BO→SO | 0.021 | 2.608 | 0.009 | 0.006 | 0.037 | n.a. |
| ED→BO→SO | 0.049 | 5.247 | 0.000 | 0.032 | 0.068 | n.a. |
| QD→ST→SO | 0.130 | 7.808 | 0.000 | 0.098 | 0.163 | n.a. |
| CD→ST→SO | 0.056 | 4.474 | 0.000 | 0.033 | 0.082 | n.a. |
| ED→ST→SO | 0.062 | 5.310 | 0.000 | 0.040 | 0.086 | n.a. |
| SS × ED→ST→SO | 0.028 | 1.999 | 0.046 | 0.001 | 0.055 | n.a. |
| CS dependent variable ($R^2 = 0.519$) | | | | | | |
| BO→CS | 0.217 | 6.509 | 0.000 | 0.152 | 0.282 | 0.028 |
| ST→CS | 0.463 | 13.913 | 0.000 | 0.396 | 0.528 | 0.125 |
| QD→BO→CS | 0.073 | 5.630 | 0.000 | 0.048 | 0.099 | n.a. |
| CD→BO→CS | 0.017 | 2.569 | 0.010 | 0.005 | 0.031 | n.a. |
| ED→BO→CS | 0.039 | 4.819 | 0.000 | 0.025 | 0.057 | n.a. |
| QD→ST→CS | 0.144 | 8.138 | 0.000 | 0.110 | 0.180 | n.a. |

Table 1. Significant relations together with values for dependent variables in the Prison Service (N = 1732), online research in Poland – cont.

| Relation/Pathway | β level | T-test | p | Bootstrap 95% CI | | f ² |
|--|---------------|--------|-------|----------------------|----------------------|----------------|
| | | | | LLCI _{Boot} | ULCI _{Boot} | |
| CS dependent variable (R ² = 0.519) – cont. | | | | | | |
| CD→ST→CS | 0.063 | 4.574 | 0.000 | 0.037 | 0.091 | n.a. |
| ED→ST→CS | 0.069 | 5.440 | 0.000 | 0.045 | 0.094 | n.a. |
| SS × ED→ST→CS | 0.030 | 2.010 | 0.044 | 0.001 | 0.061 | n.a. |
| AU dependent variable (R ² = 0.219) | | | | | | |
| ST→AU | 0.133 | 3.430 | 0.001 | 0.057 | 0.210 | 0.006 |
| QD→ST→AU | 0.042 | 3.180 | 0.001 | 0.017 | 0.069 | n.a. |
| CD→ST→AU | 0.018 | 2.805 | 0.005 | 0.007 | 0.032 | n.a. |
| ED→ST→AU | 0.020 | 2.917 | 0.004 | 0.008 | 0.034 | n.a. |

AU – alcohol related behaviours; BO – burnout; CD – cognitive demands at work; COPE_Alk – stress coping strategy entailing alcohol use; CS – cognitive stress symptoms; DS – depressive stress symptoms; ED – emotional demands; f² – Cohen’s standardized measure of effect size; n.a. – not applicable; QD – quantitative demands; R² – coefficient of determination; SC – social support from colleagues; SE – self-efficacy; LLCI_{boot} – boot confidence internal lower limit; SO – somatic stress symptoms; SS – social support from supervisors; ST – stress scale; ULCI_{boot} – boot confidence upper limit; WP – work pace.

problems has already been analyzed in studies. However, these were performed on health professionals. The results obtained in the present study remain consistent with reports for other professional groups [50].

In the present study presented, AU variable was hypothesized to be an indicator for health consequences. Alcohol consumption is a subject area which introduces sensitive content into the relation with respondents. An online format was used for this purpose as the most convenient. In this study, stress was found to be the only significant predictor for the characteristics of alcohol consumption. The relations between job demands, stress and alcohol use were found to be significant and in this aspect confirmed H2. Reports by U.S. researchers have indicated that emotional job demands have an indirect effect on drinking in the PS group but also that the burnout variable is significant [51]. In the authors’ analyses, the pathway between burnout and alcohol use was not found to be significant (also taking into account the job demands factor). However, prior empirical studies have indicated that burnout is a risk factor for problem drinking and should be considered to be a result of an exhaustion of

resources for coping with job demands [52]. At the same time, the cited studies did not take into account stress, which, like burnout, is the result of excessive strain on resource, but – as indicated in the introduction – it comes with a different psychological content.

In a study on police culture, the authors can find a claim that law enforcement structures often adhere to values such as courage, strength, emotional control, self-reliance and independence. However, a misinterpretation of these values can discourage one to seek appropriate help and encourage avoidance coping mechanisms [53]. The PS is a uniformed, armed formation with many similarities to the police force for example. In the current study, the authors found that, among PS officers, avoidance responses in the form of use of alcohol and other psychoactive substances (a moderator in the authors’ study), were not significant for all the analyzed relations, which is between stress or burnout and the health consequences subject to analyses. There are at least 2 reasons why that result is interesting and noteworthy. As mentioned in the introduction, previous studies indicate that there is a relation between coping through stimulants and alcohol related

behaviors. The current study on a relatively large sample of PS officers contradicts these reports. The second issue is that there is still insufficient knowledge of the link between job workload and the psychological function that psychoactive substances have and the damage to health they cause. There are still a number of issues to be clarified within this subject-scope due to the fact that it is so rarely discussed. In a literature review there are diverse methodologies for analyses of stress coping through stimulants in the PS [10,54]. Predictors of alcohol abuse risk are also undetermined. However, previous findings on the health consequences of stimulant use, the relation between low mental well-being and drinking alcohol as a means of coping conducted on large samples from the general population allow the authors to hypothesize about the relation between stress, burnout and the impact on anti-health behaviors in a group of employees [55]. However, as it stands, the H4 hypothesis has not been confirmed. The relation between burnout as well as stress and stress symptoms did not appear to be significantly moderated by coping through substance use among PS officers.

Analyses of the acquired data partially confirmed the H3 hypothesis. The SS variable emerged as a significant moderator reinforcing the relationship between emotional job demands and stress. In contrast, no statistically significant results emerged for the support from colleagues variable. The results of this research work are interesting as they indicate a particular impact in relation to the demand to involve emotions in prison work and, at the same time, to the role of those higher up the official hierarchy. Support from superiors in the COPSQ-II tool used refers to the frequency an employee receives help and support from superiors within the scope of problems at work. Prior analyses on PS staff have shown that relations with superiors play a significant role in the development of occupational stress and burnout, with superiors' attitudes towards criticism and harsh assessment cited as sources of stress in this line of work [56,57]. Research shows that

support at the workplace affects the occupational stress in among PS staff [58]. Employee–superior relations may entail unrealistic expectations, lack of explanations for decisions made and expanding the employee responsibilities beyond their actual capabilities. At the same time, and peculiarly, Schaufeli et al. point to an emerging John Wayne syndrome in this professional group, expressed in the belief that asking for social support is associated with incompetence [59]. The key role of support from superiors and management staff in protecting the well-being of prison officers is highlighted in studies [60]. There are also studies showing that in other occupational groups, actively cooperating superiors are a protective factor against alcohol consumption for employees [61]. This is consistent with the result obtained in this study.

Contrary to assumptions, the role of SE was not confirmed by this study (hypothesis H3). The SE personal resource was found not to be a significant moderator for relations between job demands and stress as well as job demands and burnout. This is a surprising result in view of the fact that self-efficacy is well-established among personal resources that shape health and impact stress as a result of the appearance of burnout symptoms [62]. It is known that high self-efficacy enhances engagement and well-being relative to low SE, which is associated with mental health conditions such as depression [63]. Prison staff are a professional group where belief in professional self-efficacy is generally negatively correlated with selected subscales of *Maslach's Burnout Inventory* [64]. Studies on a group of correctional officers have shown that self-efficacy as a component of psychological capital construct attenuates the effect of distress and negative team relations on low well-being indicators. At the same time, it is not a significant moderator between the work-family conflict and burnout or health complaints [65]. However, the previously published results may have been partially influenced by the adopted conception of SE (general vs. professional), the tools used to measure the construct and the way mod-

eration analyses were conducted [66]. Nonetheless, it is worth noting that the tool used in the current study was previously validated on a group of PS officers [34].

This study, which aimed to look at selected health consequences as a result of working in the PS, has its limitations and needs to be continued. The extent to which studying coping strategies without specifying psychoactive substances (alcohol, drugs, medication) and only considering them collectively influences the obtained results is interesting. A more in-depth analysis of health consequences in the form of substance use related behaviors would be valuable. Inclusion of the work-related social influence perspective and attendance of alcohol networks at the workplace, which the literature suggests may be a particular problem for young adults trying to fit into a new work environment may be worthwhile for developing the subject through continued research into substance use in response to occupational stress [67]. It would also be interesting to analyze how the lack of close relationships in the working environment affects the adaptive capacity of a PS officer and whether it is compensated by active coping strategies for example.

The search for stressors responsible for individual health consequences was not carried out in this study in relation to given facilities (closed prisons) or departments (penitentiary department, quartermaster's department, security department). However, the authors know that symptoms of burnout associated with stress affect not only prison guards, but potentially all prison staff [68]. At the same time, literature data suggests that a given position may differentiate the ability to control in prison work, resulting in disparities in the officers' state of health. It is interesting whether adopting the JD-R model and differentiating perceived levels of autonomy within the scope of specific job demands can impact the health consequences in the form of stress related complaints. However, analyzing these relationships was beyond the scope of this work.

The issue of alcohol use in response to work-related stress is rarely addressed in the scientific literature, especially for specific occupational groups. The alcohol use by employees models described to date take into account the impact of work stress but also emphasize the importance of mediators such as job dissatisfaction, depression, drinking to cope, or moderators in the form of protective factors [69]. It would be worth extending the research to include variables which would facilitate a better understanding of the role of personal resources. Thus far there have been no analyses of which personal resources are strengthened (or built) in the respondents' assessment as their individual response to the reality of PS job demands. However, the authors do know that escalating occupational stress is the main reason for leaving PS work and staff shortages are real problems for PS teams [70]. As a continuation of the research, it would also be worth taking into account aspects of job demands such as shift work or overtime. The question of whether the state of health has an impact on leaving (or the intention to leave) the profession or are other motives more significant remains unanswered. The present study suggests that it would be worthwhile to analyze complex models taking into account individual work environment factors (e.g., specific types of job demands in place of a general factor) and the manifestation of the consequences of exposure to these factors, both in terms of mediators (stress, burnout) and health consequences. Use of a broad perspective for health consequence in research, also at the level of mental health (including, for example, the development of chronic fatigue) may be important for expanding knowledge and applying it to interventions used in practice. The current study, even though it was carried out on a relatively large sample of PS officers, was of a cross-sectional nature. It would clearly be important to implement a longitudinal study plan to better understand the dynamics of substance use in response to work-related stress.

CONCLUSIONS

The aim of the presented research was to describe the relationship between job demands, personal resources, occupational stress, burnout and behaviors associated with the consumption of alcohol and other substances in a group of prison officers and to verify assumptions on the moderating effect of resources on the job demands – health consequences relation. The obtained results are partially congruent with the state of knowledge in this area. As a result of the authors' own research and with reference to the available literature on the subject, the authors found the following:

- Job demands are associated with burnout and stress in the PS group while the work pace is not significant. This result supports other studies presented in the literature and confirms the validity of the assumptions of the JD-R model, while pointing out the varying importance of the different job demand groups.
- Stress is a significant predictor of alcohol related behavior, while burnout was found not to be a significant factor for these behaviors. This result supports the idea that the 2 constructs (stress and burnout) are associated with different psychological content.
- Coping by using psychoactive substances is not a significant moderator between burnout and stress symptoms in the studied professional group. The aforementioned coping strategy has not been subjected to sufficient scientific research.
- Support from superiors is a significant moderator reinforcing the relation between emotional job demands and stress amongst PS officers. Support from colleagues and self-efficacy were not significant for this relation.
- This research needs to be continued, preferably subject to a longitudinal plan, with expanded analyses, broken down by PS unit or department, taking into account autonomy and other factors whose significance has been scientifically demonstrated. It is also advisable to analyze the motivational processes taken into account by the JD-R model, and not only the processes related to deteriorating health.

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