

Hardiness and Depression Among Secondary School Teachers

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Abstract. Hardiness is a personality trait that allows an individual to better cope with stressful situations and allows them opportunity for personal growth. Individuals with high levels of hardiness better cope with stress at work, which is reflected in the less pronounced depression. The research was conducted to gain insight into prevalence of depression among secondary school teachers and whether there is a link between hardiness and depression. The sample consisted of 240 teachers employed in secondary schools in Slovenia. The results showed that the constructs of hardiness and depression are positively related. Hardiness construct is a protective factor at work that can prevent problems associated with depressed mood.

Keywords: depression; hardiness; stress at work; secondary school teachers, Slovenia

1 Introduction

Work of secondary school teachers was shown to be stressful. In the TALIS survey from 2018 (Pedagogical institute 2020), 18 percent of teachers reported a fairly high level of stress. The Trade Union of Education of Slovenia (SVIZ) states that 53.5 percent of teachers often or always experience stress (Slivar 2009). Additionally, The European Agency for Safety and Health at Work, in cooperation with the European Trade Union of Education, conducted a survey in 2007, which also showed that the teaching profession is stressful (Drobnič 2018).

The consequences of high levels of stress are reflected in the poorer quality of education (e.g. absence from work, reduced ability to teach, emotional fatigue of teachers) (Pedagogical Institute 2020). Teachers face a number of work demands in their work environment on a daily basis, which require a lot of emotional involvement. Conflicts, frustrations, stress or crises are normal life phenomena that encourage individuals. However, if they are chronic they may become mental burdens. Mental burdens (e.g. students' rude behaviour towards the teacher, students' lack of motivation to learn,...) affect the teachers' mental well-being and endanger their mental health (Martinez-Monteagudo et al. 2019).

The hardiness construct can be a protective factor in times of stress and allows for a lower level of depressed mood. Individuals with higher levels of hardiness have a confidence in their ability to solve problems effectively. Conversely, when stressed, individuals with lower levels of hardiness face emotional fatigue, feelings of exhaustion, and depersonalization. Perception of lack of control, feelings of discouragement and frustration may persist. Consequently, they might develop defensive strategies for their own protection, such as distancing and cold interpersonal relationships (Martinez-Monteagudo et al. 2019). Hardiness is an important predictor of mental health and physical health. Individuals with higher levels of hardiness feel psychologically better (Vagni et al. 2020).

It is important to address mental health issues in the workplace and to integrate social responsibility into everyday business practices and routines (Harnois and Gabriel 2000). Educating employees and raising their awareness of mental health for addressing mental health problems and preventing their

development is an important indicator of corporate social responsibility. Promoting good mental health practices in the workplace is one of the protective factors that can prevent mental health problems (Danna and Griffin 1999).

The purpose of the study was to investigate the prevalence of stress experienced by secondary school teachers in Slovenia and to identify it as a risk factor for the development of depression in teachers. The study also aimed at investigating prevalence of hardiness among secondary school teachers.

1.1 Stress at work

Stress is a process that takes place between the individual and the environment, and is one of the main mental burdens that individuals face in their work. Excessive physical and mental demands can lead to detrimental physical and emotional outcomes (Danna and Griffin 1999).

Perception of stress is a consequence of a situation that individuals consider important for their well-being and in which the requirements exceed their available or perceived coping strategies (Lazarus and Folkman 1986). This definition draws attention to two central mediators in the human-environment transaction, namely: cognitive assessment and strategies for coping with stress (Krohne 2002). Cognitive assessment is based on the perception of the importance and outcome of a particular event and are important for explaining individual differences in the quality, intensity, and duration of evoked emotions. Cognitive assessment is determined by a number of personal and situational factors, such as motivational dispositions, goals, values, and general expectations (Krohne 2002). In this respect, the stress process is not static but is constantly changing and is a result of the relationship between the person and the environment (Pogačnik 2012). The second central process is coping styles that vary between individuals, depending on how they assess a given stressful situation.

When an individual perceives a stressful situation as a threat, his or her experience of a stressful situation is often accompanied with negative emotions. Regressive methods of coping with stress might be a consequence of this. On the other hand, perception of stressful circumstances as a challenge is accompanied by pleasant emotions. Effective methods of coping with stress in which the individual is active and has control over the stressor are prevalent in this situation. Individuals with higher levels of hardiness are more likely to solve a problem (Grum and Musek 2009, 271-274).

Stress is unpleasant emotional experience triggered by the teachers' perception that the work situation threatens their self-esteem or well-being (Kyriacou 2001). Perceived stress can lead to the development of a depressed mood. The Canadian Community Health Survey (CCHS) in 2002 supported the link between workplace stress levels and depression. Workers who reported high levels of work stress were more likely to report depression than workers who experienced lower levels of work stress (Gilmour and Patten 2003).

Research points out that the teaching profession is stressful. The Trade Union of Education of Slovenia (SVIZ) states that 53.5 percent of teachers often or always experience stress (Slivar 2009). Additionally, The European Agency for Safety and Health at Work, in cooperation with the European Trade Union of Education, conducted a survey in 2007, the results of which showed that the teaching profession is very stressful (Drobnič, 2018).

1.2 Depression

Depression is a comorbid disease that affects an individual's well-being, his way of thinking and acting. It causes feelings of sadness, loss of interest in activities that the individual enjoyed, as well as physical problems and reduces an individual's ability both at work and at home (Parekh 2017).

A 2011 study conducted by the Office of Applied Studies of Substance Abuse and Mental Health Services Administration found that 7 percent of full-time employees had experience with depression (Woo et al. 2011). A 2009 analysis of the prevalence of mental disorders over a 12-month period showed that depression was among the three most common diagnoses in individuals aged 18 to 65 in the European Union (Krivec et al. 2009). A 2009 study by the Mental Health Economics European Network found that one in four Europeans face mental health problems each year (Turk and Albrecht 2010).

The etiology of depression is broad and includes several factors related to the treatment of various areas of an individual's functioning and existence. These areas are the following: biochemistry (i.e., differences in chemicals in the brain), genetics (i.e., heredity of depression), and personality (e.g., people with low self-esteem are more likely to experience depression), and environmental factors (e.g., exposure to abuse). The diagnosis of depression needs to be addressed holistically, taking into account both specific symptoms as well as medical and family history and environmental and cultural factors (Parekh 2017).

Symptoms of depression can be manifested as stress symptoms (Goldberg and Steury 2001). Symptoms of depression in the workplace are not difficult to identify in case of more severe form of depression (i.e. a severe depressive episode). Conversely, in milder forms of depression (i.e. a mild or moderate depressive episode) identification is much more challenging. Individuals often hide the symptoms of depression out of shame, as depressive states are still a stigma in modern society. Often, individuals are also in denial of depressed mood and related symptoms, and have a lack of motivation to seek help (Goldberg and Steury 2001).

Depression is one of the main causes of disability, so increasing investment in mental health at work is needed. Emphasis should be placed on preventive approaches to preventing mental health problems (Tan et. al. 2014). Interventions can target changes in the psycho-social aspects of the work environment as well as take into account different sources of stress in the workplace (Phelan et. al. 1991).

Depression has an impact on an individual's professional performance. Therefore, an important question from an economic point of view is whether identifying and treating employees suffering from depression is a good financial investment. A study involving 11,000 people suffering from depression, after analyzing the costs of preventing and treating depression, found that the cost of treatment was lower for an organization than the loss of working days (Goldberg and Steury 2001). Hence, organizations must strive to fulfill their duty and promote mental health in organization.

In this study, we did not assess depression in terms of diagnosis, but only the specific symptoms of depression. The study did not capture the family history or the medical history of the participants. This is also one of the weaknesses of the research. However, the purpose of the study was not to diagnose depression among teachers, but to identify whether symptoms of depression are manifesting in teachers' work or not.

1.3 Hardiness

Maddi (2016) defined hardiness as a personality trait that helps individuals to survive and cope with stressful life events. It is a pattern of relationships and strategies that allow individuals to change their view of stressful events. Not all individuals who face stressful and difficult life events are depressed. Such individuals are considered to possess higher levels of hardiness (Pollock 1986).

Hardiness is a construct that can reduce perception of stressors at work as key risk factors for developing depression (Martin et al. 2009). In a study by Servellen et al. (1994) who examined the relationship

between hardiness, workplace stress and health, workplace stress was found to be associated with more health problems and emotional exhaustion (depleted emotional state), which can lead to anxiety, depression and somatic problems. Through effective stress management strategies hardiness allows for less stress at work, less emotional exhaustion and fewer health problems. The construct of hardiness represents an intermediate factor in the human-environment transaction, namely through the formation of a positive cognitive assessment and the problem-oriented coping strategies. Hardiness can be considered as a set of personality traits that act as a source of stress resistance in stressful events (Jamal et al. 2017). In line with this, research by Rhodewalt and Zane (1989) has shown that at high levels of stress, individuals with lower levels of hardiness are on average more depressed than individuals with a higher levels of hardiness (Felsten 1996).

Hardiness levels partially stem from the rich and varied experiences in an individual's childhood and is captured in three personality traits: commitment, control, and challenge (Funk 1992). Commitment dimension can be explained as an individual's belief that sticking to his or her own goals will lead him or her to something meaningful. Control is defined as the belief that an individual can influence current life events. Challenge is defined as the belief that negative life events can be reversed to yield positive results (Servellen et al. 1994). In a study by Jemal et. al. (2017), they investigated how hardiness and stress coping strategies predict stress levels. They found that control and challenge are essential in predicting stress levels.

Hardiness mechanisms that enable effective coping with stressors are positive cognitive assessment, use of active problem-solving strategies, maintenance of healthy behaviour, and social support seeking (Avery 2014). The mechanism of positive cognitive assessment allows an individual to evaluate and perceive events more positively, which is reflected in reduced perception of events as stressful (Maddi 2016). People with a high degree of hardiness rate stressful events more positively, and see potentially negative experiences as opportunities to learn. They also feel less threatened than people with low levels of hardiness. Thus, individuals with high levels of hardiness have a greater sense of confidence that their actions will lead to successful outcomes (Maddi 2016). Research by Nowack (1989) supports a positive link between coping with stress and individual's health status.

Individuals with higher levels of hardiness use active problem-oriented and flexible coping strategies that lead to reduced tension, and improve physical and mental health. Furthermore, they can mitigate the effects of stress by adjusting stress coping strategies and by inhibiting maladaptive behaviour. They deal with stressors optimistically and actively (Maddi 2016). In contrast, people with low levels of hardiness are more likely to use regressive coping strategies or may try to avoid stressful situations. Kobasa (1982) confirmed that the use of regressive coping strategies is related to the commitment factor of the hardiness construct.

In a sample of 83 Chinese teachers (Chan 2003) it was found that hardiness could be considered as a protective factor against adverse health outcomes, as it reduces the use of passive coping strategies. Pierce and Molloy (1990) found that the use of regressive coping strategies is associated with burnout among high school teachers and can lead to depression. Therefore, hardiness might also alleviate the effects of stress and is considered as a protective factor against the development of depressed mood (Bartone and Homish 2020).

Individuals with higher levels of hardiness are inclined to maintain healthy behaviours that relate to e.g. to a healthy diet or exercise even when they are facing stress (Avery 2014). Maintaining healthy behaviours allows individuals to release tensions that can be caused by stress. Under acute stress, these individuals reported fewer illnesses than those with lower levels of hardiness (Kobasa 1982). The greater the number of stressful events, the greater is the individual's physical load (reflected in physiological state such as increased heart rate, high blood pressure, or elevated cholesterol) and psychological load

(e.g., irritability, suspicion, insomnia, or fear) (Maddi 1999). In individuals with higher levels of hardiness, physiological changes are reflected in lower-level physiological arousal than in individuals with lower levels of hardiness (Allred and Smith 1989). Also, individuals with higher levels of hardiness recover more easily when stress is no longer present (Wiebe and McCallum 1986).

Encouragement and mutual help can be identified in interpersonal relationships of individuals with higher levels of hardiness (Avery 2014). Individuals with higher levels of hardiness have stronger interpersonal relationships and thus better social support, which is one of the protective factors in the development of depression. Social support mechanisms involve deepening and strengthening an individual's relationship with significant others despite the accompanying conflict and stressors (Funk 1992).

Various studies (Woo et al. 2011; Krivec et al. 2009; Turk and Albrecht 2010) have found that depression is one of the more common and serious illnesses that individuals face in the workplace. Research by Rhodewalt and Zone (1989) has shown that at high levels of stress, individuals with lower levels of hardiness are more depressed than individuals with higher levels of hardiness (Felsten 1996).

Since the teaching profession is considered stressful, we decided to do a review of the expression of depressed mood in relation to personal strength among secondary school teachers. The aim of this study was to gain insight into how many participants face depressed mood on the job and what are their hardiness levels. Based on a review of the literature, we have formulated a hypothesis in which we proposed that secondary school teachers with higher levels of hardiness are less depressed.

2 Method

2.1 Sample

The study involved 240 participants employed as teachers in public secondary schools across Slovenia. Teachers from grammar schools, vocational and technical secondary schools participated. The sample consisted of 63 males and 177 females. The arithmetic mean age of the participants was 46.6 years ($SD = 8,88$). Stress was perceived by 85.4 percent of survey participants ($N = 205$). 32.9 percent of participants ($N = 79$) are satisfied with the salary, while 67.1 percent of participants ($N = 161$) are not satisfied with the salary they receive for their work. 89.2 percent of participants ($N = 214$) stated that they were satisfied with their work. The arithmetic mean of the variable number of years of service is 21.7 years ($SD = 9,99$). This suggests that secondary school teachers with different work experience and number of years of service participated in the study.

2.2 Materials

Beck Depression Questionnaire (BDI-II) with 21 items was applied for self-reporting. Questionnaire encompassed a four-point scale from 0 (symptom absent) to 3 (severe symptoms present) with a total of 0 to 63 points. The results of BDI-II are classified as follows: a score of 0 to 13 points indicates no depression; 14 to 19 points indicate mild depression; 20 to 28 points are indicators of moderate depression and 29 to 63 points can show severe depression. These categories are based on the intensity, duration and severity of symptoms. Higher scores indicate greater severity of symptoms. In the non-clinical population, scores above 20 points indicate the presence of depression. The internal consistency coefficient of the BDI-II questionnaire is 0.91. The reliability of the original DBI-II questionnaire in English was shown to be 0.89 (Farinde 2013).

Dispositional Resilience Scale (DRS II) was applied as well. DRS II contains 18 assumptions relating to an individual's resilience and vulnerability (Lo Bue et al. 2016). Hardiness was presented in the study

as a 6-factor model. Each dimension of hardiness represents a separate variable: control, powerlessness, commitment, alienation, challenge, and rigidity. The positive dimensions that indicate a higher level of stress resistance and are associated with a higher level of hardiness are: control, commitment, and challenge. Negative dimensions, which show greater vulnerability to stress and are associated with a lower level of hardiness are: helplessness, alienation and rigidity. An individual responds to claims on a 5-point scale (1 means definitely false, 5 means definitely true) (Sinclair and Oliver 2003).

2.3 Procedure

We used purposeful sampling for the purposes of this research. We contacted teaching personnel via personal networks and asked them to share the questionnaire within their own professional networks. Participants were provided with questionnaires in online form. 1ka software was used for creating an online questionnaire. Data collection took about 3 months. After obtaining the questionnaires, we analysed the results with the help of the SPSS program (Statistical Package for the Social Sciences).

3 Results and discussion

Statistical Package for the Social Sciences (SPSS.24) program was used to analyse the results. According to the data, no depressed mood was expressed in 212 participants. Fifteen participants were classified into mild depression category, which may indicate that some of the symptoms of depression are present in participants. With this in mind, it can be concluded that those participants can have minor difficulty performing normal work or social activities. In addition, 13 participants were classified as moderately depressed and may experience problems in social, work and domestic activities. None of the participants fell into the category of severe depression (ICD-10 Version: 2010, 2019).

Table 1. Normality of the distribution of the instruments.

Variable	Kolmogorov-Smirnov koef (p)
Gender	0,00
Age	0,02
Number of working hours/week	0,00
Working years	0,00
Perception of work stress	0,00
Pay satisfaction	0,00
Work satisfaction	0,00
Region of work	0,00
<i>Dispositional Resilience Scale</i>	
Control	0,00
Powerlessness	0,00
Commitment	0,00
Alienation	0,00

Challenge	0,00
Rigidity	0,00
<i>Beck's Depression Questionnaire</i>	0,00

From Table 1 it can be seen that the variables are not distributed normally, so we used the Spearman correlation coefficient for further analysis. This takes into account the ranks and not the actual value of the variables.

Table 2. Reliability of the questionnaires.

	No. of items	α	Stand. α
Beck's Depression Questionnaire	21	0,874	0,878
Dispositional Resilience Scale	18	0,383	0,351

Table 2 shows internal consistency of Beck's Depression Questionnaire and Dispositional Resilience Scale. It can be seen that Beck's Depression Questionnaire shows good internal consistency. On the other hand, Dispositional Resilience Scale has unacceptable internal consistency.

Table 3: Relationships between Beck's Depression Questionnaire and Dispositional Resilience Scale.

	Con	Pow	Com	Ali	Cha	Rig
Depression	-0,283**	0,300**	-0,204**	0,271**	-0,247**	0,040

Note. Con = Control; Pow = Powerlessness; Com = Commitment; Ali = Alienation; Cha = Challenge; Rig = Rigidity.

Table 3 also shows the relationship between the Beck Depression Questionnaire and the Dispositional Resilience Scale. The table shows that the variable depression is statistically significantly negatively associated with the hardiness control factor ($p = -0.283 **$). The control factor is placed among the positive dimensions within the construct of hardiness, which indicate a higher degree of resistance to stress and related depression. Individuals who express a depressed mood have a lesser sense of self-efficacy and a lesser sense of control that they can influence life events.

There is also a statistically significant negative relationship between depression and commitment ($p = -0.204 **$) and challenge ($p = -0.247 **$) factors, which are also classified as a positive dimension of hardiness. This suggests that individuals who do not express a depressed mood are more likely to see stressful events as challenges and are interested in and trying to influence life activities. Powerlessness and alienation are factors that are classified in the negative dimension of hardiness. The table shows that both of these factors are statistically positively associated with depression ($p = 0.300 **$ and $p = 0.271 **$). According to the theory, individuals with a depressed mood have a feeling of meaninglessness and

loneliness (alienation factor) and a feeling of helplessness and devotion to destiny (powerlessness factor). The rigidity factor is not statistically significantly associated with depression.

Table 4: Binary logistic regression of the depressive mood expression model.

Independent variables	b	SE(b)	p	β	95 % confid interv. β	
					low. limit	up. limit
Control	0,009	0,167	0,957	1,009	0,727	1,400
Powerlessness	0,359	0,122	0,003	1,432	1,128	1,818
Commitment	-0,173	0,186	0,352	0,841	0,585	1,211
Alienation	0,121	0,095	0,202	1,129	0,937	1,360
Challenge	0,092	0,139	0,508	1,097	0,835	1,441
Rigidity	0,006	0,095	0,511	1,064	0,884	1,281

Notes: b = non-standardized regression coefficient; SE (b) = standard error of estimate b; p = statistical significance ($p \leq 0.05$); β = standardized regression coefficient

From Table 4, we can see that the binary logistic regression model contains the following independent variables: control, powerlessness, commitment, alienation, challenge, and rigidity. The model explains the likelihood that participants have a depressed mood. We can see that powerlessness is the only hardiness factor that is statistically associated with the expression of depressed mood ($p \leq 0.05$). For the remaining independent variables, it can be observed that they are not statistically associated with the expression of depressed mood. The odds ratio of the independent impotence variable is 1,432. This means that the prospect of expressing depressed mood for individuals who have a feeling of powerlessness and devotion to destiny is 14.32 percent higher than for individuals who do not have a feeling of powerlessness.

Table 5. Assessment of the adequacy of the depressive mood expression model.

	R^2	X^2	p
A model for predicting the presence of depressive symptoms	0,150	5,584	0,694

Based on the calculated coefficient of determination ($R^2 = 0.150$) with the binary logistic regression model (Table 5) we explain 15 percent of the variability of the dependent variable (expression of depressed mood). The estimated proportion of explained variance is low. The Hosmer-Lemeshow test showed that the significance of the Hi-square is more than 0.05 ($p = 0.694$), which means that the model fits the data well. The factors of hardiness included in the model (control, powerlessness, commitment, alienation, challenge, and rigidity) thus explain only a certain proportion of the expression of depressed mood. The remaining share may be explained by other important factors related to the severity of depressed mood (eg gender, interpersonal relationships, family circumstances, job satisfaction, etc.)

4 Conclusion

Research has confirmed a link between hardiness and depressed mood among secondary school teachers. In individuals with lower levels of hardiness feeling of helplessness is more pronounced, and this is related to depressed mood. Individuals with lower levels of hardiness have a lesser sense of self-control over events, which is reflected in the presence of more negative emotions such as anxiety, frustration, dissatisfaction, and mistrust. They are more likely to use regressive stress management strategies, which is associated with a greater chance of developing depressed mood.

Encouraging the development of techniques and strategies of hardiness in secondary schools can be one of the prevention factors associated with depressed mood among secondary teachers. Adherence to hardiness strategies enables growth, wisdom, increased efficiency and good health.

4.1 Study limitations and further research possibilities

Hardiness is a broad and extensive concept that has so far been placed in various theoretical starting points and research. Previous research in this field is based primarily on the use of simple connections and discriminatory analyses. One of the disadvantages of our research is the sampling type and inhomogeneity of the sample, as secondary school teachers of different ages as well as with different number of years of service participated in the research. As part of their career as a secondary school teacher, participants have a variety of work experiences that can be an important factor when an individual is facing stress.

Based on the data obtained with the Beck Depression Questionnaire, we cannot conclude that individuals express a depressed mood. The study did not cover all the factors necessary to clinically diagnose depressed mood. We can only emphasize the contextual characteristics of stressful events and cognitions that may be associated with the onset and duration of depressive symptoms. The internal consistency of Dispositional Resilience Scale was also very low, so a dilemma arises as to whether the interpretation of the data obtained made sense.

In the future, researchers should focus on exploration of the mitigating effects of hardiness and on studying its indirect effects. Further theoretical research is also needed to offer a comprehensive overview of hardiness and its mechanisms.

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