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**Ph.D. THESIS RESUME**

**TEACHER BURNOUT PREVENTION THROUGH DEVELOPMENT OF  
SOCIAL-EMOTIONAL COMPETENCIES, RATIONALITY AND SATISFACTION OF  
BASIC PSYCHOLOGICAL NEEDS**

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**Keywords:** emotional exhaustion, depersonalization, personal accomplishments, teacher burnout, basic needs satisfaction, social-emotional competencies, rational beliefs, irrational beliefs, REBT-based coping skills intervention

# CHAPTER I. THEORETICAL BACKGROUND

## 1. INTRODUCTION AND RESEARCH TOPIC

Teaching is one of the most stressful professions. Relationships between teacher well-being, burnout, and the implied cognitive, motivational, and social-emotional factors need to be further investigated, in detail, to better understand these phenomena and the underlying mechanisms of burnout. Development and testing of specific intervention programs on burnout prevention and reduction are considered a necessity in the psychoeducational context of school-related well-being. This thesis proposes to contribute to the scientific literature in better understanding and exploring ways to reduce and prevent teacher burnout.

Teachers' performance and well-being are influenced in a high degree by motivational and affective factors, as interest, motivation, self-efficacy, goals, flow, etc. (Bakker, 2005; Caprara, Barbaranelli, Borgogni, & Steca, 2003; Retelsdorf, Butler, Streblow, & Schiefele, 2010; Pelletier, Seguin-Levesque, & Legault, 2002; Roth, Assor, Kanat-Maymon, & Kaplan, 2007). In this thesis we will focalize our attention on motivational (self-determination), social-emotional (social-emotional competencies) and cognitive characteristics (rational and irrational beliefs) of teachers, and their relationships and influence on teacher well-being and burnout.

### 1.1. Burnout and well-being

Many teachers show high rates of mental health problems, such as burnout, anxiety, depression, chronic and prolonged stress (Rovero, 2004). Burnout is the „index of the dislocation between what people are and what they have to do. It represents an erosion in values, dignity, spirit, and will." (Maslach & Leiter, 1997, p. 17). Maslach (1982) described the widely used concepts of emotional exhaustion, depersonalization, and reduced personal accomplishment, and later, Maslach (2003, p. 189) specifies that „Job burnout is a prolonged response to chronic emotional and interpersonal stressors on the job and is defined (...) by the three dimensions of exhaustion, cynicism, and sense of inefficacy". Emotional exhaustion refers to being emotionally drained, overwhelmed by one's work, not having the energy to face the challenges of work anymore, while depersonalization is a cynical, overly detached attitude towards one's object of work, as a defensive coping strategy. Reduced personal accomplishments involve a lack of efficiency felt in the work context. Emotional exhaustion was considered the most burning aspect of burnout, but a recent study conducted by Leiter and Maslach (2016) showed the importance of all three burnout factors in considering the burnout phenomenon and also the importance of more in detail analysis on depersonalization/cynicism and low personal accomplishment/inefficacy, to better understand burnout, its development, and prevention and reduction strategies.

Emotional demands, negative work-home interference, and workload are considered risk factors in burnout development in health care professionals, based on Bria, Băban, and Dumitrașcu's systematic review (2012). Factors more commonly leading to burnout are work overload, value conflicts, lack of control, insufficient rewards, lack of support, and lack of a sense of community and a sense of inequity within the organization. Burnout influences the motivation of teachers, their emotional and physical health, and their intention to leave the teaching career (Hakanen, Bakker, & Schaufeli, 2006), which can lead to absenteeism and harder, but automatized, robot-type work (Billingsley, 2004).

The most important professional stress and burnout models are those described by Karasek (1979; Karasek & Theorell, 1990), the job demands-control model (freedom and the possibility to choose and control one's work behavior), later enriched with the employee's perception of social support (JD-CS-Job Demand Control Support); Friedman's model (2000) of cognitive and emotional stress (personal and professional unfulfillment, emotional overload and exhaustion); Elfering, Semmer, & Kälın's model (2000) regarding unrealistic, idealistic teacher expectancies; Winnubst (1993) model, which includes lack of social support and deficient organizational structure; conservation of resources theory (COR, Hobfoll, 1989). The Job demands-control model sustains that job demands, physical or psychological, do not affect directly employees' burnout levels, the perceived control is the factor most relevant leading or not to dissatisfaction and eventually to burnout. There is also an association of support for teacher efficacy and commitment (Day & Gu, 2007) and teachers' self-reported competence feelings show a negative association with the depersonalization factor of burnout (Pillay, Goddard, & Wilss, 2005).

Relatedness with students is associated with lower levels of burnout, anxiety, and anger in teachers (Klassen, Perry, & Frenzel, 2012; Collie, 2014). Teachers who report higher levels of burnout are less committed to and less engaged in teaching activities and less supportive of introducing and testing new practices, report more

negative interactions with students, more somatic complaints, have more days off work and consider in a higher rate the possibility to leave the teaching profession, than those that report lower levels of burnout (Han & Weiss, 2005).

Aeltermann, Engels, van Petegem, & Verheghe (2007) define teacher well-being as „a positive emotional state, which is the result of harmony between the sum of specific environmental factors on the one hand and the personal needs and expectations of teachers on the other hand” (2007; p.286). Relationships with parents, available support, self-efficacy, attitudes towards innovation, and work pressure explain 54% of the variance in teacher well-being (Aelterman et al., 2007). Schaufeli and Salanova (2014) describe burnout and work engagement as distinct forms of well-being, although they are in a significant relationship. Well-being is often assessed in the literature by self-efficacy, burnout, job satisfaction, positive affect, and negative affect. Positive indicators of well-being include motivation, job satisfaction, self-esteem, self-efficacy, and a positive view of self.

The transactional model of stress and coping emphasize the effects of emotions on well-being (Lazarus, 1991; Lazarus & Folkman, 1987). Experiencing negative emotions for a longer period can be associated with decreased well-being in individuals. Dysfunctional and irrational beliefs can heighten negative emotions' intensity and frequency. Perceptual bias and negative thoughts, for example, can lead to perceiving external information and stimuli as being stressful or threatening, which then reinforces the negative thoughts and emotions, leading to ineffective coping and so on. Teachers' beliefs and cognitive evaluations of their relationships with students (along with the emotions experienced) influence the level of their well-being (Chang, 2009).

Active coping and problem-solving strategies, availability of social support, and emotional intelligence are protective factors regarding burnout (Chan, 2006; Lee, & Ashforth, 1993); while values and cynicism seem to be connected (Folkman, 2008). Teachers who feel competent and autonomous, are involved in decision-making processes and have good relationships with students, parents, and colleagues, are more protected from experiencing burnout, than those teachers that do not show these characteristics (Caprara, Barbaranelli, Steca, & Malone, 2006; Kyriacou, 2001). The lack of autonomy on the job is a predictor of emotional exhaustion and job dissatisfaction (Skaalvik & Skaalvik, 2007).

Prevention implies strengthening individual characteristics and modifying environmental variables. On the personal level, it is important to separate work and other life domains, to set clear self-borders, values, needs, and expectations, to learn to say no, to develop active coping strategies and the ability to self-reflect, implement a healthy lifestyle, set priorities and goals. On the organizational level, it is important to create a supportive environment, where support and resources are available, promote pro-social behaviors, offer context for success, for active self-regulation, and co-regulation (Klusmann, Kunter, Trautwein, Lüdtke & Baumert, 2008; Salmela-Aro, Tolvanen, & Nurmi, 2011). Also, it's useful to develop a detached concern (Maslach & Pines, 1977), dealing with stress more intellectually, decreasing involvement in stress situations, and maintaining supportive meaningful relationships.

Many interventions focus on relaxation techniques, meditation, and/or cognitive behavior therapy components, but effectiveness studies show inconsistent results regarding these intervention programs' success in preventing or ameliorating stress symptoms and improving teachers' well-being. Study results show that mindfulness and acceptance therapy-based interventions can be effective in producing positive changes in vulnerable populations (Jeffcoat & Hayes, 2012; Johnston, Foster, Shennan, Starkey, & Johnson, 2010; Muto, Hayes & Jeffcoat, 2011). Studies also suggest that organizational variables are more important in burnout than individual personality factors. Randomized controlled trials testing the effectiveness of social-emotional competence improvement programs combined with mindfulness elements have found beneficial effects of these interventions, even assessed after 2 years, such as more emotional support offered by teachers, lower levels of anxiety and stress, burnout, increased levels of mindfulness, and of caring not only for their students but also for themselves. (Domitrovich, Gest, Gill, Bierman, Welsh, & Jones, 2009; Hagelskamp, Brackett, Rivers, & Salovey, 2013; Roeser et al., 2013).

Significant decrease of emotional exhaustion level of employees was found due to participation in interpersonal skills development and rational-emotive therapy training, a cognitive-behavioral program with assertiveness training elements, relaxation techniques, coping skills development (Jennings și colab., 2017; Roeser și colab., 2013; Salmela-Aro, Näätänen, & Nurmi, 2004). The interventions focused on reducing feelings of inequity, training related to improved use of personal abilities and social support, and increasing the skills that help employees manage high job demands and low job control more efficiently. Offering and/or seeking peer support can be beneficial for reducing emotional exhaustion, while skill development training can be effective for the other two factors (Cohen & Gagin, 2005).

Awa, Plaumann, and Walter's review (2010) of burnout prevention-oriented intervention programs conclude that the most beneficial programs in burnout prevention are those that are both person and organization directed (Blonk, Brenninkmeijer, Lagerveld, & Houtman, 2006). Overall, one of the most efficient ways to decrease teacher stress, burnout and increase teacher well-being is to offer opportunities and support for teachers to learn stress

management skills (Brackett, Palomera, Mojsa, Reyes, & Salovey, 2010; Chan, 2006; Vesely, Saklofske, & Leschied, 2013).

## **1.2. Self-efficacy**

Teacher self-efficacy refers to teachers' beliefs that they can influence the quality of their student's learning, even difficult, and unmotivated student's learning (Guskey & Passaro, 1994). In teachers' case, we need to distinguish between general and personal self-efficacy. General self-efficacy means that teachers believe that they can influence students learning, beyond and despite their negative social, economic, or demographic characteristics. Personal self-efficacy is related to beliefs about their personal ability to influence student learning and behavior (Gowie, & Cheryl, 2010; Tschannen-Moran, Hoy, & Hoy, 1998). Both are influenced by previous teaching and class management experiences, beliefs, and behavior, and are predictors of future behavior (Gibson & Dembo, 1984; Raudenbush, Rowan, & Fai Cheong, 1992).

Self-efficacy is associated with job satisfaction and burnout (Brouwers & Tomic, 2000; Caprara et al., 2003; Klassen & Chiu, 2010; Moè, Pazzaglia, & Ronconi, 2010; Skaalvik & Skaalvik, 2007), student performance (Caprara et al., 2006), and more efficient coping strategies in stressful situations (Bandura, 1997). Interculturality studies show that these relationships can be generalized to different cultural contexts (Vieluf, Kunter, & van der Vijver, 2013).

## **1.3. Basic needs satisfaction and teacher burnout**

Edward Deci and Richard Ryan developed the self-determination theory in the '80s, followed by a lengthy line of researchers and practitioners and further development of the theory (Deci & Ryan, 1985b, 2000; Niemiec, Ryan, & Deci, 2010; Ryan & Deci, 2000). The Basic psychological needs theory (Ryan & Deci, 2002), one sub-theory of the self-determination theory, is based on the assumption that every individual is born with basic psychological needs essential for their development, growth, and optimal functioning. These are the need for autonomy, the need for competence, and the need for relatedness. The need for autonomy (conceptually derived from the definition of deCharms, 1968) refers to the level of autonomy exercised over one's behavior, the individuals' need to influence, freely choose, and modify his/her behavior (Ryan & Deci, 2000, 2002). The need for competence (White, 1959) is the need to feel efficient in whatever one does. The need for relatedness (Baumeister & Leary, 1995) is the individuals' innate need to interact with other individuals, to initiate and maintain meaningful relationships (Ryan & Deci, 2002).

Contextual and environmental factors are, thus, important in the satisfaction or thwarting of the basic psychological needs. An environment supportive of autonomy in decision making and behavior is related to autonomy need satisfaction, a structured environment contributes to competence need satisfaction, while an empathetic environment that focuses on quality relationships, promotes relatedness need satisfaction, related to social competence and secure attachment, as well (Sierens, Vansteenkiste, Goossens, Soenens, & Dochy, 2009). Whenever basic needs are not satisfied, individuals tend to develop problematic, rigid behavior, and specific need substitutes. Whenever psychological needs are satisfied, people pay more attention to their environments and the needs of others, alongside their own (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Optimal functioning is then influenced by the degree to which basic psychological needs are satisfied and autonomy is experienced by individuals in their actions (Rudy, Sheldon, Awong, & Tan, 2007). High levels of self-determination are related to high satisfaction of basic psychological needs (Deci & Ryan, 2000; Ryan & Deci, 2000, 2002), which is associated with job satisfaction, autonomous and intrinsic motivation, work engagement and time spent at work, occupational well-being and performance (Gagne, 2003; Greguras & Diefendorff, 2009; Ilardi, Leone, Kasser, & Ryan, 1993; Klassen et al., 2012; van den Broeck, Vansteenkiste, de Witte, & Lens, 2008). The perceived satisfaction of the need for competence is a significant predictor of teachers' positive emotions related to teaching, intrinsic motivation, depersonalization, and personal accomplishment, while autonomy need satisfaction is a significant predictor of emotional exhaustion (Caprara et al., 2006; Gagne & Deci, 2005; Klassen et al., 2012; Ryan & Deci, 2000; Van den Broeck et al., 2008).

## **1.4. Social-emotional competencies and teacher burnout**

The definition offered by the CASEL (Collaborative for Academic, Social and Emotional Learning) framework (Collaborative for Academic, Social and Emotional Learning, 2008a, b, c); Zins, Weissberg, Wang, & Walberg, 2004) describes five core social-emotional competencies: self-awareness, social awareness, self-management, relationship skills, responsible decision-making. Self-awareness competencies include identification,

labeling of emotions, thoughts, strengths, and weaknesses, a sense of realistic self-confidence. Social-awareness refers to being empathetic, understanding diversity, and social-cultural norms, but also identifying support opportunities and resources within the community one lives in. Self-management refers mainly to self-regulation, including emotions, behavior, impulse control, thought processes, in order to feel and perform better. Relationship skills comprise the ability to form and sustain positive, healthy relationships with others, including effective communication, assertiveness, offering and accepting help, efficient conflict management. Responsible decision making is the ability to make responsible decisions, based on consequence evaluation, consideration of norms and ethics, of the needs, responsibilities, and well-being of self and others.

Teachers' social-emotional competencies are important for their own and their students' well-being (Brackett et al., 2010). Teacher social-emotional learning (SEL) and stress are related, SEL being associated with higher well-being, while low SEL is associated with lower job satisfaction, higher levels of stress and burnout, according to the „burnout cascade model” proposed by Jennings and Greenberg (2009). Teachers who cannot manage their emotions can experience negative emotions more frequently, thus leading to difficulties in cognitive functioning, a decrease of self-efficacy and motivation, and eventually to burnout (Sutton & Wheatley, 2003; Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010).

Interventions encompassing emotional intelligence components (including mindfulness-based and practical training) are efficient in developing stress management strategies, emotion regulation, increasing job satisfaction and organizational commitment, resilience, and well-being, also reducing occupational stress (Gardner, 2005; Hansen, Gardner, & Stough, 2007; Poole & Saklofske, 2009).

There is a need for emotion competencies development of teachers, both in teacher preparation and in professional development programs (Palomera, Fernandez-Berroca, & Brackett, 2008), considering that teachers who are more intelligent emotionally have more positive emotions while doing their job, are more satisfied with their jobs, are more likely to get support from their superiors and report lower levels of burnout (Brackett et al., 2010). Stressed teachers report more negative emotions, thus less efficient emotion management and deficient self-regulation, which can lead to job dissatisfaction and leaving the profession (Darling-Hammond, 2001).

### **1.5. Rational and irrational beliefs and teacher burnout**

Teacher stress is predicted by high levels of irrational beliefs and low self-efficacy (Robertson & Dunsmuir, 2013). There is a significant relationship between irrational beliefs and depression and teacher's job satisfaction, intention to leave, and teacher efficacy (Green, 2014). Considering these, we find it important to include teachers' irrational and rational belief system evaluations in our studies investigating teacher burnout.

Ellis's rational-emotive therapy and the rational-emotive behavior therapy (REBT) (1962, 1979b) is an evidence-based clinical approach to stress management, based on the main assumption that situations, circumstances, and stressors are not stressors in themselves (usually and commonly), but by the interpretation's individuals give them. Beliefs can be rational (consistent with reality and logical) and/or irrational (illogical, inconsistent with reality) and have a major impact in interpreting the situation, moreover on the cognitive, emotional, and behavioral responses one gives to a certain situation. In the case of rational beliefs, individuals engage in constructive coping or ignore the activating event. In the case of irrational beliefs, however, individuals exaggerate the effects of the activating events, become stressed, experience exaggerated emotions, and have difficulty in engaging in constructive coping with the situation. Low frustration tolerance, high levels of need for achievement and approval from others, authoritarian attitudes, catastrophizing, overgeneralization, selective absorption, black and white thinking, arbitrary inference, personalization, magnification or minimization are related to high levels of teacher stress, burnout, anxiety, depression, and reduced use of active constructive coping strategies (Bernard, 1988; Calvete & Villa, 1999; Spiegler & Guevremont, 2003).

Teacher education programs or teacher professional development programs lack rational emotive behavior therapy-based training and strategy development for teachers themselves, and there is an ignorance of admitting teachers' roles in modeling rational thinking (Ellis & Dryden, 1997; Vernon, 2004). Rational emotive behavior therapy can help in decreasing the intensity of negative emotions and behaviors (David, Szentagotai, Eva, & Macavei, 2005) and can be used effectively with teachers (Bernard & DiGiuseppe, 1994), as it is effective in reducing irrationality and increasing self-efficacy (Warren, 2010b). A relatively small number of studies investigated the effectiveness of irrational beliefs reduction programs on teacher well-being. Forman's study (1982) conducted on teachers involved presentation of teacher stress conceptual framework, relaxation techniques, cognitive restructuring techniques, rehearsal, and application of these. The results show that training for reducing irrational beliefs help teachers reduce their stress and anxiety, even at follow-up, but the results do not show if these reductions are indeed caused by the reduction of irrational beliefs. Studies also confirmed the positive association between teacher stress,

burnout and irrational beliefs and the effectiveness of rational emotive health education interventions, and REBT interventions with assertiveness elements on teacher stress management and on overcoming irrational beliefs, increase in well-being scores (Jesus & Conboy, 2001; Ugwoke et al., 2017; Zingle & Anderson, 1990). Low frustration tolerance and authoritarian attitudes towards students were significantly related to teacher distress symptoms, emotional exhaustion, depersonalization, anxiety, and depression (Bermejo-Toro & Prieto-Ursua, 2006).

A systematic literature review (Robertson, 2010) on studies investigating the effectiveness of REBT programs in teacher stress, anxiety reduction, and classroom management improvement, concluded that interventions developed in an REBT framework and combined with training on stress management, have a significant effect on teacher stress and anxiety reduction, compared to no intervention or interventions that do not comprise relaxation techniques (Cecil & Forman, 1990; Forman, 1982; Salami, 2007). Still, their effectiveness is almost equivalent to interventions that comprise only alternative relaxation, classroom management training, or participation in support groups (Cecil & Forman, 1990; Salami, 2007).

Although teacher stress and burnout are relevant concerns for the educational system, professional development programs seem to ignore the need to address these concerns and to focus on teaching and developing strategies for teachers to teach themselves and take care of themselves (Hill, 2009). Implementation of REBT in teacher education programs could be a major contribution to the complex process of combating and reducing teacher stress and burnout and to increasing well-being (Nucci, 2002).

## 2. RELEVANCE AND IMPACT OF THE RESEARCH TOPIC

Burnout is a very common and devastating phenomenon. Teachers, in particular, are highly susceptible to develop and experience burnout, among all professions. The costs of teacher burnout are immense, involving the teacher, the students, the parents, the schools, the educational system, directly and/or indirectly. The present research is relevant in many perspectives. From a theoretical perspective, it contributes to the further clarification of personal and context-related factors in teacher burnout and of the factors that could contribute to reducing and/or preventing it. We considered motivational, social-emotional, and cognitive variables when investigating these relationships throughout this research project.

From a practical perspective, the research is relevant in the development and testing of an intervention specifically designed to reduce teacher burnout and increase teacher rationality, and social-emotional competencies. Based on the results and conclusions of the present research, teacher education and teacher professional development programs could integrate personal development programs to better prepare teachers not only for the methodological aspects of their future or actual jobs, but also for facing and coping with the emotional challenges that the teaching career involves on a personal level. In this respect, prevention and early intervention in teacher burnout would be possible. Thus, the most relevant aims of this research project are (1) to understand the relationships between teacher burnout and cognitive, socio-emotional and motivational factors, and (2) to design and implement an intervention that considers these relationships in preventing and reducing teacher burnout. One of the major assets of the present research is also the integration of educational, cognitive-behavioral, clinical, and organizational psychology perspectives, contributing to the high applicability of the results in the complex school context.

## CHAPTER II. GENERAL OBJECTIVES AND METHODS OF THE RESEARCH

The general aim of this research project is (1) the identification of the relationships between teacher burnout and personal cognitive and noncognitive factors, as rational/irrational beliefs, social-emotional competencies and basic needs satisfaction, and (2) testing the effects of an intervention encompassing these factors on teacher burnout prevention/reduction. We propose to attain these objectives by applying different methods, i.e., correlation, mediation, and difference in means.

The **first specific objective** was to investigate the relationship between basic needs satisfaction and burnout. We conducted a correlational study (Study 1) and a quantitative meta-analysis (Study 2) to identify the specific relationships, and their magnitude, between the need for autonomy, need for competence, need for relatedness and emotional exhaustion, depersonalization, and personal accomplishments, respectively. The mediators of the relationship between teacher depersonalization and personal cognitive and noncognitive factors (social-emotional competencies and basic needs satisfaction) were explored in Study 3.



Our **second specific objective** was testing the effects of a specific intervention based on competence development on reducing/preventing teacher burnout. Thus, a complex intervention, encompassing REBT elements, assertive training, conflict management, mindfulness, was implemented and tested in an experimental study, aiming to develop teachers' social-emotional competencies, to increase their rationality and personal accomplishments, and to reduce their emotional exhaustion and depersonalization levels (Study 4).

From a theoretical implications aspect, our research project contributes to a more thorough understanding of the relationships between teacher burnout factors and needs, competencies, and beliefs. As relationships between these constructs have been investigated in several studies, few or none, in our knowledge, studied them all together. The present research project comprises fundamental research, but also practical/clinical implications.

The methodological development and practical applications are interconnected, as we have adapted and tested the effectiveness of an REBT - based intervention on teacher burnout prevention/reduction, rationality, and social-emotional competence development. This intervention could be a valuable evidence-based tool in teacher education and in in-service teachers' professional development programs for promoting teachers' mental health, preventing burnout and promoting the very necessary, but still mostly ignored, personal development aspect of teacher training programs.

## CHAPTER III. ORIGINAL SCIENTIFIC RESEARCH

### Study1. Burnout in Hungarian High School Teachers: The Role of Self-Efficacy and Basic Needs Satisfaction<sup>1</sup>

#### 1. Introduction

Teacher burnout has serious implications for teacher and student performance and well-being (Montgomery & Rupp, 2005). Teachers experiencing emotional exhaustion, depersonalization, and a sense of low personal achievement are less satisfied with their jobs, less motivated, and more prone to psychological and physical illness. Considering these consequences, it is important to further examine the factors contributing to it and the possibilities to prevent and/or reduce it. Our study aims to investigate Hungarian teachers' burnout levels and the association between emotional exhaustion, depersonalization, personal accomplishment, and perceived satisfaction of the three basic psychological needs posited by the self-determination theory (Deci & Ryan, 1985b, 2000). The relationship of these factors with perceived teacher self-efficacy was also considered.

The results of previous studies show a positive association between teachers' satisfaction of basic psychological needs, commitment, and emotional exhaustion. Also, the perceived satisfaction of the need for competence is a predictor of teachers' intrinsic motivation (Caprara, Barbaranelli, Steca, & Malone, 2006) and experiencing positive emotions regarding teaching. Teachers experiencing a high level of satisfaction with the need for autonomy, competence, and relatedness) are more satisfied with their jobs than teachers who perceive a lower level of psychological need satisfaction (Kyriacou, 2001).

Teacher self-efficacy is associated with teacher and student outcomes, job satisfaction, and burnout in teachers (Skaalvik & Skaalvik, 2010) motivation and performance, coping, and motivation (Caprara et al., 2006).

Research has identified several predictors of burnout: high job demands, lack of social support, decrease in self-efficacy (Skaalvik & Skaalvik, 2010), time pressure, quality of relationships, length of time spent in the same profession. The nature of the work environment is essential in understanding burnout, thus, the satisfaction of the basic psychological needs for autonomy, competence, and relatedness in the work setting are relevant indicators in burnout research. Teachers are more susceptible to burnout, when they experience pressure and control or when they experience a lack of satisfaction of their basic psychological needs at work (Bartholomew, Ntoumanis, Cuevas, & Lonsdale, 2014; Fernet, Guay, Senecal, & Austin, 2012; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008).

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<sup>1</sup> This study has been published in this form.

BURNOUT IN HUNGARIAN HIGH SCHOOL TEACHERS: THE ROLE OF SELF-EFFICACY AND BASIC NEEDS SATISFACTION In 2nd International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM2015, Book 1, Vol. 1, No. SGEM2015 Conference Proceedings, ISBN 978-619-7105-44-5 / ISSN 2367-5659. (2015), DOI:10.5593/SGEMSOCIAL2015/B11/S1.005 by E. Maior, I. Szamoskozi, R. Janos

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Based on previous research findings, our study aims to identify the relationships between burnout factors, self-efficacy, and psychological need satisfaction in a teacher sample and to highlight the differences between Hungarian and Transylvanian high school teachers in the measured variables. Another purpose of the study is the identification of teacher burnout predictors.

## 2. Method

### 2.1. Participants

220 highschool teachers took part in the study, 72 Transylvanian Hungarian (32.7%), and 148 Hungarian (Hungary) teachers (66.7%). The gender distribution of the sample was 60 males (27%) and 160 females (72.1%). Gender distribution by country is: Hungarian sample: 43 male (29.1%) and 105 females (70.9%), Transylvanian sample: 17 male (23.6%) and 55 females (76.4%). The age of the participants ranged from 23 to 62 years ( $M=41.82$ ,  $SD=9.19$ ). Participants mean age by country: Hungarian sample: 42.33 ( $SD=9.1$ ), between 26-62; Transylvanian sample:  $M=40.78$  ( $9.37$ ), between 23 and 61 years of age.

162 teachers (73%) taught in classrooms with over 23 pupils, 43 teachers (19.4%) in classrooms with 15-22 students, and 13 of them (5.9%) in classrooms with fewer than 15 students.

Regarding teaching experience, 145 teachers (65.3%) had over 10 years of teaching experience, 42 had (18.9%) a 6 to 10 years of experience in teaching, 22 of them (9.9%) had an experience ranging from 3 to 6 years and finally, 10 teachers (4.5%) have been working in the field for less than 3 years.

### 2.2. Measures

#### *Demographic data form*

Demographical data, general information regarding the teaching experience, school profile, class sizes, subject taught were collected based on the Demographic data form.

*Basic Need Satisfaction at Work Scale (Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001)* is a 21-item scale, comprising 3 subscales for the satisfaction of the basic psychological needs of autonomy, competence, and relatedness. Participants were asked to evaluate on a 7-point scale the degree to which they agree or disagree with the statements of the scale ( $1 = strongly disagree$ ,  $7 = strongly agree$ ).

*Teacher Efficacy Scale (Short Form), (Tschannen-Moran, Hoy, & Hoy, 1998)* is a 10-item scale, comprising 2 subscales: general self-efficacy, personal self-efficacy. Participants were asked to evaluate on a 7-point scale the degree to which they agree or disagree with the statements of the scale ( $1 = strongly agree$ ,  $6 = strongly disagree$ ).

*Maslach Burnout Inventory-Educator Survey (Maslach, Jackson, & Leiter, 1996)* is a 22-item scale, grouped in 3 subscales: emotional exhaustion, depersonalization, personal accomplishment. Participants were asked to evaluate on a 7-point Likert-type scale the degree to which they agree or disagree with the statements of the scale ( $0 = never$ ,  $6 = every day$ ). We used translated versions of all questionnaires.

## 3. Results

Statistical Software (SPSS 20.0) was used for data analysis. We found significant correlations between burnout components, need satisfaction and teacher perceived efficacy. Table 1 presents the means, standard deviations, and significant correlations.

Table 1. Means, standard deviations and correlations between burnout components, basic needs, and teacher self-efficacy

	<b>M (SD)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>1</b>	22.10 (10.35)	1	.53**	-.43**	-.52**	-.45**	-.29**	-.49**	-.15*	-.16*	-.19**
<b>2</b>	5.02 (4.48)	.53**	1	-.47**	-.37**	-.46**	-.23**	-.40**	-.26**	-.07	-.24**
<b>3</b>	36.00 (6.71)	-.43**	-.47**	1	.45**	.51**	.27**	.48**	.25**	.13	.27**
<b>4</b>	33.87 (7.58)	-.52**	-.37**	.45**	1	.69**	.55**	.89**	.26**	.21**	.32**
<b>5</b>	32.90 (5.42)	-.45**	-.46**	.51**	.69**	1	.45**	.81**	.37**	.14*	.36**
<b>6</b>	41.88 (7.89)	-.29**	-.23**	.27**	.55**	.45**	1	.82**	.07	.02	.06
<b>7</b>	108.57 (17.63)	-.49**	-.40**	.48**	.89**	.81**	.82**	1	.26**	.15*	.28**
<b>8</b>	25.41 (5.05)	-.15*	-.26**	.25**	.26**	.37**	.07	.26**	1	.15*	.85**
<b>9</b>	13.69 (3.36)	-.16*	-.07	.13	.21**	.14*	.02	.15*	.15*	1	.63**
<b>10</b>	39.09 (6.49)	-.19**	-.24**	.27**	.32**	.36**	.06	.28**	.85**	.63**	1

Notes. \*Correlation is significant at 0.01 level; \*\*Correlation is significant at 0.05 level

1 Emotional exhaustion, 2 depersonalization, 3 personal accomplishment, 4 autonomy, 5 competence, 6 relatedness, 7 BNS total, 8 personal self-efficacy, 9 general teacher efficacy, 10 self-efficacy total

Teachers having a 1 to 3 years' experience in teaching (M=14.10, SD=7.57) differed significantly in emotional exhaustion scores [ $t(153) = -2.53, p < .001$ ] from teachers having over 10 years of experience (M=22.80, SD=10.66). Also, they had lower emotional exhaustion scores [ $t(30) = -2.971, p < .05$ ] than teachers with 3-6 years (M=23.41, SD=8.47) and teachers with 6-10 years of experience (M=21.24, SD=10.02;  $t(50) = -2.107, p < .05$ ).

Independent sample t-test was used for comparing the means of the Hungarian and Transylvanian teachers on the studied variables. The results of the analysis (means, standard deviations, t value, and significance level) are presented in Table 2.

We conducted linear regression analysis to test the predicting value of basic need satisfaction and self-efficacy on burnout components. The model including autonomy, competence, relatedness need satisfaction, personal, general, and total self-efficacy, age, and teaching experience predict 31% of the variance in emotional exhaustion scores [ $F(9,205) = 10.41, p < .001, R^2 = .314$ ]. The satisfaction of the need for autonomy is a significant predictor of emotional exhaustion ( $B = -.360, t(205) = -3.98; p < .001$ ). The overall model predicts 26% of the variance in depersonalization scores [ $F(9,205) = 8.00, p < .001, R^2 = .260$ ]. The satisfaction of the need for competence is a significant predictor of depersonalization ( $B = -.410, t(205) = -4.61; p < .001$ ). The satisfaction of the need for competence is also a predictor of personal accomplishment ( $B = .391, t(203) = 4.54; p < .001$ ). The overall model predicts 31% of the variance in depersonalization scores [ $F(9,203) = 10.24, p < .001, R^2 = .311$ ].

Table 2. Differences between Transylvanian and Hungarian highschool teachers in burnout factors, basic needs satisfaction, self-efficacy components

		<b>M (SD)</b>	<b>t (df)</b>	<b>Sig. (p)</b>
Emotional exhaustion	Transylvanian teachers	18.72 (10.63)		
	Hungarian teachers	23.74 (9.84)	-3.45 (218)	.001
Depersonalization	Transylvanian teachers	4.32 (3.98)		
	Hungarian teachers	5.36 (4.69)	-1.62 (218)	.105
Personal accomplishment	Transylvanian teachers	38.32 (6.11)		
	Hungarian teachers	34.85 (6.72)	3.69 (216)	.000
Personal efficacy	Transylvanian teachers	26.36 (4.51)		
	Hungarian teachers	24.95 (5.24)	1.95 (218)	.052
General self-efficacy	Transylvanian teachers	13.57 (2.90)		
	Hungarian teachers	13.75 (3.57)	-.369 (217)	.712
Teacher self-efficacy total	Transylvanian teachers	39.93 (5.70)		
	Hungarian teachers	38.67 (6.82)	1.34 (217)	.179
Autonomy	Transylvanian teachers	36.61 (7.37)		
	Hungarian teachers	32.52 (7.33)	3.86 (216)	.000
Competence	Transylvanian teachers	35.11 (4.71)		
	Hungarian teachers	31.84 (5.43)	4.34 (217)	.000
Relatedness	Transylvanian teachers	43.86 (7.73)		
	Hungarian teachers	40.93 (7.82)	2.60 (217)	.010
Basic needs total	Transylvanian teachers	115.73 (17.13)		
	Hungarian teachers	105.14 (16.86)	4.29 (214)	.000

#### 4. Discussion

The purpose of the study was to identify the relationships between burnout components, need satisfaction and self-efficacy, and burnout predictor variables in a high-school teacher sample. Another aim of the study was to identify the differences in these variables between Transylvanian and Hungarian high-school teachers. Our results are in line with the international research results (Bartholomew et al., 2014; Skaalvik & Skaalvik, 2010; van den Broeck et al., 2008) and suggest that burnout components, self-efficacy and need satisfaction are moderately interrelated. Emotional exhaustion is negatively associated with all variables. High emotional exhaustion is moderately associated with low levels of autonomy, competence, and relatedness satisfaction and moderately associated with personal and general teacher perceived self-efficacy. Depersonalization shows the same pattern as emotional exhaustion. Teachers with high levels of personal accomplishment perceive that their needs for autonomy, competence, and relatedness are satisfied to a higher degree than those teachers, who experience low levels of personal accomplishment. The satisfaction of the need for autonomy and competence are significantly correlated with personal and general self-efficacy, but this is not the case for the need for relatedness.

Teachers working in Hungary seem to experience a higher degree of emotional exhaustion, a lower level of personal accomplishments, autonomy, and competence need satisfaction than teachers living in Transylvania. We could explain this by the gender differences in the two samples and also educational setting variables, but further studies should investigate these interactions.

The satisfaction of the need for autonomy is a significant predictor of emotional exhaustion, while satisfaction of the need for competence is a significant predictor of depersonalization and personal accomplishment. Although both variables account for variance in a small degree, it is important to consider them in burnout prevention.

The relatively small sample size, the poor reliability of some scales used (i.e. teacher self-efficacy scale) are some limitations that should be considered in developing further research and in the generalization of the results.

## 5. Conclusion

In conclusion, teacher burnout is related to basic psychological need satisfaction and teacher self-efficacy, the need for autonomy being a predictor of emotional exhaustion, and the need for competence is a predictor for personal accomplishments and depersonalization. Teachers, who feel that their need for autonomy is not satisfied, can feel emotionally drained from work. Not having their need for competence met, teachers, can get impersonal with students, parents, colleagues and also relate lower levels of personal accomplishments. Thus, different burnout components are predicted by the lack of fulfillment of different needs. This can lead us to the conclusion that intervention in burnout reducing or burnout preventing should consider different aspects of need satisfaction for the different burnout components (i.e., promoting the possibility for choice and participation in decision making, providing meaningful rationales in case of emotional exhaustion, offering social support and informative feedback in case of depersonalization and personal accomplishment issues). Future implications could be the development of interventions based on need satisfaction and testing their efficacy. We should implement these in the early years of teaching, and/or in teacher education programs.

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## Study 2. Teacher burnout and satisfaction of basic psychological needs: a meta-analysis

### 1. Introduction

The Basic psychological needs theory (Ryan & Deci, 2002) is a sub theory of the wider self-determination motivation theory developed by Deci and Ryan (Deci & Ryan, 1985b, 2000; Ryan & Deci, 2000). The theory posits that every human being has inborn basic psychological needs, that need to be satisfied to function and develop optimally. The need for autonomy, the need for competence, and the need for relatedness are the three basic psychological needs which, if satisfied, lead to well-being and improved performance (Deci & Ryan, 2000). If teachers needs are satisfied, and they can work in an environment that is autonomy-supportive, structured and encourages the development of meaningful relationships with parents, students, and colleagues, teachers are more satisfied with their jobs, experience more positive emotions, and feel more committed to the organization, and perform better, experience lower levels of burnout, anxiety, and anger (Collie, 2014; Greguras & Diefendorff, 2009; Klassen, Perry, & Frenzel, 2012; Klusmann, Kunter, Trautwein, Ludtke, & Baumert, 2008; van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). If these needs are not satisfied, teachers lose intrinsic motivation, are less engaged and satisfied with their jobs and can even experience burnout (Pelletier, Séguin-Levesque, & Legault, 2002). The satisfaction of the need for competence is a significant predictor of teachers' depersonalization and personal accomplishment, positive emotions, intrinsic motivation, and satisfaction of the need for autonomy is a significant predictor of emotional exhaustion (Bartholomew, Ntoumanis, Cuevas, & Lonsdale, 2014; Caprara, Barbaranelli, Steca, & Malone, 2006; Gagne & Deci, 2005; Klassen et al., 2012; Maior, Szamosközi, & János, 2015; Ryan & Deci, 2000; Skaalvik & Skaalvik, 2007; Van den Broeck et al., 2008; Vansteenkiste, Zhou, Lens, & Soenens, 2005). Job burnout, as "a prolonged response to chronic emotional and interpersonal stressors on the job .. defined (...) by the three dimensions of exhaustion, cynicism, and sense of inefficacy" (Maslach, 2003, p. 189) is a major concern for teachers worldwide.

As previous study results show, autonomy seems to be in a moderate negative association with burnout, while competence and relatedness needs are in a small negative correlation with burnout; basic needs is considered a mediator between work climate and burnout in teachers (Randelovic & Stojiljkovic, 2015), while need satisfaction is in a significant association with emotional exhaustion, depersonalization and personal accomplishments (Fernet, Austin, Geneviève Trépanier, & Dussault, 2013). Need satisfaction has a negative effect on burnout, and basic need satisfaction (BNS) has a mediator role between teacher support resources and burnout (Doménech-Betoret, Lloret-Segura, & Gómez-Artiga, 2015).

Based on previous research results, we expect that need satisfaction will be significantly related to burnout. Also, we expect that each burnout dimension will show associations with basic needs, and these associations will differ in magnitude from each other.

## **1.1. Objectives**

- Synthesis of the relevant scientific literature regarding the relationships between basic psychological need satisfaction and burnout
- Identification of the effect sizes of these relationships
- Identification of moderator variables

## **2. Method / Procedure**

### **2.1. Literature search**

To collect relevant studies, a systematic electronic search of scientific databases: Psychinfo, ProQuest, Ebsco, ScienceDirect, and the self-determination theory platform was performed, in search of studies between 2002 and 2015. We used variations and combinations of the following keywords: basic needs satisfaction, need for autonomy, need for competence, need for relatedness, self-determination, combined with teacher burnout, teacher emotional exhaustion, teacher depersonalization, teacher personal accomplishment. We then examined references of the selected articles. A Snowball search of the reference list was also carried out. A total of 970 studies were identified as a result of the search. We examined titles and abstracts, and excluded studies that included other populations than teachers or did not include measurements of basic need satisfaction or other studies that failed to meet inclusion criteria (see below), leaving us a total of 6 studies, comprising 8 independent samples, and a total of 1660 teachers for the present meta-analysis.

### **2.2. Inclusion and exclusion criteria**

Inclusion criteria were: studies were published in English, in peer-reviewed journals, provided sufficient data to calculate effect sizes, included at least one psychological need (need for autonomy, need for competence, need for relatedness) and at least one burnout dimension (emotional exhaustion, depersonalization, personal accomplishments), included teacher sample (only or as a majority group among other education services related occupations). Studies investigating special education teachers' burnout were not included in this meta-analysis, as they face diverse and different challenging factors that might contribute to burnout. Overall, studies that did not include teacher samples, burnout measures, or basic need satisfaction measures, Pearson correlation coefficients, were excluded from the meta-analysis.

We retained 33 studies for further analysis and after the exclusion criteria applied, a total of 6 studies remained for the current meta-analysis. The consensus rate between the two independent reviewers was 98%.

### **2.3. Sample details**

A total of 6 studies, with 8 independent samples, contributing a total of 58 effect sizes were included in the present analysis. Sample sizes ranged from 72 to 409, and the total sample size was 1660. The typical study included correlations between burnout dimensions and basic need satisfaction, information about demographics and scales used, and was cross-sectional. All studies included self-report measures of basic need satisfaction and burnout.

### **2.4. Variables and coding**

Studies were coded in variables relating to study details (author(s), publication year), sample (sample size, country, grade level taught), measurements (scales used to measure need satisfaction and burnout), results (correlation coefficients indicating the relationship between need satisfaction (total and components) and burnout dimension (total and factors)). Two independent reviewers coded the studies, with a 98% consensus rate. To analyze the causes of variations in the findings, we coded as moderators the following variables: country, grade level. Coding categories were: for country: Canada/Europe; for grade level: primary and secondary school/high school/university/mixed. Pearson correlation coefficients were used to report effect sizes. We computed sixteen different effect sizes for the relationships between basic needs satisfaction, total, composite, and individual and burnout total, composite and

individual factors. Based on Cohen's suggestion (Cohen 1988, 1992), an  $r = .10$  suggests a small effect, an  $r = .30$  a medium effect, and an  $r = .50$  a large effect.

## 2.5. Meta- analytical procedure

We conducted correlation analyses between teacher burnout dimensions and the satisfaction of the basic psychological needs. Effect sizes were calculated and reported using the Pearson  $r$  correlation coefficient and interpretation of the effect sizes was based on Cohen's criteria. The analyses were conducted using the Comprehensive Meta-Analysis program, version 2.0 (Borenstein, Hedges, Higgins, Rothstein, & Englewood, 2005). The random-effects model was adopted, as it provides an estimate of the variance in effect sizes, allows variation in parameters of different studies, and the effect sizes can be generalized to a larger population than those of the studies included in the meta-analysis (Field, 2003; Hunter & Schmidt, 2000). Also, moderator analyses were conducted. 95% confidence intervals ( $CI$ ) were computed to test the significance of the correlations, and the relationship was considered significant if the confidence interval did not include 0. For homogeneity analysis,  $Q$  and  $I^2$  statistics were used (Borenstein et al., 2005). A significant  $Q$  value suggests that the effect sizes are heterogeneous, thus, the possibility of moderator effects exists. We evaluated publication bias by using the Fail-safe  $N$  method (Rosenthal, 1991), which computes the number of studies needed to change the  $p$ -value to nonsignificant (to  $p > .05$ ). The fail-safe  $N$  number should be bigger than  $5k+10$  for publication bias to be present.

## 3. Results

### 3.1. Descriptive statistics

A total of 6 studies comprising 8 independent samples and 1660 participants were included in the current meta-analysis, with a total of 58 effect sizes.

The overall effect size for the relationship between burnout and basic needs satisfaction was small, but significant,  $r = -.17$ ,  $p < .01$ ,  $CI = [-.26; -.07]$ . Fail-safe  $N$  indicator showed that a total of 3767 studies would be needed to make this effect size non - significant ( $p > .05$ ). Homogeneity analysis results show that data is heterogeneous,  $Q(57) = 1500.855$ ,  $p < .001$ . 96.20% of the heterogeneity is not due to sampling errors ( $I^2 = 96.202$ ). Effect sizes of the relationships between the three basic needs and the three burnout factors, individually, are presented in Table 1.

We assumed that the relationship between basic needs satisfaction total and emotional exhaustion, depersonalization, and personal accomplishment, respectively, will be stronger than the relationships of need for autonomy, competence, relatedness individually, and composite with EE, DP, and PA, respectively. We analyzed the confidence intervals in this respect, where a significant difference could be shown if the investigated confidence intervals did not overlap. We found significant differences only with emotional exhaustion. The relationship between emotional exhaustion and basic needs satisfaction total was significantly stronger, than the relationships between EE and need for competence, relatedness, and the three needs composite, respectively, but not significantly stronger than the relationship between EE and need for autonomy.

Although all the relationships are of moderate size, of all three needs, the strongest effect is that of the relationship between emotional exhaustion and the need for autonomy, depersonalization and the need for autonomy, and personal accomplishments and the need for competence. We could thus argue that different needs relate to different factors of burnout in a different amount.

Table 1. Effect sizes of the individual relationships between burnout factors and basic needs

Relationship	<i>k</i>	<i>N</i>	<i>r</i>	<i>p</i>	<i>CI</i>	<i>Q</i> (df)	<i>p</i>	<i>I</i> <sup>2</sup>
EE - autonomy	5	1051	-.464	0.000	[-.54; -.37]	12.445 (4)	0.014	67.858
EE - competence	5	1051	-.302	0.000	[-.37; -.22]	6.403 (4)	0.171	37.525
EE - relatedness	6	1460	-.214	0.000	[-.29; -.13]	11.902 (5)	0.036	57.989
EE - BNS total	3	413	-.482	0.000	[-.55; -.40]	1.429 (2)	0.489	0.000
EE-autonomy, competence, relatedness	16	1460	-.331	0.000	[-.39; -.26]	79.013 (15)	0.000	81.016
DP - autonomy	5	1051	-.367	0.000	[-.47; -.24]	16.866 (4)	0.002	76.283
DP - competence	5	1051	-.307	0.000	[-.43; -.16]	21.945 (4)	0.000	81.772
DP - relatedness	5	1051	-.344	0.003	[-.53; -.12]	55.805 (4)	0.000	92.832
DP – BNS total	3	413	-.427	0.000	[-.50; -.34]	1.955 (2)	0.376	0.000
DP – autonomy, competence, relatedness	15	1051	-.342	0.000	[-.42; -.25]	107.833 (14)	0.000	87.017
PA – autonomy	4	769	.423	0.000	[.36; .48]	0.746 (3)	0.862	0.000
PA – competence	4	769	.445	0.000	[.38; .50]	3.339 (3)	0.342	10.155
PA – relatedness	4	769	.331	0.000	[.18; .46]	12.562 (3)	0.006	76.119
PA -BNS total	3	413	.440	0.000	[.35; .51]	0.399 (2)	0.819	0.000
PA – autonomy, competence, relatedness	12	769	.403	0.000	[.35; .45]	20.000 (11)	0.045	44.999
BU – autonomy, competence, relatedness	6	200	-.352	0.000	[-.44; -.25]	8.571 (5)	0.127	41.666

Notes: *k* – number of samples; *N* total sample size; *r* – correlation coefficient for effect size; *EE*-emotional exhaustion; *DP* – depersonalization; *PA* – personal accomplishments; *BU* – burnout; *BNS* -basic needs satisfaction

### 3.2. Moderator analyses

Moderator analyses were conducted to test the possible cause of the heterogeneity in studies effect sizes. Results show that neither grade level or country was a significant moderator of the total effect size. Table 2 presents relevant data of the moderation analysis.

Table 2. Results of the moderator analysis

Moderator	Category	<i>k</i>	<i>r</i>	<i>p</i>	<i>CI</i>	<i>Q<sub>b</sub></i>	<i>p</i>
Grade level	Primary and secondary	9	-.231	0.000	[-.29; -.17]	6.152 (3)	0.104
	High school	24	-.149	0.081	[-.30; .01]		
	University	3	-.381	0.000	[-.51; -.23]		
	Mixed	22	-.13	0.152	[-.30; .04]		
Country	Belgium	12	-.164	0.174	[-.38; .07]	9.647 (5)	0.086
	Canada	10	-.090	0.523	[-.35; .18]		
	Hungary	12	-.095	0.413	[-.31; .13]		
	Romania	12	-.203	0.120	[-.43; .05]		
	Serbia	6	-.352	0.000	[-.44; -.25]		
	Spain	6	-.204	0.000	[-.26; -.14]		

In the case of studies investigating the relationships between specific burnout factors and basic needs, we identified moderator effects of grade level only in the relationships between depersonalization and specific basic



needs. Studies conducted on mixed samples generated bigger effect sizes ( $k = 2, r = -.446, 95\% CI = [-.51; -.37], p = 0.000$ ), than studies conducted on highschool teachers ( $k = 2, r = -.366, 95\% CI = [-.48; -.23], p = 0.000$ ) and on primary-secondary teachers ( $k = 1, r = -.188, 95\% CI = [-.29; -.07], p = 0.001$ ), in case of depersonalization and need for autonomy relationship ( $Q_b(2) = 15.467, p = 0.000$ ).

For the relationship between depersonalization and need for competence, grade level significantly moderated the magnitude of the effect size ( $Q_b(2) = 11.231, p = 0.004$ ). Studies including highschool teacher samples generated higher effect sizes ( $k = 2, r = -.474, 95\% CI = [-.60; -.31], p = 0.000$ ), than both studies including mixed samples of teachers ( $k = 2, r = -.234, 95\% CI = [-.24; -.01], p = 0.001$ ), or primary-secondary teachers ( $k = 1, r = -.133, 95\% CI = [-.24; -.01], p = 0.025$ ).

Grade level was not a significant moderator in the effect size magnitude of the relationships between depersonalization and need for relatedness ( $Q_b(2) = 4.366, p = 0.113$ ). Nevertheless, grade level was a significant moderator in case of depersonalization relationship with need for autonomy, competence and relatedness ( $Q_b(2) = 14.238, p = 0.001$ ), studies conducted on mixed ( $k = 6, r = -.398, 95\% CI = [-.52; -.25], p = 0.000$ ), and highschool teachers ( $k = 6, r = -.368, 95\% CI = [-.47; -.25], p = 0.000$ ) generating more powerful effect sizes than those conducted on primary and secondary teachers ( $k = 3, r = -.166, 95\% CI = [-.23; -.10], p = 0.000$ ).

We could not use the country as a moderator in the case of the relationships between burnout factors and specific needs, due to the small number of studies.

#### 4. Discussion

This quantitative review aimed to investigate the magnitude of the relationship between basic needs satisfaction and burnout in teachers and to identify moderators. Results show an overall significant small effect size between burnout and need satisfaction.

Consistent with the self-determination theory and previous research findings (Caprara et al., 2006; Deci & Ryan, 2000; Klassen et al., 2012; Pelletier et al., 2002; Ryan & Deci, 2000; Skaalvik & Skaalvik, 2007; van den Broeck et al., 2008; Vansteenkiste et al., 2005), our results show a negative relationship between basic need satisfaction and emotional exhaustion, and depersonalization, and a positive relationship between basic needs satisfaction and personal accomplishments.

However, the magnitude of individual relationships ranges between small and medium-size effects, more specifically, that the magnitude of the effect sizes differs depending on the burnout component and the specific basic need investigated. For example, the relationship between emotional exhaustion and need for autonomy, need for competence, basic need satisfaction total, and need for autonomy, competence and relatedness combined, respectively, had a significant medium-size effect, while the relationship between emotional exhaustion and need for relatedness was of a small significant size.

The relationship between depersonalization and need for autonomy, need for competence, need for relatedness, the three needs combined, and burnout, respectively, were of a significant medium-sized magnitude. The same magnitude was the relationship between personal accomplishments and the needs individually or combined, and total.

Furthermore, the relationship between emotional exhaustion and basic needs satisfaction total was significantly stronger than those with the need for competence, relatedness, and the three needs composite, respectively. However, the emotional exhaustion (EE)- basic need satisfaction (BNS) total relationship was not significantly stronger than the relationship between EE and the need for autonomy. This is in line with recent research results sustaining that each need predicts different outcomes (Van den Broeck et al., 2008).

Grade level was a significant moderator in the relationship between depersonalization and the need for autonomy, need for competence, and the need for autonomy, competence, and relatedness combined, respectively. We can conclude that the relationship between depersonalization and the before mentioned variables is stronger in high school teachers, and mixed sampled studies, than in the case of teachers who teach in primary and secondary levels. Grade level was not a significant moderator of the relationship between depersonalization and need for relatedness, and in none of the relationships between emotional exhaustion and personal accomplishments relationships with basic needs, individually. Country was not a significant moderator on the overall level, and we could not conduct analysis on more specific levels because of the small study number.

Some limitations refer to the small number of studies included, the limited number of studies conducted in some countries (not permitting to conduct moderator analyses), the use of self-report measures only, which could bias the results (although, in this research area, self-report measures are valuable sources of information). As the studies were cross-sectional, no causal relationships could be interpreted, and the relationships could be bidirectional. Taken all these together, it is important to interpret our results with caution.

## 5. Conclusion

Based on the results of our study, we can conclude that the self-determination theory can be a useful conceptual framework in studying burnout.

Future research could examine if the same relationships remain if we consider high and low burnout scores, and focus on including every factor of burnout in the research, not only emotional exhaustion in studying and understanding burnout. Also, exploring the relationships—direct and indirect - between burnout components and basic need satisfaction in-depth, the mechanism through which they work in influencing burnout, including mediation analysis, seems to be a logical next step in burnout research. Many studies have identified the mediating role of basic need satisfaction between job demands/resources and burnout (Doménech-Betoret et al., 2015; van den Broeck et al., 2008). Our aim in the next studies is to explore the relationships between basic need satisfaction, burnout, and personal characteristics, such as rational/irrational beliefs and social-emotional competencies. Investigating how needs, beliefs, and competencies influence burnout may contribute to a better understanding of this over-studied, and yet still complex and not fully understood phenomenon.

### Study 3. Teacher rationality, social-emotional competencies, and basic needs satisfaction: direct and indirect effects on teacher burnout<sup>2</sup>

#### 1. Introduction

The relationships between burnout and individual and organizational outcomes, such as depression, anxiety, physical health symptoms, turnover, absenteeism, organizational commitment and engagement, motivation, teacher-student relationships were confirmed by several study results (Hakanen & Schaufeli, 2012; Han & Weiss, 2005; Maior, Szamosközi, & János, 2015; Rovero, 2004; van Diest & Appels, 1991).

Individual factors, like lack of autonomy and competence, low levels of needs satisfaction (Bartholomew, Ntoumanis, Cuevas, & Lonsdale, 2014; van den Broeck, Vansteenkiste, De Witte, & Lens, 2008), irrational beliefs (Bermejo, Hernandez-Franco, & Prieto-Ursua, 2013), reactive coping and deficits in social-emotional skills (Brackett, Palomera, Mojsa, Reyes, & Salovey, 2010; Jennings & Greenberg, 2009; Palomera, Fernandez-Berrocal, & Brackett, 2008), role conflicts, low self-efficacy beliefs are risk factors in teacher burnout (Pillay, Goddard & Wilss, 2005; Skaalvik & Skaalvik, 2007; Spiegler & Guevremont, 2003). Our study investigates the relationships between teacher burnout and social-emotional competencies, rational and irrational beliefs, and basic needs satisfaction, respectively.

Teachers' social-emotional competencies are important for their well-being (Brackett et al., 2010), motivation and performance, and have a major influence on student outcomes. Teachers with developed social-emotional skills can identify and regulate their emotions, understand the ways their emotions and emotion management influences classroom behavior, are more empathetic, can make responsible decisions, solve problems efficiently and report higher levels of well-being (Jennings & Greenberg, 2009; Roorda, Koomen, Spilt, & Oort, 2011; Zeidner, Matthews, & Roberts, 2009). In turn, teachers with less developed social and emotional competencies report lower levels of job satisfaction, higher levels of stress, negative emotions and burnout (Brackett et al., 2010; Colomeischi, 2015; Jennings & Greenberg, 2009; Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010).

Nevertheless, the intensity and duration of negative emotions can be aggravated by negative, dysfunctional and irrational beliefs, as stated by the rational-emotive therapy framework (Ellis, 1962, 1979b), as they are the key factors in interpreting the external stimuli as being stressful or not, and also the evaluation of one's ability to cope with a stressor. As such, irrational beliefs are related to stress, burnout, mental health problems (Bermejo-Toro & Prieto-Ursua, 2006; Bernard, 2001, 2016; Popov & Popov, 2015; Robertson & Dunsmuir, 2013).

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<sup>2</sup> This study has been published in this form.

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The authors contributed to the article as follows: Maior, E.: conceptualization, methodology, investigation, writing-original draft, visualization, review; Dobrean, A.: conceptualization, methodology, writing-supervision; Păsărelu, C. R.: writing-review & editing; visualization, supervision.

Besides beliefs and competences, the satisfaction of the basic psychological needs within the organization is a crucial element in teacher well-being. The basic psychological needs satisfaction theory (Ryan & Deci, 2002) assumes that humans have an innate need to function in a self-determined and autonomous way and have innate, universal psychological needs. Studies conducted on teachers show a positive association between teachers' satisfaction of basic psychological needs, intrinsic motivation, job satisfaction, commitment, positive emotions at work and performance, and negative associations with burnout (Caprara, Barbaranelli, Steca, & Malone, 2006; Greguras & Diefendorff, 2009; Klassen, Perry, & Frenzel, 2012; van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010).

Considering previous research results, our study aims to investigate the relationships between teacher burnout factors and specific cognitive, motivational, and social-emotional individual variables. We consider it important to investigate each burnout factor, as previous studies have shown that the three factors are associated with different individual variables and they are different, but essential parts of the burnout phenomenon (Maslach, 2003; Leiter & Maslach, 2016). Depersonalization seems to be the most negative aspect of burnout and different from the other two factors (Leiter & Maslach, 2016). We choose positively stated individual characteristics because of the importance of protective factors in burnout development and evolution. Considering the significant relationships established in previous research, we aim to investigate whether these specific positive individual variables interact with each other and have effects on teacher burnout factors not only directly, but indirectly, through the specific relationships between them. Therefore, we test mediation models involving burnout factors, basic needs satisfaction (BNS), rational beliefs (RB), and social-emotional competencies (SEC).

## 1.1. Objectives

Our study's first objective is to identify the relationships between emotional exhaustion, depersonalization, personal accomplishments, and basic needs satisfaction, rational beliefs, and social-emotional competencies, respectively. Our first hypothesis is:

H1. Teacher emotional exhaustion, depersonalization, and personal accomplishment are significantly related to basic needs satisfaction, rational beliefs, and social-emotional competencies.

Our second objective is to identify mediators in the relationships between teacher burnout factors and the before mentioned variables. Therefore, we propose and test two mediation models in this study. First, we test the mediating role of rational beliefs between basic needs satisfaction and burnout factors. We suggest that rational beliefs mediate the relationship between basic needs satisfaction, and depersonalization. We investigated depersonalization because it is a core and most negative factor of burnout and is more linked to the quality of the work environment than the other two dimensions (Leiter & Maslach, 2016). We assume that basic needs satisfaction affects rational beliefs, considering that healthier, autonomy, competence, and relatedness supportive environments facilitate the development or presence of rational beliefs. We argue that basic needs satisfaction affects depersonalization directly, and indirectly, through rational beliefs.

Second, we want to investigate whether basic needs satisfaction mediates the relationship between social-emotional competencies and emotional exhaustion, depersonalization, personal accomplishments. We hypothesize that teachers with highly developed social-emotional competencies are more likely to influence their environments and thus, contribute to satisfaction of their psychological needs, this leading them to experience lower levels of burnout (Jennings & Greenberg, 2009; Klassen et al., 2012).

Thus, the hypotheses related to the second objective of our study were:

H2. Rational beliefs mediate the relationship between basic needs satisfaction and individual burnout factors.

H3. Basic needs satisfaction mediates the relationship between social-emotional competencies and individual burnout factors.

## 2. Method

### 2.1. Participants

A total of 81 high school teachers participated in the study, 23 males (28.4%), and 58 females (71.6%). All teachers took part in the present research voluntarily, and all teachers worked in schools within one county in Romania. The mean age was  $M = 42.48$  ( $SD = 7.97$ ), the youngest participant being 26 years old, the oldest 64 years old. Forty teachers (49.4%) worked in urban high schools, forty-one (50.6%) in rural high schools. Experience in

years mean was  $M = 12.79$  years ( $SD = 10.30$ ), ranging from 0 to 39 years of teaching experience. 59.3% of the sample ( $N = 48$ ) was Romanian ethnicity (majority) and 40.7% ( $N = 33$ ) Hungarian ethnicity (representing an ethnic minority in Romania).

## 2.2. Procedure

We asked high school principals from one county in Romania for permission to send the survey to the teachers working in their schools, in a formal meeting, along with a signed copy of the description of the study. After providing their informed consent, volunteer participants completed the survey online at the end of 2017. The online survey included scales measuring the level of burnout, the satisfaction of basic psychological needs, rational beliefs, social-emotional competencies, and demographic data.

## 2.3. Measures

### *Demographic data form*

Age and gender of the participants, general information including teaching experience, school profile, subject taught were collected based on the Demographic data form.

*Basic Psychological Need Satisfaction at Work Scale (BPNSW; Deci, Ryan, Gagne', Leone, Usunov, & Kornazheva, 2001)* is a 21-item scale, comprising 3 subscales measuring the satisfaction of the basic psychological needs of autonomy, competence, and relatedness. Participants were asked to evaluate on a 7-point scale the degree to which they agree or disagree with the statements of the scale (1 = *Strongly disagree*, 7 = *Strongly agree*). The subscales added to make up the Basic Needs Satisfaction Total score.

*The Maslach Burnout Inventory-Educator Survey (MBI-ES; Maslach, Jackson, & Leiter, 1996)* was used to measure emotional exhaustion, depersonalization, and reduced personal accomplishment. This scale comprises 22 items, where participants are asked to evaluate on a 7-point Likert-type scale the degree to which they experience the feelings operationalized in the statements of the survey (0 = *Never*, 6 = *Every day*). High scores on Emotional Exhaustion and Depersonalization and low scores on Personal Accomplishment represent high burnout.

Social-emotional competencies were measured using the *Social-Emotional Competence Questionnaire (Yoder, 2014)*, a 21 item Likert type scale, comprising statements that evaluate the subjective level of the 5 core competencies, proposed by CASEL (Collaborative for Academic, Social, and Emotional Learning, 2008a, b): self-awareness, self-management, social awareness, relationship management, and responsible decision making. Participants have to indicate on a scale from 1 (*Strongly disagree*) to 4 (*Strongly agree*) the degree of their agreement with the given statement. High scores on the subscales indicate highly developed social-emotional competencies. A total score can be calculated by adding the subscale scores.

Participants' rational beliefs were assessed using the *ERIBS (Employee Rational and Irrational Beliefs Scale, Gavița & Duță, 2013)*, a 30 item Likert type scale on which participants expressed using a scale from 1 to 4 (1 = *Strongly agree*, 4 = *Strongly disagree*) how much they agreed or not with the statements expressing demands or preferential thinking. The scores are added up to calculate the Irrational Beliefs and the Rational Beliefs subscale's scores. High scores on the subscales indicate low levels of occurrence of rational, respectively irrational beliefs.

## 3. Results

We used Statistical Software (SPSS 20.0) for data analysis. After the analysis of the skewness and kurtosis, the sample showed a non-normal distribution. Log transformations on the variables did not help normalize the data distribution; in consequence, we conducted non-parametric tests for the data analysis.

We conducted Spearman Rho correlations to test the first hypothesis, to analyze the relationships between basic needs satisfaction, burnout factors, rational beliefs, and social-emotional competencies. The means, standard deviations, medians, and significant correlations are presented in Table 1.

Table 1.

*Means, standard deviations, and correlation coefficients for the measured variables*

	BNS	RB	EE	DP	PA	SEC
M	101.17	27.15	13.15	3.65	38.96	66.51
(SD)	(16.46)	(6.46)	(9.48)	(4.52)	(6.41)	(8.94)
Basic Needs Satisfaction	-					
Rational Beliefs	-.23*	-				
Emotional Exhaustion	-.56**	.05	-			
Depersonalization	-.70**	.35**	.62**	-		
Personal Accomplishments	.64**	-.03	-.51**	-.67**	-	
Social-emotional competencies	.46**	-.27*	-.28**	-.40**	.48**	-

*Notes.* \*Correlation is significant at 0.05 level; \*\*Correlation is significant at 0.01 level (2-tailed); M mean; SD standard deviation; BNS basic psychological needs satisfaction total; RB rational beliefs; EE emotional exhaustion; DP depersonalization; PA personal achievement SEC social-emotional competencies

To investigate the study's second objective, the second and third hypotheses, we conducted mediation analyses, using bootstrapping procedures (bootstrapping tests with 5000 re-samples; PROCESS for SPSS 2.16.3, Hayes, 2013), for assessing the indirect effects. Size of the indirect effects, confidence intervals, and standard errors were reported. Mediation occurs if the confidence interval for estimating the indirect effect does not include 0.

Testing the mediation model 1, proposed for the exploration of the second hypothesis, concluded a significant total effect of basic needs satisfaction (BNS) on depersonalization ( $c = -.18$ ,  $SE = .023$ ,  $p < .001$ , 95%  $CI = [-.22, -.13]$ ). The indirect effect of BNS on Depersonalization through Rational Beliefs was also significant (Indirect effect =  $-.02$ ,  $SE = .01$ , 95%  $CI = -.05$  to  $-.001$ ). BNS was significantly related to rational beliefs ( $a = -.09$ ,  $SE = .042$ ,  $p = .028$ , 95%  $CI = [-.18, -.01]$ ) and rational beliefs was a significant predictor of depersonalization ( $b = .17$ ,  $SE = .057$ ,  $p = .003$ , 95%  $CI = [.05, .28]$ ). The direct effect of basic needs satisfaction on depersonalization was also significant ( $c' = -.16$ ,  $SE = .022$ ,  $p < .001$ , 95%  $CI = [-.21, -.12]$ ).

Considering our third hypothesis, we tested three mediation models. The results show that BNS mediates the relationship between social- emotional competencies (SEC) and all burnout factors. SEC are significantly associated with BNS ( $a = .92$ ,  $SE = .179$ ,  $p < .001$ , 95%  $CI = [.56, 1.2]$ ) and BNS significantly predicts emotional exhaustion ( $b = -.34$ ,  $SE = .060$ ,  $p < .001$ , 95%  $CI = [-.46, -.22]$ ), depersonalization ( $b = -.19$ ,  $SE = .026$ ,  $p < .001$ , 95%  $CI = [-.24, -.13]$ ) and personal accomplishments ( $b = .21$ ,  $SE = .039$ ,  $p < .001$ , 95%  $CI = [.13, .29]$ ).

The total effect of SEC on emotional exhaustion was significant ( $c = -.31$ ,  $SE = .114$ ,  $p = .007$ , 95%  $CI = [-.54, -.08]$ ). SEC predict emotional exhaustion through BNS, Indirect effect =  $-.32$ ,  $SE = .08$ , 95%  $CI = -.53$  to  $-.17$ . The total effect of SEC on depersonalization was significant ( $c = -.14$ ,  $SE = .054$ ,  $p = .010$ , 95%  $CI = [-.25, -.03]$ ). The indirect effect of SEC on depersonalization through BNS was also significant (Indirect effect =  $-.17$ ,  $SE = .04$ , 95%  $CI = -.28$  to  $-.09$ ). The total effect of SEC on personal accomplishments was significant ( $c = .29$ ,  $SE = .073$ ,  $p < .001$ , 95%  $CI = [.14, .44]$ ). The indirect effect of SEC on personal accomplishments through BNS was also significant (Indirect effect =  $.20$ ,  $SE = .05$ , 95%  $CI = .11$  to  $.32$ ).

The direct effect of SEC on emotional exhaustion, depersonalization and personal accomplishments is not statistically significant ( $c' = .009$ ,  $SE = .111$ ,  $p = .929$ , 95%  $CI = [-.21, .23]$ ;  $c' = .03$ ,  $SE = .049$ ,  $p = .474$ , 95%  $CI = [-.06, .13]$ , and ( $c' = .09$ ,  $SE = .072$ ,  $p = .197$ , 95%  $CI = [-.05, .23]$ ).

#### 4. Discussion

Our study aimed to investigate the direct and indirect relationships between basic psychological need satisfaction, social-emotional competencies, rational beliefs, and teacher burnout factors.

Our results show partial sustainment for our first hypotheses, as burnout factors were significantly associated with social-emotional competencies and basic needs satisfaction, but only depersonalization was significantly related to rational beliefs. These results are consistent with previous research findings showing associations between emotions and well-being (Jennings & Greenberg, 2009; van Horn, Taris, Schaufeli, & Schreurs, 2004), and basic need satisfaction and burnout (Bartholomew et al., 2014; van den Broeck et al., 2010). Emotional exhaustion was in a significant negative correlation with social-emotional competencies and basic needs satisfaction. In other words, teachers who are emotionally competent, and feel that their basic psychological needs for autonomy, competence, and relatedness are satisfied, experience lower levels of emotional exhaustion. We found no significant correlation between emotional exhaustion and rational beliefs. Thus, the emotional exhaustion factor of burnout is mainly associated with the social-emotional and motivational characteristics of teachers, not cognitive ones.

Depersonalization showed a significant negative association with basic need satisfaction and social-emotional competencies. We can conclude that teachers who feel that their needs for autonomy, competence, and relatedness are satisfied within the school, experience lower levels of depersonalization. Further, teachers with highly developed social-emotional competencies are more likely to report lower levels of depersonalization than teachers who lack these competencies. Depersonalization is significantly related to rational beliefs. Teachers that hold more rational beliefs are less likely to feel high levels of depersonalization. Frustration tolerance, preferential thinking, badness, and unconditional acceptance (the rational beliefs measured in this study) are associated with lower levels of depersonalization in the present teacher sample. These results suggest that besides social-emotional and motivational characteristics, rational beliefs can be viewed as specific protective factors in preventing depersonalization, as teachers who hold more rational beliefs have a preferential thinking style, report lower levels of depersonalization than teachers whose thinking style and beliefs contain mainly demands. This result is in line with research showing the positive link between rationality and well-being/healthy functioning (Bermejo-Toro & Prieto-Ursua, 2006; Bermejo et al., 2013; Bernard, 2016; Ellis, 2005; Popov & Popov, 2015). These results further emphasize the value of depersonalization as a significant distinctive factor in the overall burnout phenomenon, as suggested by Leiter and Maslach (2016), and urge us to investigate further the factors related to depersonalization to reduce and/or prevent it.

The personal accomplishments factor was significantly and positively associated with satisfaction of the basic needs and social-emotional competencies. These results suggest that teachers who feel that their need for autonomy, competence and relatedness is satisfied, and are more self- and socially aware, are better equipped in self- and relationship management skills and feel more responsible in their decisions, feel more competent in their work and workplace, compared to teachers who experience low need satisfaction and have less developed social-emotional competencies. As with emotional exhaustion, the personal accomplishment factor of burnout was not significantly associated with rational beliefs.

One explanation for the association of rational beliefs only with the depersonalization factor of burnout could be the specificity of this factor, as it is working as a self-defensive coping strategy, a way to detach from work and colleagues due to a sense of disconnection and lack of value congruence between personal and organizational values. We can argue, that more rational teachers are more able to use adaptive coping strategies in stressful situations and need not depersonalize, detach themselves, to protect themselves, presumably due to developing and maintaining a healthier separation between self and work, than those teachers who are less rational. This assumption needs further testing. Also, the items of the scale used to measure rational beliefs in this study mostly relate to evaluations of colleagues and teamwork, not workload or meaning and contribution, thus factors related more to depersonalization than the other two burnout factors.

Consistent with previous results on the relationships between resilience and emotions, positive thinking, proactive coping, rational beliefs, basic need satisfaction, social-emotional competencies, emotions and teacher burnout, distress, well-being and resilience (Bermejo-Toro & Prieto-Ursua, 2006; Bermejo et al., 2013; Bernard, 2016; Ellis, 2005; Klassen et al., 2012; Jennings & Greenberg, 2009; Jennings et al., 2017; Skaalvik & Skaalvik, 2007), our study extends the investigation of these variables through testing mediational models involving cognitive-social-emotional and motivational factors in the analysis.

The results confirmed our second hypothesis. Basic needs satisfaction has a significant direct effect on depersonalization, and rational beliefs seem to mediate this effect. Rational beliefs that teachers hold seem to have a significant role in the relationship between the perceived psychological need satisfaction of teachers and their depersonalization level. It seems that basic need satisfaction influences rational beliefs, which influence depersonalization. Teachers that perceive that their need for autonomy, competence, and relatedness is satisfied will experience lower levels of depersonalization/cynicism, through the preferential thinking style they develop. This could sustain the role of supportive and healthy environments (as perceived by teachers) in developing healthy, functional and rational thinking and more effective coping, which can prevent teachers from engaging in a detached behavior (depersonalization).

Our third hypothesis was confirmed, more specifically, teachers that have highly developed social-emotional skills, perceive that their psychological needs are satisfied and thus experience lower levels of emotional exhaustion and depersonalization and have higher levels of personal accomplishments. SEC has an indirect influence on burnout factors, through the satisfaction of the needs for autonomy, competence, and relatedness. We can assume that teachers who are socially aware, self-aware, have good self- and relationship- management and decision-making skills, are more likely to experience higher levels of satisfaction of their need for autonomy, competence, and relatedness, and maybe even contribute to this, precisely because of their high competence. Further, the satisfaction of the basic psychological needs will lead to experiencing lower levels of emotional exhaustion, depersonalization, and higher levels of personal accomplishments.

These results are interesting and worthy of further exploration in understanding mechanisms of change in burnout development and reduction.

#### **4.1. Limitations and future directions**

One of the major limitations of the present study is the relatively small sample size, which could contribute to the statistical power of the results and influence the generalizability of the results. Another limitation is the use of self-report measures only, although the way teachers experience, view, and report aspects of the studied phenomenon are crucially important to better understanding these complex relationships. The distribution of the data urges us to interpret and generalize our results with caution. Still, for fitting the data the best way possible, nonparametric tests were used for data analysis. Future studies should include longitudinal designs.

#### **5. Conclusions**

The present study contributes to previous research by identifying specific direct and indirect relationships between the before mentioned variables and the three individual factors of burnout. Social-emotional competencies and basic needs satisfaction are significantly related to emotional exhaustion, depersonalization, and personal accomplishments, while rational beliefs show a significant association with depersonalization. Rational beliefs mediate the relationship between basic need satisfaction and depersonalization, and basic need satisfaction is a mediator in the relationship between social-emotional competencies and emotional exhaustion, depersonalization, and personal accomplishments, respectively. We can thus conclude, based on our results, that developing the social-emotional competencies and rationality of teachers, and building an environment that promotes and enables need satisfaction (i.e., offering choice, constructive feedback, positive school climate) can lead to lower levels of emotional exhaustion and depersonalization, and higher personal accomplishments in teachers. This is consistent with previous research findings, showing that interventions that include cognitive (increasing rationality), motivational and social-emotional modification and development components would be highly beneficial for teacher trainees and practicing teachers, and schools (Bernard & DiGiuseppe, 1994; David, Szentagotai, Eva, & Macavei, 2005; Jesus & Conboy, 2001; Ugwoke et al., 2017; Warren, 2010b). In conclusion, including competence, need satisfaction, and cognition improving elements within intervention programs could make teacher burnout prevention and reduction more efficient, as they influence burnout factors in interconnected ways.

#### **Study 4. Reducing teacher burnout and increasing teacher rationality and social-emotional competence levels: testing the effects of an REBT-based intervention program**

##### **1. Introduction**

In recent years, school-based mental health-related research focused on teacher well-being and stress, besides student well-being and performance (Leschied, Flett, & Saklofske, 2013). Teachers experiencing emotional exhaustion, depersonalization, and low personal accomplishments are less satisfied with their jobs, less motivated, and more prone to psychological and physical illness (Montgomery & Rupp, 2005). The transactional model of stress (Lazarus & Folkman, 1987) states that the external world stressors (administration, workload, interaction with parents and colleagues, lack of support, classroom behavior) do not directly lead to physiological, psychological, and behavioral stress reactions. These reactions are influenced by the specific attitudes of teachers related to the external stressors and their perceived ability to cope with them. Teachers' beliefs, attitudes, and stress management skills have a major influence on the level of stress and burnout experienced in the work setting. Irrational beliefs are related to high levels of teacher stress, burnout, anxiety, depression, and reduced use of active constructive coping strategies (Bermejo-Toro & Prieto-Ursua, 2006; Bernard, 1988; Calvete & Villa, 1999; Cecil & Forman, 1990; Popov & Popov, 2015). Studies show that teacher stress can be reduced and teacher well-being can be increased through providing support (Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010) and opportunities for teachers to learn stress management skills (Chan, 2006; Vesely, Saklofske, & Leschied, 2013).

Rational Emotive Behavioral Therapy (REBT) and Rational Emotive Education (REE) components can be used effectively with teachers, as they help decrease the intensity of negative emotions and behaviors and are effective in reducing irrationality and increasing self-efficacy (Bernard & DiGiuseppe, 1994; David, Szentagotai,

Eva, &Macavei, 2005; Warren, 2010b). A systematic literature review (Robertson, 2010) on studies investigating the effectiveness of REBT programs in teacher stress, anxiety reduction, and classroom management improvement, concluded that interventions which are developed in an REBT framework and are combined with mindfulness elements have a significant effect on teacher stress and anxiety reduction, compared to no intervention or interventions that do not comprise relaxation techniques, for example (Cecil & Forman, 1990; Forman, 1982; Salami, 2007). Results show that training for reducing irrational beliefs, combined with relaxation, cognitive restructuring assertiveness training, help teachers reduce their stress and anxiety and irrational beliefs and increase their well-being levels (Forman, 1982; Jesus & Conboy, 2001; Ugwoke et al., 2017).

Social-emotional competencies are associated with well-being, job satisfaction, stress management, performance, and have a negative relationship with burnout (Brackett et al., 2010; Cornelius- White, 2007; Jennings & Greenberg, 2009; Jennings et al., 2017; Roorda, Koomen, Spilt, & Oort, 2011; Zeidner, Matthews, & Roberts, 2009).

Teacher education or professional development programs show a deficit in providing training and strategy development for teachers themselves, despite their importance, effectiveness, and necessity (Hill, 2009; Sparks, 2001). In Romania, this is particularly the case, not mentioning that Romanian adults are less involved in lifelong learning programs than other European citizens (11.1% of adults take part in lifelong learning) (European Commission, 2019). The present study addresses this deficit by investigating the effects of an intervention program, comprising REBT, mindfulness exercises, and social skill development components, on burnout and irrationality reduction and social-emotional competence development on a sample of Romanian high school teachers. We hypothesized that teachers who completed the intervention program would report (1) decreased burnout/lower emotional exhaustion and depersonalization, and higher personal accomplishments/ compared to the teachers in the waitlist group, (2) increased rationality and (3) increased social-emotional competencies levels.

## 2. Method

A quasi-experimental 2 (Group: REBT based coping skills intervention vs. waitlist)  $\times$  3 (Time: pre-test vs. post-test vs. follow-up) between-subjects design was used in the present study.

### 2.1. Participants

Thirty-eight high school teachers (15 males, 23 females) from a technical high school in Sălaj county, Romania, participated in the study. Participants' ages ranged from 26 to 59 years, with a mean age of  $M=41.71$  ( $SD=8.09$ ), and teaching experience between 1-37 years ( $M=15.58$ ;  $SD=9.00$ ). 19 teachers were allocated to the intervention group (3 males, 16 females) and 19 to the waitlist group (12 males, 7 females), based on availability and preference to participate in the first or second group. All participants completed online questionnaires before (Time 1) and after (Time 2) the intervention, and at three months after the intervention ended (Time 3).

### 2.2. Instruments

The online survey sent to the participants included scales measuring the level of burnout, rational and irrational beliefs, socio-emotional competencies, and demographical data.

#### 2.2.1. Demographic data form

Demographical data related to age and gender of the participants, teaching experience, and subject taught were collected based on the demographic data form.

2.2.2. *Employee Rational and Irrational Beliefs Scale (E-RIBS; Gavița&Duță, 2013)*. Participants' rational and irrational beliefs were assessed using the E-RIBS, a 30 item Likert type self-report scale. Using a Likert scale from 1 to 4 ( $1 = Strongly agree$ ,  $4 = Strongly disagree$ ) teachers report how much they agree or not with the statements describing rational and irrational beliefs regarding work. The scores are added up to calculate the Irrational Beliefs and Rational Beliefs subscale's scores and are interpreted in an opposite direction: the higher the score on irrational beliefs subscale, the lower the irrationality, and the higher the score on rational belief subscale, the lower the rationality.

2.2.3. *Social-Emotional Competence Questionnaire (SECQ; Yoder, 2014)*, Social-emotional competencies were measured using a 21 item Likert type scale, comprising statements that evaluate the subjective level of the 5 core



competencies, proposed by the Collaborative for Academic, Social, and Emotional Learning (CASEL): self-awareness, self-management, social awareness, relationship management, and responsible decision making. Participants have to indicate on a scale from 1 (*Strongly disagree*) to 4 (*Strongly agree*) the degree of their agreement with the statement. A total Social-Emotional Competency score can be calculated by adding the subscale scores. Higher scores mean more developed social and emotional competencies.

2.2.4. *Maslach Burnout Inventory-Educator Survey (MBI-ED; Maslach, Jackson, & Leiter, 1996)*. Teacher burnout factors, Emotional Exhaustion, Depersonalization, Personal Accomplishment were measured using the 3 subscales of the MBI-ED. This scale comprises 22 items, where participants are asked to evaluate on a 7-point Likert-type scale the degree to which they agree or disagree with the statements of the scale (0 = *Never*, 6 = *Every day*). High scores on Emotional Exhaustion and Depersonalization subscales and low scores on the Personal Accomplishment scale indicate high levels of burnout.

### 2.3. Procedure

In the recruitment process, we contacted the principal of a technical high school and provided information about the research purposes, the intervention program, and we obtained his approval for the study implementation. Next, we approached high school teachers in a formal meeting, where information about the study's purpose, length, and phases were presented. All participants completed the online survey comprising scales and questionnaires measuring teacher rational and irrational beliefs, social-emotional competencies, burnout, and demographic information. Ethical considerations and privacy of the data were assured. The pre-test questionnaires were completed in November 2017 (Time 1). After the completion of the survey, we assigned participants to either an intervention or a wait-list group. The teachers in the intervention group participated in four two-hour meetings once a week for four weeks in November-December 2017. All teachers completed the online survey for the second time in late December-early January 2018 (Time 2- posttest) and after three months (April 2018; Time 3- follow-up). The teachers in the wait-list group participated in the training sessions in May 2018.

The intervention was based on an adaptation of Bernard's "Taking the stress out of teaching" (Bernard, 2016) training program. The four sessions were integrated within teachers' usual Head Teacher Committee annual meetings, after classes, and were led by the first author.

The outline of the intervention sessions, including the topic and the objectives of each session, is presented in Table1.

### 2.4. Data analysis

The Statistical Package for the Social Sciences (SPSS 20.0) was used for data analysis. We used independent samples t-test and Chi-square test to investigate differences between groups in the pretest, univariate (ANOVA) and multivariate analysis of variance (MANOVA) for investigating the main effects of Time, Group and Time  $\times$  Group interaction on the measured outcomes, and pair-wise comparisons to investigate the differences between the two groups at different time intervals. We analyzed all data using the intention-to-treat principle last observation carried forward. We used partial  $\eta^2$  as an effect size statistic (small effect = .01, medium effect = .06, large effect = .14, Cohen classification table, 1988). We used an  $\alpha$  level of .05 for all statistical tests.

Table 1. Outline of Intervention Sessions

Intervention Session. Session Title	Objectives	Example of Session Contents/ Worksheets
1. Introduction to Rational Emotive Behavior Therapy (REBT)	to understand and gain awareness of the theoretical and practical implications of teacher stress, self-acceptance, rational thinking, and basic principles of REBT.	“Be proud of your strengths” “Admire your multiple intelligence” “Family/culture heritage that I am proud of”
2. Rational and irrational beliefs. Mindfulness and relaxation	to gain information about teacher resilience; to understand the ABC model and cognitive restructuring, the types of rational and irrational beliefs, imagery, progressive muscle relaxation, focused/slow breathing.	“Check your rational and irrational beliefs” “Cognitive ABC model” “Emotional Thermometer” “Catastrophe Scale” “Relaxation techniques” “Flowing River”
3. Relationship management. Lifestyle management	to understand the consequences of passive, aggressive and assertive communication; to apply assertive communication strategies; to identify the importance of social support systems; to set realistic objectives; to develop a plan for a healthy lifestyle.	“Interpersonal styles” “Specific assertive techniques” “Healthy Lifestyle: diet, physical exercise, recreation” worksheet
4. Classroom management. Time management. Review	to understand the principles of positive discipline; to apply prioritizing and planning strategies; to understand procrastination; to learn strategies to overcome procrastination.	“Discipline steps” “Daily time management” “Overcoming procrastination” “Behavioral ABC model” “Top 10 Stress Relievers”

Note. ABC = Antecedents, Beliefs, Consequences; 1 session = approximately 2 hours

### 3. Results

The independent t-test results showed no significant differences between the intervention and the waitlist group at pretest in any of the dependent variables, age, or years of experience (all  $p$  values > .05). Chi-square analyses revealed significant differences in gender distribution between groups ( $\chi^2 (1, n = 38) = 8.92, p = .003$ ). Although post-test was completed by all participants in both groups, the attrition rate was high at follow up (21.05% in the intervention group and 57.89% in the waitlist group) an analysis, using independent t-test, of the characteristics between those who completed and those who did not complete the scales, showed no significant differences between the groups (all  $p$  values > .05). Means and standard deviations for each outcome for each group at pretest, posttest, and follow-up are presented in Table 2.

Table 2. Means and Standard Deviations of Outcomes in Each Group

Primary Outcomes	Time	Group	
		Intervention M (SD)	Waitlist M (SD)
Emotional Exhaustion	Pre	15.37 (10.80)	10.89 (7.69)
	Post	15.37 (11.61)	10.32 (7.88)
	FU	13.53 (8.91)	11.47 (7.87)
Depersonalization	Pre	2.84 (2.26)	1.88 (2.52)
	Post	3.79 (4.66)	5.06 (4.22)
	FU	3.21 (3.79)	5.29 (4.13)
Personal Accomplishments	Pre	36.78 (6.42)	40.52 (6.45)
	Post	38.63 (8.64)	38.89 (4.88)
	FU	40.21 (5.07)	40.42 (5.22)
<b>Secondary outcomes</b>			
Rational Beliefs	Pre	25.84 (6.67)	29.26 (6.42)
	Post	23.32 (8.02)	29.42 (5.31)
	FU	23.58 (8.22)	29.00 (6.03)
Irrational Beliefs	Pre	44.63 (5.43)	43.63 (5.93)
	Post	47.00 (6.72)	44.05 (5.82)
	FU	47.37 (8.20)	44.74 (5.62)
Social-Emotional Competencies	Pre	69.79 (6.57)	68.74 (7.62)
	Post	72.11 (6.84)	64.84 (7.60)
	FU	73.89 (6.42)	68.84 (8.41)

Note. M = Mean, SD = Standard Deviation, Pre = Pre-test, Post = Post-test, FU = Follow-up

Primary outcomes *Burnout*

For emotional exhaustion, multivariate test results show a non-significant main effect of Time,  $F(2,35) = 0.37$ ,  $p = .693$ ,  $\eta_p^2 = 0.02$ , a non-significant main effect of Group,  $F(1,36) = 1.99$ ,  $p = .167$ ,  $\eta_p^2 = 0.05$  and a significant main interaction effect of Time  $\times$  Group,  $F(2,35) = 4.12$ ,  $p = .025$ ,  $\eta_p^2 = 0.19$

For depersonalization, multivariate test results show a significant main effect of Time,  $F(2,33) = 5.25$ ,  $p = .010$ ,  $\eta_p^2 = 0.24$ . No significant main effect of Group was found,  $F(1,34) = 0.57$ ,  $p = .453$ ,  $\eta_p^2 = 0.01$ . A significant main interaction effect of Time  $\times$  Group,  $F(2,33) = 3.54$ ,  $p = .040$ ,  $\eta_p^2 = 0.17$  was found. Pairwise comparisons show significant differences between Time 1 and Time 2 ( $p = .013$ ) and Time 1 and Time 3 (MD = -1.89, SE = .59,  $p = .009$ ). The interaction is significant at pretest-follow-up level,  $F(1,34) = 6.65$ ,  $p = .014$ ,  $\eta_p^2 = 0.16$ .

The analysis of the data showed no significant differences in teachers' Personal accomplishment ( $p > .05$ ). More specifically, a non-significant main effect of Time,  $F(2,35) = 2.66$ ,  $p = .084$ ,  $\eta_p^2 = 0.13$ , a non-significant main effect of Group,  $F(1,36) = 0.76$ ,  $p = .389$ ,  $\eta_p^2 = 0.02$  and a non-significant main interaction effect of Time  $\times$  Group,  $F(2,35) = 1.52$ ,  $p = .231$ ,  $\eta_p^2 = 0.08$  was found. However, there was a trend of an increase of personal accomplishment in the intervention group at Time 2 and Time 3, while the waitlist group showed a decrease at Time 2 and an increase to Time 3 in personal accomplishments (not exceeding Time 1) (see Table 1).

#### Secondary outcomes

##### *Rational and Irrational beliefs*

For Rational beliefs, no significant main effect of Time was found,  $F(2,35) = 0.93$ ,  $p = .404$ ,  $\eta_p^2 = 0.05$ . Nevertheless, a statistically significant main effect of Group was found,  $F(1,36) = 6.28$ ,  $p = .017$ ,  $\eta_p^2 = 0.15$ , demonstrating that teachers in the intervention group showed a significant decrease in their Rational beliefs scores (thus an increase in rational beliefs) and maintained that increased level, while teachers in the waitlist group maintained their high scores (no increase or decrease was reported), thus low levels of rational beliefs. Time  $\times$  Group interaction effect was not statistically significant,  $F(2,35) = 0.89$ ,  $p = .420$ ,  $\eta_p^2 = 0.04$ . No significant differences were found between the two groups in irrational beliefs ( $p > .05$ ). However, there was a trend for reduction of irrational beliefs (increasing of means) in the intervention group, while the waitlist group showed stagnation in scores (see Table 1).

##### *Social-emotional competencies*

For social-emotional competencies (SEC) multivariate test results show a significant main effect of Time,  $F(2,35) = 3.48$ ,  $p = .042$ ,  $\eta_p^2 = 0.16$ , with significant differences between Time 2 and Time 3 ( $MD = -2.89$ ,  $SE = 1.08$ ,  $p = .033$ ) and a statistically significant main effect for Group,  $F(1,36) = 5.65$ ,  $p = .023$ ,  $\eta_p^2 = 0.13$ , the intervention group reporting significantly higher scores than the waitlist ( $p = .023$ ). Also, a significant main effect of Time  $\times$  Group,  $F(2,35) = 3.34$ ,  $p = .047$ ,  $\eta_p^2 = 0.16$  was found.

## 4. Discussion

Results of interventions that encompass REBT based strategies, mindfulness, relaxation, emotional competence development, assertiveness training are inconclusive, as some studies show significant reduction of burnout and irrational beliefs and improvement of social-emotional competencies (Jennings et al., 2017; Jesus & Conboy, 2001; Robertson, 2010; Ugwoke et al., 2017; Warren, 2010b). Our study aimed to investigate the effects of a complex stress management program (integrating REBT based strategies with mindfulness, relaxation, and skills training) on teachers' burnout, irrational beliefs, rational beliefs, and social-emotional competencies in a sample of Romanian high school teachers. The results show significant differences between teachers in the intervention group, and teachers in the waitlist group.

Thus, teachers participating in the intervention showed a reducing trend of their exhaustion levels but maintained and slightly increased their cynical attitude levels, compared to those who did not take part in the intervention. Teachers in the waitlist group reported increased levels of depersonalization at both Time 2 and Time 3, and an increasing trend of emotional exhaustion was also reported, compared to the intervention group. This result suggests that even if this intervention does not reduce emotional exhaustion and depersonalization, it helps it from worsening with time. It can be considered a protective factor and a prevention strategy. Also, we might argue, that if the intervention was longer, or refresher courses, booster sessions were also included, some significant positive results would have occurred in the reduction of these main dimensions of burnout, based on the trends shown (Awa, Plaumann & Walter, 2010; Iancu, Rusu, Măroiu, et al., 2018).

Contrary to our hypothesis, the personal accomplishment factor was not significantly influenced by participation in the intervention program, although it has changed in the expected direction in the intervention group while remaining the same in the waitlist group. One explanation is that personal accomplishment factor of burnout is considered a different dimension from the other two factors. The length of the intervention (4 weeks) might have also influenced the lack of consistent and significant positive results. Still, the gains of participating in the intervention reported at posttest were reported at follow-up, suggesting that the benefits were maintained in time, at least after three months.

Regarding our secondary outcomes, our results are more encouraging. Consistent with the results of previous studies investigating the effectiveness of REBT based interventions on stress, burnout, distress and

irrationality reduction in teachers (David & Szamosközi, 2011; Forman, 1982; Robertson, 2010; Roorda et al., 2011; Ugwoke et al., 2017; Warren, 2010b), our study results show that high school teachers' rationality can be developed through specific training in a relatively short period (4 weeks). Furthermore, these modifications last in time, as measured in the three-month follow-up. Teachers in the intervention group showed a significant increase in their rational beliefs from Time 1 to Time 2, compared to the teachers in the waitlist group who showed no improvement in this respect. No significant differences were found in irrational beliefs between teachers in the intervention and the waitlist group from Time 2 to Time 3. We assume that they would achieve a significant change in irrationality after participation in a longer and more clinical oriented intervention.

The intervention had a significant effect on the development of social-emotional competencies. This is a positive result, considering that emotion regulation can contribute to preventing teacher stress and its negative consequences and to increasing well-being (Brackett et al., 2010; Montgomery & Rupp, 2005).

Overall, teachers participating in the intervention program were empowered to face stressful situations more efficiently. We can conclude that the intervention program presented and tested in this study shows promising results in what teacher burnout reduction is concerned, as well it can be easily implemented in schools to increase teachers' rationality and decrease irrationality, developing social-emotional competencies. However, to obtain significant burnout reduction, longer interventions, booster sessions, and development of organizational variables (i.e. promoting basic needs satisfaction) besides individual variables, could be tested in the future. Further, implementation and participation in intervention programs combined with booster sessions could contribute to higher rates of adult participation in learning in Romania.

#### **4.1. Limitations and future directions**

The present study has some limitations. First, the small sample size contributes to the low statistical power of the results. Second, the use of self-report measures alone can contribute to the common method bias, although self-report measures are widely used in teacher burnout research and offer access to teachers' beliefs and emotions, as they subjectively perceive them. The lack of randomization of participants also affected the internal validity of the study. Another limitation could be the language barriers. Strong elements of our research are the inclusion of follow-up data, the applicability of the intervention in a school setting with relatively small costs, the evaluation of positive outcomes, such as rational beliefs and social-emotional competencies, adds to the value of the study. Further research could investigate the mechanisms of change in the case of each burnout factor and evaluate intervention effectiveness conducting randomized controlled trials, using longitudinal designs and at least a 6 months and 1 year follow-up assessments.

#### **5. Conclusion**

The present study investigated the efficacy of an REBT-based intervention program on high school teachers' burnout reduction and on increasing of rational thinking and social-emotional competence levels. Results show that the intervention can be effective in increasing rationality and social-emotional competence levels and in reducing or maintaining emotional exhaustion, depersonalization levels of high school teachers. Nevertheless, interventions that are longer and include booster sessions and also promote basic needs satisfaction of teachers in the school context, could contribute to higher effectiveness. Implications of these findings are important in teacher education and professional development programs' selection and implementation, as REBT-based interventions could significantly reduce and prevent teacher burnout, and, empower future and already working teachers to face the growing challenges of their work in a more active, rational and adaptive, thus healthier way. Preparing resilient, rational, competent teachers, by facilitating participation in evidence-based intervention programs both in professional and personal development, is crucial in school-based mental health prevention and promotion.

## **CHAPTER IV. GENERAL CONCLUSIONS AND IMPLICATIONS**

The general objective of this research project was to investigate the relationships between teacher burnout and personal characteristics, such as basic psychological need satisfaction, rational and irrational beliefs, and social-emotional competencies; furthermore, the adaptation and implementation of an REBT- based intervention program for reducing teacher burnout and irrational beliefs, and increasing teacher rationality and social-emotional competencies. We focused on teachers, as in their case, burnout is a growing concern and has severe implications for themselves, and implicitly on students and the educational system. The research project, with its results, contributes to the scientific literature by further clarifying the above relationships and by offering evidence for the effectiveness of an intervention program that can be implemented easily in schools and could be integrated into the teacher preparation and professional development programs.

### **4.1. THEORETICAL AND METHODOLOGICAL ADVANCES**

The first part of this thesis presents the relevant scientific literature results in research conducted on burnout, self-determination, and basic psychological needs satisfaction, social-emotional learning and competencies, and rational and irrational beliefs. The first three studies contribute to the scientific literature by identifying the specific relationships between emotional exhaustion, depersonalization, personal accomplishments, and need for autonomy, need for competence, need for relatedness, total need satisfaction, and self-efficacy, respectively (Study 1). A synthesis of the research on the relationship between teacher burnout factors and basic need satisfaction and the magnitude of the effects of these relationships are presented in the results of Study 2. Study 3 adds to the value of the thesis, by further exploring the above relationships, in four mediation models, adding rational beliefs and social-emotional competencies to the investigations. The major contribution of the present research to the burnout literature is the identification of the mediator role of rational beliefs in the basic needs satisfaction and depersonalization relationship and the mediator role of basic needs satisfaction in the relationship of the social-emotional competencies and all three burnout factors. Another important contribution is the clarification of specific predictors of each burnout factor. For example, the need for autonomy is a significant predictor of emotional exhaustion, while the need for competence is a significant predictor of depersonalization and personal accomplishments. The REBT-based coping skills intervention proposed and tested in Study 4 contribute to the advances in methodology. It offers an effective, relatively short, and easy-to-implement method for increasing rationality and social-emotional competence levels of teachers, factors that can prevent teacher burnout aggravation. Furthermore, the focus on the positive aspects and on what teachers can learn and develop adds to the value of the thesis. Professional burnout can be prevented by the personal development of teachers, by participating in specific trainings delivered in schools by school psychologists and counselors in collaboration with professionals working in teacher training systems.

### **4.2. PRACTICAL AND CLINICAL ADVANCES**

This research project contributes to the practical and clinical advances in teacher burnout through the identification of the specific relationships between teacher burnout factors and individual variables (Study 1, 2, 3), and the presentation of an effective intervention (Study 4). Clinicians, school counselors, principals, professionals working in teacher education, and development could integrate these patterns in providing support for schools and teacher preparation programs to create need-supportive environments and providing personal development opportunities for teachers. The development of rationality and the social-emotional competencies of teachers is important in this respect. The REBT-based intervention, with mindfulness and social-emotional development elements (assertivity training, conflict management, time management, positive disciplining) implemented in one Transylvanian high school proved effective in reducing or maintaining burnout symptoms and improving social-emotional skills and rationality of participating teachers. The intervention can be relatively easily implemented in schools with low costs and can be highly beneficial in learning and practicing how to take care of one and how to relate efficiently to others. With replication and addressing the limitations of the present study, we can consider it an evidence-based intervention, useful in self - and relationship management, contributing to teacher well-being and resilience. Because of its effectiveness and relative ease of implementation, low costs, it could be easily integrated among the teacher education and professional development programs.

In the following, we will shortly resume the objectives and the conclusions of each study.

In the first two studies (Study 1 and Study 2), our objective was to investigate the relationships between basic psychological need satisfaction and teacher emotional exhaustion, depersonalization, and personal accomplishments, and of possible cultural differences in these relationships. For attaining these objectives, we conducted a correlational (Study 1) and a meta-analytical study (Study 2). The results showed that need satisfaction and self-efficacy are negatively related to emotional exhaustion and depersonalization and are in a positive association with personal accomplishments, as shown in previous studies (Bartholomew et al., 2014; Skaalvik & Skaalvik, 2010; van den Broeck et al., 2008). We have found that different needs predict different components of burnout. For example, the need for autonomy is a negative predictor of emotional exhaustion, while satisfaction of the need for competence predicts depersonalization and personal accomplishments. Implications of these findings are important in designing and testing burnout reduction or prevention interventions.

In Study 2, we conducted a quantitative meta-analysis on studies investigating the relationships between teacher burnout and satisfaction of basic psychological needs. Our objective was to evaluate the magnitude of these relationships and to identify possible moderators. Results revealed a statistically significant, small overall effect sized relationship and no significant moderators in the overall variance. All burnout factors (emotional exhaustion, depersonalization, personal accomplishments) showed a medium-sized relation to satisfaction of the need for autonomy, need for competence, need for relatedness, individually, and total need satisfaction. An exception was the weak relationship between emotional exhaustion and the need for relatedness (small effect size). These results are in line with the first study's results, showing a strong association between the need for autonomy and emotional exhaustion. Need for competence and relatedness are more important in their relationship with the other two aspects of burnout, namely depersonalization, and personal accomplishments. Although no significant moderators were found in the overall variability, grade level was a statistically significant moderator of the depersonalization- the need for autonomy, depersonalization- need for competence, and depersonalization-needs composite relationship. This leads us to the conclusion that satisfaction of each psychological need is important to prevent burnout, and that high school teachers, more than others, are more prone to experience depersonalization and need that especially their need for autonomy and competence to be satisfied, as these are more closely related to depersonalization in their group than in others. Need satisfaction can, thus, be considered one of the protective factors in teacher well-being and burnout prevention, a conclusion in line with previous findings (Bartholomew et al., 2011; Ryan, Huta, & Deci, 2008).

In Study 3, we wanted to further explore the relationships between psychological need satisfaction and burnout factors in teachers, by including other relevant personal variables, such as social-emotional competencies and rational beliefs. We tested four mediation models to meet the objective of the study. We found significant correlations between basic needs, social-emotional competencies and emotional exhaustion, depersonalization, and personal accomplishment. Rational beliefs were significantly related only to depersonalization. These results suggest that the cognitive factor is most important in depersonalization, while social-emotional and motivational aspects are associated with all burnout factors. The findings underline previous research results reporting relationships between basic need satisfaction and burnout (Bartholomew et al., 2014; Kyriacou, 2001; van den Broeck et al., 2010) and emotions and well-being (Klusmann et al., 2008; van Horn, Taris, Schaufeli, & Schreurs, 2004), rationality and well-being (Bermejo-Toro & Pioto-Ursua, 2006; Bermejo et al., 2013; Bernard, 2001, 2016; Ellis, 2005; Popov & Popov, 2015). The results of the mediation analysis show that rational beliefs mediate the relationship between need satisfaction and depersonalization. This suggests that need supportive environments influence the level of rationality of teachers, which influences the level of depersonalization experienced by them. This model has important clinical and practical implications; it emphasizes the importance of the basic psychological need for autonomy, competence and relatedness satisfaction, as a basis for developing a healthier, rational/preferential thinking style, self and others' acceptance that can contribute to lower levels of depersonalization in teachers. Another important conclusion that can be drawn from the mediation analyses is that teacher' social-emotional competencies, although they do not have a significant direct effect on burnout factor levels, do indirectly influence burnout through the perceived satisfaction of basic psychological needs. In other words, those teachers that have highly developed social-emotional skills, experience higher levels of need satisfaction (probably in part, because of these competencies), and this can lead to lower levels of emotional exhaustion and depersonalization and higher levels of personal accomplishments. Taken all these together, we can conclude that need satisfaction, social-emotional competencies, and rational beliefs all contribute, directly and/or indirectly to teacher burnout. Designing and selecting interventions focusing on reducing and/or preventing burnout could benefit from integrating all these aspects. Further research could test these interventions' effects and further explore the mechanisms of change.

Continuing this line of research, Study 4 tested the effectiveness of an REBT- based intervention, with competence development and mindfulness elements in an experimental study, on burnout and irrationality reduction, respectively rationality and social-emotional competence development. High school teachers participated in an 8-

hour intervention over four weeks. Previous research results are inconclusive in what burnout reducing interventions effectiveness is concerned (David & Szamosközi, 2011; Forman, 1982; Jennings et al., 2017; Jesus & Conboy, 2001; Robertson, 2010; Roorda et al., 2011; Ugwoke et al., 2017; Warren, 2010b). Our results provide support for the effectiveness of REBT-based intervention on high school teachers' social-emotional development, increasing rationality, and influencing burnout. Although burnout levels did not decrease following the intervention, maintenance/lack of aggravation of teachers' emotional exhaustion and depersonalization was found in the intervention group, compared to teachers in the waitlist condition. Furthermore, the latter showed an increase in depersonalization and emotional exhaustion levels, compared to those teachers that participated in the intervention, at both posttest and follow-up. There was a significant difference in social-emotional competencies between the two groups, following the intervention. It is important to note that these effects were stable over time, as assessed at a three-months follow-up.

Evidence-based, multilevel-focused interventions could be integrated into teacher education and professional development programs, contributing to early intervention and continuous personal and professional development of teachers. Learning new stress management strategies, developing a preferential thinking style, learning and exercising self- and others' acceptance and management, assertiveness, conflict management, developing self-awareness by identifying thinking patterns, are valuable tools for teachers, empowering them to face the ever-growing challenges of their work. Keeping the flame and the light alive in a burned-out system/world seems essential, and school-based mental health and well-being promotion is one of the main domains, as an ongoing priority and responsibility for both academicians and clinicians, that can contribute to empowering individuals to be more realistic, rational, autonomous, competent and related to self and others, thus to contribute to feeling, getting and staying better.

### **4.3. SUMMARY OF GENERAL CONCLUSIONS**

We provide a summary of the conclusions of the thesis:

- 1) Teacher basic needs satisfaction and self-efficacy show a significant negative association with emotional exhaustion and depersonalization and a positive association with personal accomplishments.
- 2) Teacher self-efficacy is significantly related to satisfaction of the need for autonomy and the need for competence.
- 3) The satisfaction of the need for autonomy is a negative predictor of emotional exhaustion.
- 4) The satisfaction of the need for competence predicts depersonalization and personal accomplishments.
- 5) Romanian high school teachers are more likely to experience depersonalization than other teacher groups, and satisfaction of the need for autonomy and competence are more closely related to depersonalization in their case.
- 6) Social-emotional competencies are significantly related to emotional exhaustion, depersonalization, and personal accomplishments.
- 7) Rational beliefs are in a significant relationship with depersonalization, but not with emotional exhaustion and personal accomplishments.
- 8) Rational beliefs mediate the relationship between need satisfaction and depersonalization.
- 9) Teacher's basic needs satisfaction mediates the relationship between social-emotional competencies and all three burnout factors (emotional exhaustion, depersonalization, and personal accomplishments).
- 10) The proposed REBT-based coping skills intervention is effective in developing high school teachers' social-emotional competencies and in increasing their rationality for up to three months.
- 11) The proposed REBT-based coping skills intervention is not effective in significantly reducing teacher burnout, although changes occurred in the expected direction.
- 12) The proposed REBT-based coping skills intervention could be effectively and easily implemented in schools by school counselors (it has relatively low costs).
- 13) Rationality, social-emotional competencies, and basic needs satisfaction are important protective factors in teacher burnout.
- 14) Future studies could investigate the mechanisms of change in teacher burnout using longitudinal studies and adding organization-oriented components (for example promoting basic need satisfaction).

### **4.4. LIMITATIONS AND FUTURE DIRECTIONS**

The present research has some limitations. First of all, the relatively small sample size in each study can influence the statistical power and the generalizability of the results. Second, the use of self-report measures exclusively for investigating the studied phenomenon can contribute to the common method bias. Nevertheless, self-



report measures are commonly used, highly valuable, and useful in social studies. The same applies to the small number of studies included in the meta-analysis, which also influenced, among others, the limited possibilities to investigate eventual moderators of the relationships between basic need satisfaction and burnout. Still, considering our objective, it was important to include only studies that were conducted on teacher samples and met our inclusion criteria. Another limitation is related to the implications of using cross-sectional data, except for Study four, as it does not allow for causal inferences. In this respect, future studies should try to use longitudinal experimental designs. Further limitations include time constraints, lack of randomization of teachers, the eventual language barriers, the high attrition rate in the control group (possibly also because of online measurements) in Study four, which could have influenced our results in terms of consistency. Nevertheless, some strong points of the research are the relatively easy applicability of the intervention, the high cost/benefit rate, as the intervention could be applied in school settings, by school counselors/school psychologists for teachers, contributing in the meantime to building collaboration within schools. The inclusion of follow-up data is also a strong element of our research. Furthermore, the positive psychology perspective, focusing on building resilience and promoting mental health, developing skills, and flexibility in teachers, can enhance the teacher training and development programs with personal, alongside professional, development elements.

As of future directions of research, larger sample sizes, randomized controlled trials, longitudinal designs, the use of person-centered approaches besides variable centered approaches can be helpful in understanding, at a deeper level, of the relationships between burnout and basic need satisfaction, emotions, beliefs and the mechanisms of change involved in burnout development or reduction. Furthermore, exploring how these mechanisms occur and work in individuals with high and low levels of burnout and the impact of personality characteristics could be highly valuable. This could lead to developing a "standard", evidence-based intervention that could be implemented at a national level, as part of teacher education and teacher ongoing professional development programs, contributing to teachers' well-being and resilience.

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