

The Importance of Positive and Negative Affectivity and Mental Health Activities for
Positive Mental Health and Work-related Behavior and Experiences

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Abstract

The aim of the present thesis was to shed further light on the relationships between affectivity, mental health activities, and positive outcomes in work and life. For this purpose, three distinct studies were conducted.

Study I aimed to identify the relevance of affectivity in four types of work-related behavior and experiences. These types reflect differences in work-related motivation, coping, and emotions, which are important outcomes in a person's working life. A quite common method to assess these work-related behavior and experiences is the Work-related Coping Behavior and Experience Pattern (WCEP) Questionnaire (Schaarschmidt & Fischer, 2008). Although positive and negative affectivity are basic traits that affect motivation, coping, and emotions, their relevance in this questionnaire remained unclear. It was found that the combination of positive and negative affectivity could predict the assignment to a specific type of work-related behavior and experiences. Study I also highlighted that beside individual differences in emotionality, environmental factors like the type of profession seemed to be relevant. Hence, future research with the WCEP questionnaire should consider both individual and environmental variables. These findings are also relevant from a health promotion perspective. High positive affectivity and low negative affectivity can be seen as individual resources whereas low positive affectivity and high negative affectivity reflect risk factors. Hence, increasing positive affect and reducing negative affect seem to be useful in order to enhance engagement and well-being in the work context.

One way to increase positive affect or reduce negative affect is to practice everyday activities. Although the promotion of everyday activities has been increasingly recognized for both the reduction of mental impairment and the promotion of positive mental health, a short scale to assess mental health promoting activities was still missing. Hence, the aims of Study II were to evaluate the usefulness of self-help strategies formulated within the concept of

Mental Health Literacy (Jorm, 2012) as items of a mental health activity scale, to identify their underlying factor structure, and to associate these strategies with positive mental health as well as with positive and negative affectivity. The results of Study II suggest that these self-help strategies can be combined to a brief scale to assess mental health activity. Mental health activities seem to encompass three underlying components, namely positive orientation, physical engagement, and emotion regulation, but further validation is needed. Also, the integration of activities formulated within the field of positive psychology might be a useful extension. The finding that mental health activities were strongly associated with positive mental health broadens the context in which mental health activities can and should be promoted, because they are not only related to reduced mental impairment but also to positive mental health. Although these findings are promising, future studies are needed to establish causal effects. Moreover, mental health activities were more strongly related to positive affectivity than to negative affectivity which indicates that they might be especially useful to increase positive affect and less relevant for reducing negative affect, but the direction of causality needs be addressed in future studies.

Since affectivity and behavior are related, and can both affect relevant outcomes, the final aim of this thesis was to identify the specific relationship between affectivity, the practice of mental health activities, and positive outcomes in work (work-related behavior and experiences) and life (positive mental health). Study III revealed that the practice of mental health activities was related to more positive mental health and less unhealthy work-related behavior and experiences, even after the consideration of affectivity. Moreover, mental health activities functioned as mediators in the relationship between affectivity and the respective outcomes, indicating both an upward spiral (especially in regard to positive mental health) and a loss cycle (primarily for the risk of burnout). Positive orientation activities and physical engagement activities seem to be primarily associated with coping abilities and positive

emotions, whereas emotion regulation activities might be also related to work motivation. In line with the Broaden and Build theory of positive emotions (Fredrickson, 2004) and the Conservation of Resources theory (Hobfoll, 1989), the findings indicate the potential of mental health activities as ways to facilitate positive emotions and increase individual resources, ultimately leading to positive outcomes in work and life. However, future studies are needed to evaluate the (possible reciprocal) relationships between affectivity, affect, mental health activities, personal resources, and positive outcomes in more detail. Although the present findings already suggest the potential of mental health activities as lifestyle suggestions to promote mental health within and beyond the work context, future research is required.

References

- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 359(1449), 1367–1378. <https://doi.org/10.1098/rstb.2004.1512>
- Hobfoll, S. E. (1989). Conservation of Resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513–524.
- Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist*, 67(3), 231–243.
- Schaarschmidt, U., & Fischer, A. W. (2008). *AVEM - Arbeitsbezogenes Verhaltens- und Erlebensmuster: Manual* (3rd ed.). Frankfurt am Main: Pearson.

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List of Abbreviations

B&B theory	Broaden & Build theory of Positive Emotions
CFAs	Confirmatory Factor Analyses
COR theory	Conservation of Resources theory
EFAs	Exploratory Factor Analyses
MHAS	Mental Health Activity Scale
MHL	Mental Health Literacy
NA	Negative Affectivity
PA	Positive Affectivity
PMH	Positive Mental Health
Type A	excessively-ambitious Type
Type B	risk of burnout Type
Type H	healthy-ambitious Type
Type U	unambitious Type
WCEP	Work-related Coping behavior and Experience Pattern
WCEP types	Types of Work-related Coping behavior and Experiences

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“Happiness, as is evident, depends partly on external circumstances and partly upon oneself” (Russell, 1932, p. 241). This applies not only to happiness but to all kinds of feelings. It is not the occurrence of certain situations or life events per se, but their subjective evaluation that is decisive for the experience of specific emotions (Lazarus & Folkman, 1987). In this regard, the genetically determined tendencies to experience positive and negative emotions are particularly relevant as they determine perceptions, thoughts, and behaviors (Fredrickson, 2004; Watson, 1988a; Watson & Clark, 1984; Watson, Clark, & Carey, 1988). These tendencies are called positive and negative affectivity and they can predict various important aspects of life such as mental and physical health, social relationships, and occupational well-being (Kaplan, Bradley, Luchman, & Haynes, 2009; Ng & Sorensen, 2009; Pressman & Cohen, 2005; Watson, Clark, McIntyre, & Hamaker, 1992). For the experience of occupational well-being, work-related behavior and experiences are highly relevant (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008b). One way to assess work-related behavior and experiences is the Work-related Coping behavior and Experience Pattern (WCEP) Inventory (Schaarschmidt & Fischer, 2008). With this approach, four types of work-related behavior and experiences (WCEP types) are differentiated that reflect variations in work-related motivation, coping, and emotions. Although the four WCEP types have been included in a vast amount of research (Adams et al., 2016; Basinska, Andruszkiewicz, & Grabowska, 2011; Reichl, Wach, Spinath, Brünken, & Karbach, 2014; Schulz et al., 2011; Voltmer, Rosta, Aasland, & Spahn, 2010; Voltmer, Spahn, Schaarschmidt, & Kieschke, 2011; Zimmermann et al., 2012), the role of positive and negative affectivity in this regard remained unclear. Hence, the first aim of the present work is to identify the role of positive and negative affectivity in WCEP types.

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Beside dispositions, everyday behavior is gaining increasing attention, both in the prevention of mental impairment as well as in the promotion of mental health (Diener et al., 2017; Kazdin & Rabbitt, 2013; Lahtinen, Joubert, Raeburn, & Jenkins, 2005a). The idea that positive mental health and happiness depend to a certain degree on the individual's behavior has a long history. In 1932 for example, Bertrand Russell highlighted the relevance of individual efforts and daily strategies in order to enhance happiness. He was convinced that "many people who are unhappy become happy by well-directed effort" (Russell, 1932, p. 9). His assumptions were based on his own experience and observations, but his thoughts lasted throughout the present century. Within the concept of Mental Health Literacy (MHL; Jorm et al., 1997) for example, 14 self-help strategies were formulated to reduce mental burdens and enhance mental health (Morgan & Jorm, 2009). While the role of intentional activities to increase mental health is more and more recognized, research did not lead to a valid instrument to assess empirically based strategies known to reduce mental burdens and to enhance mental health. Therefore, another objective of the present work is to test the usefulness of these self-help strategies as items of a scale to assess mental health activity, and to identify their underlying structure.

Since behavior and affect are related, it is especially interesting to identify the extent to which affective dispositions and everyday behavior account for positive mental health and work-related behavior and experiences. Identifying protective factors as well as risk factors of positive mental health and work-related behavior and experiences is crucial for the development of suitable interventions to enhance mental health within and beyond the work-context. As a first step in this direction, the final aim of this thesis is to identify the extent to which mental health activities are relevant for positive mental health and work-related behavior and experiences, taking affectivity into account.

Work-related Stress and Health

Mental health has long since ceased to be a marginal topic, but is steadily gaining relevance (Thom, Bretschneider, Kraus, Handerer, & Jacobi, 2019). More than one third of all Germans suffer from psychological impairments, with anxiety, affective- and substance-related disorders occurring predominantly (Jacobi et al., 2014). Both the prevalence and the severity of mental illnesses have increased in recent years. Moreover, there is a connection between mental diseases and physical illness. Depression for example increases the risk of developing cardiovascular disease and coronary heart disease (Ganster & Rosen, 2013; Pikhart & Pikhartova, 2015). As a result of this development, preventing mental impairment and improving mental health have become central challenges for global health in the Western countries of the 21st century (Collins et al., 2011; Jacobi et al., 2014; Kessler et al., 2009). An important risk factor for psychological and physiological diseases is the subjective experience of stress. Employees with higher perceived stress levels are more susceptible for developing psychological, somatoform, and physiological disorders, and obtain higher mortality rates (Ganster & Rosen, 2013). Moreover, individuals that perceive high workload and low control (demand-control model; Karasek, 1979), or obtain only low social support have an increased risk for experiencing depression or anxiety (Bowling, Alarcon, Bragg, & Hartman, 2015; Ganster & Rosen, 2013; Rau & Henkel, 2013). Also, the perceived imbalance of effort and reward (effort-reward-imbalance; Siegrist, 1996) facilitates psychological impairment (Rau & Henkel, 2013). The perception of social support, control, and reward is highly influenced by emotions. Thus, affectivity as the tendency to experience positive or negative emotions is crucial for the subjective evaluation of stressors and available coping resources (Folkman, 2008). Decades of research have highlighted the relevance of affectivity for the experience of stress, job satisfaction, and occupational well-being (Judge & Larsen, 2001; Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017; Levin & Stokes, 1989; Thoresen, Kaplan, Barsky,

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Warren, & Chermont, 2003). Hence, affectivity should be considered in any assessment of work-related behavior and experiences (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Positive and Negative Affectivity: A Disposition for Positive Mental Health, Work-related Motivation, and Coping?

One basic approach to explain individual differences in emotional experiences is the model of positive and negative affectivity (Watson & Tellegen, 1985). The model is based on the idea of a Circumplex Model for structuring emotions (Russel, 1980) and divides the multitude of self-observed and externally observed emotions into the two independent dimensions positive affect (e.g. active, interested, proud) and negative affect (e.g. afraid, jittery, ashamed). Each of those two dimensions vary on a continuum, and can be both strongly and weakly pronounced (see Figure 1).

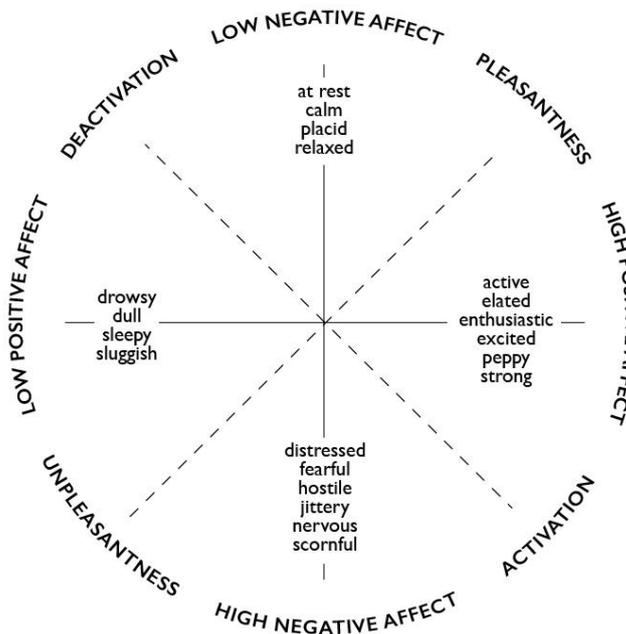


Figure 1: A two-dimensional model of positive and negative affect based on Watson and Tellegen (1985) and Feldman-Barrett and Russel (1998)

For example, high positive affect indicates high levels of energy, concentration, or joyful engagement, while low positive affect reflects lethargy or sadness. High negative affect suggests irritability, nervousness, or fear, whereas low levels of negative affect are

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accompanied by a sense of calm and balance (Krohne, Egloff, Kohlmann, & Tausch, 1996; Watson & Tellegen, 1985). Hence, emotional arousal (positive or negative) is reflected only in the high ends of each affect dimension whereas the low end of each affect dimension represents the relative absence of affective involvement (Watson & Tellegen, 1985). Although other researchers disagreed with the focus of the differentiation on positive and negative affect and favored the focus on pleasantness and activation (Russel, 1980), they agreed on the basic structure of affect in the sense of a circumplex model (Russel, 1980). Hence, high or low positive or negative affect can be seen as a combination of (un)pleasantness and (de)activation (Feldman-Barrett & Russel, 1998, 1999; Russel, 1980; Watson & Tellegen, 1985).

Watson and Tellegen (1985) assumed, that the dimensions of positive and negative affect are independent. This independence was questioned and some scientists preferred bipolarity between positive and negative affect (Feldman-Barrett & Russel, 1998; Green, Goldman, & Salovey, 1993; Russel & Carroll, 1999a, 1999b)¹. Watson and colleagues agreed that positive and negative affect are not completely independent but are influenced by each other, especially if experienced intensely (Diener & Emmons, 1985; Watson, Wiese, Vaidya, & Tellegen, 1999). Moreover, the assessed time frame, the applied affect measure, the consideration of measurement error, and the experience of stress seem to determine the correlation between positive and negative affect (Egloff, 1998; Feldman-Barrett & Russel, 1998; Green et al., 1993; Schmuckle, Egloff, & Burns, 2002; Zautra, Reich, Davis, Potter, & Nicolson, 2000). For example, momentary positive and negative affect is more closely

¹ Some of these controversies result from the specific conceptualization of positive and negative affect by Watson, Clark, and Tellegen (1988), because they defined affect as highly activated. Other researchers consider positive affect not only as high PA seen in Figure 1 but also as pleasantness, and low NA, whereas negative affect in their opinion subsumes not only high NA, but also unpleasantness, and low PA (for an overview see Feldman-Barrett & Russel, 1998, 1999). Depending on the conceptualization, different results in regard to bipolarity or independence can be expected (e.g. pleasantness is the bipolar opposite of unpleasantness and thus, should correlate highly negative, whereas PA and NA are assumed to be independent). Consequently, the question of bipolarity or independence depends highly on the conceptualization of PA and NA.

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related, whereas measures of trait affect are quite independent (Schmuckle et al., 2002; Watson, 1988b). Other findings also indicate that positive and negative affect are distinct dimensions. For example, positive and negative affect can be associated with the two biobehavioral systems of approach and withdrawal, respectively (Watson et al., 1999). Furthermore, positive and negative affect show different fluctuations throughout the day, with positive affect showing a circadian rhythm whereas negative affect does not. These findings lead Watson and colleagues to conclude that positive and negative affect “are highly distinctive dimensions that reflect separate underlying systems” (Watson et al., 1999, p. 835) and further studies supported this general independence (Fredrickson & Joiner, 2002; Leue & Beauducel, 2011; Ng & Sorensen, 2009; Schmuckle et al., 2002; Tellegen, Watson, & Clark, 1999; Thoresen et al., 2003).

State and Trait Positive and Negative Affect

Research on mood, affect, and emotion distinguishes not only in regard to valance (positive or negative) and arousal (high or low), but also between duration (state or trait). Rosenberg (1998) proposed a hierarchical ordering for the levels of affect and distinguished between more enduring affective traits and transient affective states, namely moods and emotions. Although the terms moods, emotions, and affect can be distinguished in terms of duration, pervasiveness in consciousness, and distribute breadth (Rosenberg, 1998), they are often used interchangeably to describe affective states (Lyubomirsky, King, & Diener, 2005; Pressman & Cohen, 2005; Watson, Clark, & Carey, 1988; Watson, Clark, & Tellegen, 1988). On the contrary, the distinction between trait affect and state affect is more common (Pressman & Cohen, 2005; Thoresen et al., 2003).

The model of Watson and Tellegen (1985) also differentiates between a current affective state and a relatively stable habitual tendency (trait) to experience positive or negative affect. The stable tendency is referred to as affectivity, whereby positive affectivity

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(PA) is strongly associated with extraversion and negative affectivity (NA) is related to neuroticism (Costa & McCrae, 1980; Lucas & Diener, 2001; Lucas & Fujita, 2000; Watson et al., 1999; Watson, Hubbard, & Wiese, 2000). Individuals high in NA view themselves and others less favorably, and are less satisfied with themselves and their lives. They are more likely to experience an increased number of stressors, regardless of the situation or obvious stressors, and tend to focus especially on their failures and shortcomings (Watson & Clark, 1984; Watson & Pennebaker, 1989). Individuals high in PA view themselves and their world positively, experience a general level of well-being and competence, and are more able to gain pleasure from ongoing experiences. They also engage more actively in social behavior, and cope better with stressful situations (Fredrickson & Joiner, 2002; Watson, 2002; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989; Watson & Slack, 1993). Generally, positive and negative affectivity are central individual differences that determine mental and physical health, the experience of stress, social relationships, and coping behavior.

Three Mechanisms How Affectivity Influences Experiences and Behavior

Within their meta-analysis, Ng and Sorensen described three major mechanisms of how PA and NA influence behavior and experiences (Ng & Sorensen, 2009). Although they focused on the work context, their description includes mechanisms that can be adopted generally. Like Rosenberg (1998), they assume that affectivity impacts behavior and experiences via its influence on cognitive, instrumental, and motivational processes.

Regarding cognitive processes, affectivity seems to interact in two ways. On the one side, affectivity influences the cognitive evaluation of a situation, since individuals high in PA or NA view a situation in a positive or negative way, respectively (Debus, König, Kleinmann, & Werner, 2015; Rusting, 1999). Then again, the cumulative evaluation of these situations affects overall attitudes (affect infusion model, Forgas & George, 2001). On the other side, affectivity seems to impact the recognition of certain situations, since individuals high in PA

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are more receptive to positive stimuli whereas individuals high in NA are more receptive to negative stimuli (stimulus-organism-response model, Judge & Larsen, 2001). For example, employees high in NA focus on negative job characteristics more than employees low in NA (Levin & Stokes, 1989; Necowitz & Roznowski, 1994). Moreover, high NA-individuals tend to focus on failures or shortcomings and process information more negatively than low NA-individuals (Watson & Slack, 1993). Thus, depending on their affectivity, individuals observe themselves and circumstances or situations differently, which in turn impacts attitudes, such as job satisfaction or attachment to the organization (Ng & Sorensen, 2009).

Furthermore, emotionality has an impact on behavior and experiences via its influence on social interactions. PA and NA influence not only the way individuals approach others but also the way they react to their social environment, in a positive or negative way, respectively (Berry & Sherman Hansen, 1996; Watson et al., 1992; Watson & Clark, 1984). Thus, through their influence on social interaction, PA and NA seem to enhance the likelihood of specific events (e.g. instrumental support or unfair treatment; Ng & Sorensen, 2009). Weiss and Cropanzano (1996) argue, that these events lead to specific affective reactions, which subsequently impact attitudes and behaviors (affective events theory, Weiss & Cropanzano, 1996).

Finally, emotionality impacts behavior via motivational processes (Seo, Feldman Barrett, & Bartunek, 2004). PA seems to be both the source and the reward for goal achievement. PA seems to be a source since it fosters goal achievement through optimistic expectations, high subjective utility, and high goal commitment (Seo et al., 2004). In turn, PA can be seen as a reward since it is associated with feelings of energy, vigor, and high levels of self-efficacy (Watson et al., 1999). Both aspects lead to higher motivation in goal achievement (Ng & Sorensen, 2009). Regarding NA however, the results are not quite clear. Ng and Sorensen (2009) conclude that NA may effect task motivation both negatively and

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positively. NA may reduce task motivation since individuals high in NA are more inclined to evaluate their surroundings negatively and to ruminate over their failures, which is reflected in a low self-concept (Ashkanasy, Härtel, & Daus, 2002; Watson & Clark, 1984).

Furthermore, negative affective states lead individuals to a modification of their current course of action, which can impact motivational processes negatively if the person withdraws from their goals, or positively if the individual approaches the goal differently. High NA individuals are also systematic and realistic when it comes to the processing of information, which may also have a positive impact on task performance and motivation (Ashkanasy et al., 2002). However generally, individuals high in PA engage more in approaching behavior (e.g. positive situations) whereas individuals high in NA seek withdrawal behavior (away from negative situations; Ng & Sorensen, 2009; Seo et al., 2004; Watson & Clark, 1994). Furthermore, associations with personal accomplishments are positive for PA and negative for NA (Thoresen et al., 2003).

Thus, affectivity influences the perception of situations, the appraisal of demands as stressors or challenges, and the perceived and actual availability of coping resources. All of those aspects are central for well-being, for the experience of stressors, and the initiation of coping processes (Transactional Theory, Lazarus & Folkman, 1987). The relevance of PA and NA for work and life has been demonstrated in numerous studies. For example, PA and NA affect work-related attitudes and job performance (Connolly & Viswesvaran, 2000; Thoresen et al., 2003; van Yperen, 2003), and can predict job satisfaction from two weeks up to seven years later (Bruk-Lee, Khoury, Nixon, Goh, & Spector, 2009; Watson & Slack, 1993).

Moreover, both PA and NA were associated with physical health, with the combination of high PA and low NA especially being relevant for a good health status, a lower experience of pain, and longevity (Pressman & Cohen, 2005; Watson & Pennebaker, 1989). The importance of the ratio between PA and NA is highlighted by the term flourishing, which describes a

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“live within an optimal range of human functioning, one that connotes goodness, generativity, growth, and resilience” (Fredrickson & Losada, 2005, p. 678)².

As the concepts of well-being and flourishing are getting more and more attention, positive emotions have been increasingly studied, especially within the field of positive psychology (Fredrickson, 2004; Fredrickson & Joiner, 2002; Seligman & Csikszentmihalyi, 2000). However, positive emotions in this research refer not only to the presence of high positive affect but also to emotions such as contentment or love, which can be located in the pleasantness octant in Figure 1 (Pressman & Cohen, 2005). Thus, the term positive emotion reflects both high positive affect and aspects of low negative affect. This combination of high PA and low NA has even been described as a core facet of the hedonic measure of subjective well-being, underlining its relevance for mental health (Lyubomirsky, Sheldon, & Schkade, 2005). Research on positive emotions highlighted the enormous benefits of this combination. For example, studies consistently found that individuals high in PA and low in NA view themselves more positively, are socially more active, have a higher immune functioning and a better coping behavior in times of stress (Folkman, 2008; Fredrickson, Tugade, Waugh, & Larkin, 2003; Lyubomirsky, King et al., 2005; Tugade & Fredrickson, 2004). Moreover, positive emotions precede relevant outcomes such as satisfying relationships, social support, superior mental and physical health, and longevity (Fredrickson, 2013; Lyubomirsky, King et al., 2005; Pressman & Cohen, 2005). Positive emotions are also highly relevant for occupational variables. Reviewing longitudinal and prospective studies, Lyubomirsky, King, and Diener (2005) found that positive emotions enhance productive work and job satisfaction, reduce the likelihood of unemployment, and lead to financial prosperity. Hence, positive and negative affectivity are key elements for well-being in work and life and thus, should be

² Based on Fredrickson and Losada (2005), flourishing is indicated if the relative frequency of positive and negative emotions exceeds 2.9. However, Gruber, Mauss, and Tamir (2011) pointed out that an extremely high ratio of positive to negative experiences (>5:1) does not generate additional benefits and might even be detrimental for health.

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considered in any assessment of work-related behavior and experiences (Forgas & George, 2001; Ng & Sorensen, 2009).

Affectivity and Work-related Behavior and Experiences

The experience of stress or well-being at work has implications not only for individual physical and mental health (Ganster & Rosen, 2013) but also for professional performance (Harter, Schmidt, & Hayes, 2002; Klusmann et al., 2008b). In this regard, individual work-related behavior and experiences are highly relevant, as they are associated with the experience of stress and occupational well-being (Klusmann et al., 2008b; van Horn, Taris, Schaufeli, & Schreurs, 2004), with professional outcomes (Klusmann, Richter, & Lüdtkke, 2016), and also with physical and mental health (Schulz et al., 2011). With the Work-related Coping behavior and Experience Pattern (WCEP) Inventory, a subjective assessment of work-related behavior and experiences is possible (Schaarschmidt & Fischer, 2008). Highlighting the combination of work-related motivation, coping, and emotions, the authors differentiate between four WCEP types, reflecting either healthy or unhealthy types of work-related behavior and experiences (see Figure 2).

Dimensions and Subscales	Characteristics of Four Types of Work-related Behavior and Experiences	
Professional Commitment (1) Subjective Significance of Work, (2) Professional Ambition, (3) Tendency to Exert, (4) Striving for Perfection,	Type H: Healthy-Ambitious	Ambitious at work but emotionally distant, highly resistant to stress & positive emotions
Coping Capacity (5) Emotional Distancing, (6) Resignation Tendencies, (7) Active Coping, (8) Balance and Mental Stability,	Type U: Unambitious	Unambitious and not engaged with work, highly balanced, and positive emotions
Emotions (9) Sense of Achievement at Work, (10) Life Satisfaction, and (11) Experience of Social Support	Type A: Excessively-Ambitious	Excessive commitment and striving for perfection in combination with an inability of emotional distancing, negative emotions, and high effort but low reward
	Type B: Risk of Burnout	Unambitious and not engaged with work, inability of emotional distancing, diminished stress resistance, and negative emotions

Figure 2: Dimensions, subscales, and types of work-related behavior and experiences based on Schaarschmidt and Fischer (2008)

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Type H is the most favorable pattern and reflects healthy-ambitious work-related behavior and experiences. This pattern is associated with high, but not excessive professional commitment (high values in subjective significance of work and professional ambition but medium values in tendency to exert) combined with profound coping abilities (lowest values in resignation tendencies and the highest in active coping, and balance and mental stability). Furthermore, Type H has the highest values in the three subscales reflecting positive emotions, namely sense of achievement at work, life satisfaction, and experience of social support. The unambitious Type U describes the type of protection, with the lowest values in all variables reflecting professional commitment (significance of work, professional ambition, tendency to exert, and striving for perfection) and the highest values in emotional distancing. Furthermore, Type U has low values in resignation tendencies and medium to high values in positive emotions (except for sense of achievement at work). Similar to Type H, Type U can be seen as a healthy pattern of work-related behavior and experiences. On the contrary, both Type A and Type B are considered 'at risk' types. Type A describes high professional commitment (highest values in subjective significance of work, tendency to exert, and striving for perfection) but at the same time, has a reduced ability of emotional distancing which is coupled with strong resignation tendencies. This leads to low levels of balance and mental stability among those individuals assigned to Type A. Type B is the unhealthiest pattern and describes strong resignation tendencies, reduced professional ambition and a low significance of work. Furthermore, Type B reflects a lack of active coping and the lowest values in sense of achievement at work and life satisfaction.

These WCEP types can be associated with different approaches to describe and explain the experience of stress. For example, Schaarschmidt and Fischer (2008) highlight the strong relation of the excessively-ambitious Type A with the type A personality described by Friedman and Rosenman (1974). The type A personality was considered a risk factor for

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cardiovascular disease and combined excessively high ambition, competitiveness, arousability, and hostility. However, later studies have shown that the actual pathogenic element in this behavior pattern was the experience of negative emotions such as hostility (Hemingway & Marmot, 1999; Suls & Bunde, 2005). Thus, it was not the high effort that was worrying, but only the experience of negative emotions due to insufficient reward. This imbalance was later highlighted by the model of effort-reward imbalance (Siegrist, 1996). The model assumes, that high stress levels are more likely if high effort is accompanied by insufficient reward (Siegrist, 1996). Reward in this regard refers not only to monetary reward but also to the maintenance of the social status (e.g. promotion prospects, job security) as well as non-material gratification in the form of appreciation and recognition for work effort, especially from superiors (Siegrist, 2013). Effort on the other hand comprises external demands (e.g. workload) as well as internal demands (e.g. an extremely high tendency to exert; Siegrist, 2013). This indicates a connection with the excessively-ambitious Type A, since this pattern is characterized by high work motivation and professional ambition (effort), however without the experience of a positive emotional response (reward; Schaarschmidt & Kieschke, 2013). Another theory regarding occupational stress is also relevant within this pattern: The demand-control model proposed by Karasek (1979). This model assumes increased levels of stress if high demands are combined with low subjective control. Individuals that lack suitable skills and thus, experience little control in challenging situations, perceive their job as “high strain” (Karasek, 1979). This is applicable to the excessively-ambitious Type A since individuals assigned to this pattern obtain high values in resignation tendency and striving for perfection but have the lowest levels in emotional distancing, and a lack of mental stability.

The risk of burnout Type B on the other hand addresses the somewhat blurred concept of burnout (Freudenberger, 1975; Maslach & Jackson, 1981; Maslach, Schaufeli, & Leiter,

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2001). The containment of burnout as a disease and the differentiation from other diseases has not yet been resolved sufficiently (Berger et al., 2012). For example, a study following more than 1000 Finnish dentists over a period of seven years highlighted the close connection between burnout and depressive symptoms (Ahola, Hakanen, Perhoniemi, & Mutanen, 2014). It was found that burnout and depressive symptoms developed similarly, they either stayed at a similar level or changed together. Although these findings suggest that burnout is the equivalent of depressive symptoms in work life (Ahola et al., 2014), other findings indicate that burnout and depression are distinct constructs (Melamed, Shirom, Toker, Berliner, & Shapira, 2006)³. Nevertheless, the association between burnout and depressive symptoms is consistently acknowledged (Bianchi et al., 2015; Maslach et al., 2001). Maslach and colleagues stated that “burnout is a problem that is specific to the work context, in contrast to depression, which tends to pervade every domain of a person’s life” (Maslach et al., 2001; p. 404)⁴. Maslach and colleagues understood burnout as the experience of emotional exhaustion, cynism (or depersonalization), and inefficacy (or reduced personal accomplishment) and generally relate burnout to low levels of activation and pleasure (Maslach et al., 2001). This highlights the association to depression, which reflects a combination of low positive affect and high negative affect (Watson & Clark, 1995). Schaarschmidt and Fischer (2008) argue that the risk of burnout Type B addresses the burnout concept insofar as it combines low levels of professional commitment and coping capacity with a lack of positive emotions (lowest values the sense of achievement at work, life satisfaction, or experience of social support). Consequently, Type B is associated with high values in emotional exhaustion, demotivation, dissatisfaction with work, and an aversion to students (Schaarschmidt & Fischer, 2008). In line with the empirical established association of depression and burnout

³ The review from Bianchi, Schonfeld, and Laurent (2015) has shown that the overlap between depression and burnout depends highly on the conceptualization and assessment of burnout and depression.

⁴ Research on burnout offer now other conceptualizations of burnout beside the one conceptualization assessed with the Maslach Burnout Inventory (for an overview see Melamed et al., 2006).

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(Bianchi et al., 2015), Type B is also associated with the highest values in depression (Bauer et al., 2006).

The four WCEP types were primarily included in German stress research, generally confirming their relevance for health (Rath et al., 2015; Schaarschmidt & Fischer, 2008; Schulz et al., 2011). However, although PA and NA are known to be crucial for both overall well-being and work-related behavior and experiences, the relevance of PA and NA in these four types has been neglected. Locating the WCEP types in the theoretically embedded research of emotionality is highly relevant, not only because of the pivotal role of emotionality on relevant outcomes and for the identification of self-report bias in future studies (Podsakoff et al., 2003; Watson & Tellegen, 1985), but also to identify the amount of variance due to environmental factors or individual differences within this questionnaire. Moreover, including affectivity offers also implications for individual centered interventions. Since the four WCEP types base on a combination of eleven dimensions, it is unclear which component or variable actually is responsible for connections with health parameters (Groß & Kohlmann, 2018). In contrast, the model of PA and NA (Watson & Tellegen, 1985) does not only clearly explain individual differences based on only two dimensions, but also offers simple suggestions to improve mental health and well-being: Reducing negative affect and improving positive affect (Kaplan et al., 2009). These suggestions are already included in attempts to reduce stress-related impairments such as depression and burnout. Depression is defined as high levels of negative affect and low levels of positive affect, and burnout can be seen as work-related depression (Ahola et al., 2014; Watson, Clark, & Carey, 1988). The opposite pole of work-related depression or burnout is called job engagement and reflects high levels of activation and pleasure (Maslach et al., 2001). Hence, attempts to prevent or reduce symptoms of burnout or work-related depression focus on increasing engagement or positive affect (Maslach et al., 2001). Since affect impacts not only the experience of stress

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and performance in the work context but also the quality of social relationships, happiness, and physical and mental health (Lyubomirsky, King et al., 2005), these suggestions may not only yield positive effects on occupational well-being but also on mental and physical health.

Positive Emotions, Individual Resources, and Everyday Activities

In 1998, Barbara Fredrickson presented a model that explains why positive emotions create so many benefits and ultimately lead to more well-being and happiness. Again, important to note is that positive emotions in this model are not only defined as high arousal emotions (such as joy), but also low arousal emotions (such as contentment). Hence, studies on positive emotions subsume both high positive affect and low negative affect into the umbrella term “positive emotions” because both have a positive valence (Feldman-Barrett & Russel, 1998, 1999; Tellegen et al., 1999). The Broaden and Build (B&B) theory of positive emotions constitutes, that positive emotions influence attention, thoughts, and behaviors and thus build up individual mental, physical, and social resources (Fredrickson, 1998, 2000, 2013). Fredrickson argues that positive emotions broaden attention and cognition, enable flexible and creative thinking, and improve motivation and coping. This in turn initiates an upward spiral that not only promotes emotional well-being in the moment, but has lasting effects on future coping skills, because positive emotions increase the urge to engage in activities that build up physical, intellectual, and social resources (Folkman, 2008; Fredrickson & Joiner, 2002). Even if positive emotions fade, resources such as a supportive environment, high self-efficacy, or good physical health will remain and strengthen future coping abilities, ultimately leading to increased psychological resilience and well-being (Fredrickson & Joiner, 2002; Garland et al., 2010). Hence, positive emotions are both the cause and the result of activities that strengthen personal resources, leading to an upward spiral towards mental health and well-being (Cohn & Fredrickson, 2010; Lyubomirsky & Layous, 2013). In line with that, the Conservation of Resources (COR) theory (Hobfoll, 1989,

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2002) highlighted the pivotal role of personal resources for the experience of stress. Especially when faced with resource loss, both the accumulation of resources and the accompanied experience of positive emotions are crucial. This theoretical assumption has found empirical support (Sin & Lyubomirsky, 2009). Positive emotions “appear to be a core active ingredient that buffer resilient people against depression in the aftermath of crises” (Fredrickson et al., 2003, p. 373). Moreover, positive emotions (either high or low arousal) are even able to undo lingering cardiovascular effects of negative emotions (Fredrickson, 2001; Garland et al., 2010). For example, experiencing emotions such as mild joy or contentment improved the cardiovascular recovery from induced negative emotions (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000). Likewise, the availability of personal resources like self-efficacy or social support are highly relevant, especially in times of stress (Hobfoll, 2002). Self-efficacy for example, can protect from the experience of stress and thus, reduce the risk for burnout (Schwarzer & Hallum, 2008). Similarly, social support can reduce the risk of depression by mitigating the negative effects of stressful life events (Berkman, Glass, Brissette, & Seeman, 2000). Hence, efforts to cultivate individual resources and promote positive emotions are especially beneficial after the experience of stress or negative emotions and can minimize depression in the long run (Folkman & Moskowitz, 2000; Fredrickson et al., 2003). For example, beside positive reappraisal and goal-directed problem-focused coping, the “infusion of ordinary events with a positive meaning” (Folkman & Moskowitz, 2000, p. 650) has been highlighted as a useful coping strategy in times of stress.

Thus, everyday activities that build personal resources and increase positive emotions can be seen as a promising way to reduce mental burdens and to enhance positive mental health and well-being. This is particularly important due to a lack of resources in the mental health care system (Jacobi et al., 2014; Kazdin & Rabbitt, 2013). It is necessary to promote

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new ways and models of psychological supply that are distinctly scheduled before therapeutic care (Kazdin, 2011; Muñoz, Cuijpers, Smit, Barrera, & Leykin, 2010). Preventive arrangements with comparatively low effect sizes can be seen as a new approach and an addition to the current therapeutic support in both the treatment and prevention of mental impairment and the promotion of positive mental health (Diener et al., 2017; Kazdin & Rabbitt, 2013; Lyubomirsky, Sheldon et al., 2005). Not only individuals suffering from mental impairment but also those aiming to enhance their positive mental health could profit from these arrangements. In this regard, behavior constitutes a key mechanism that can affect well-being relationships, work, and life (Layous, Chancellor, & Lyubomirsky, 2014; Lyubomirsky & Layous, 2013; Walsh, 2011). These findings are not only relevant for individual health promotion but also for the public health perspective. The broad impact of everyday activities on general well-being and physical and mental health can lead to a reduced use of other health services, which makes “lifestyle changes a best-buy intervention” (Kazdin & Rabbitt, 2013, p. 180). Moreover, everyday activities can be modified relatively easily compared to genetic dispositions and life circumstances (Diener et al., 2017). Also, they are affordable, cost-effective, flexible (e.g. can be applied to individual preferences), and universally applicable as both individuals with mental impairments and individuals aiming to enhance their positive mental health can possibly benefit (Kazdin & Rabbitt, 2013). A research area that addresses both public health and the individual perspective is the concept of Mental Health Literacy (MHL, Jorm et al., 1997). The concept emphasizes the importance of the individual’s knowledge about the existence and processes of mental impairments. MHL includes not only the recognition of mental disorders and available support systems, but also the awareness about ways of prevention and early intervention. By increasing MHL, individuals and communities are empowered to make informed decisions and thus, play an active role in mental health care. Ultimately, MHL can strengthen public mental health through prevention, early intervention, and improved social support (Jorm, 2012). In this

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regard, self-help strategies to reduce mental impairments and enhance mental health gained increasingly attention (Jorm, 2012; Morgan & Jorm, 2009). Morgan and Jorm (2009) conducted a study in order to allocate a list of self-help strategies as suggestions to prevent mental burdens and to treat mild depression. With a Delphi consensus method, two independent panels, consisting of experts (panel 1) and individuals with a history of depression (panel 2), were asked to rate the usefulness and feasibility of different self-help strategies. A systematic review of the evidence was given to them in order to support their judgements (Morgan & Jorm, 2008). This led to 14 activities (see Table 1) rated as helpful and easy to implement by both panels (Morgan & Jorm, 2009).

Table 1.

Self-help strategies formulated to reduce mental burdens and treat mild depression

- 1 Engage in exercise or physical activity.
 - 2 Practice good sleep hygiene.
 - 3 Maintain a regular sleep schedule.
 - 4 Do something you enjoy.
 - 5 Try to remain involved in purposeful activities for at least a small part of every day.
 - 6 Make a list of strategies that have worked in the past for depression and use them.
 - 7 Engage in an activity that gives a feeling of achievement.
 - 8 Enlist a trusted friend or relative to help you get out and about or do activities.
 - 9 Make sure you get out of the house for at least a short time each day.
 - 10 Reward yourself for reaching a small goal.
 - 11 Learn relaxation methods.
 - 12 Talk over problems or feelings with someone who is supportive and caring.
 - 13 Let family and friends know how you are feeling so that they are aware of what you are going through.
 - 14 Eat a healthy, balanced diet.
-

Note. Jorm (2012, p. 236), adapted from "Self-help strategies that are helpful for sub-threshold depression: A Delphi consensus study" by A. J. Morgan and A. F. Jorm, 2009, *Journal of Affective Disorders*, 115, p. 199.

Further research indicated that these activities are useful in reducing sub-threshold depression (Morgan, Jorm, & Mackinnon, 2012; Morgan, Mackinnon, & Jorm, 2013). However, their associations with positive outcomes in work (healthy work-related behavior and experiences) and life (positive mental health) are yet unclear. Likewise, the underlying

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structure of these activities and their associations with affectivity have not yet been investigated.

Summary and Open Questions

Objectives

The general aim of the present work is to identify the importance of emotionality and mental health activities for positive mental health and work-related behavior and experiences. To this extent, three distinct analyses are conducted. The first study focuses on the role of dispositions (PA and NA) in explaining healthy- and unhealthy work-related behavior and experiences, while also considering environmental aspects like the type of profession (teacher student, teacher, and physiotherapist). The second study analyses the basic structure of MHL self-help strategies and their usefulness as items of a scale to assess mental health activity. The third study focuses exclusively on a sample of teachers and identifies the relationship between mental health activities and positive outcomes in work (work-related behavior and experiences) and life (positive mental health), while taking PA and NA into account.

The Role of Positive and Negative Affectivity in Healthy and Unhealthy Work-related Behavior and Experiences (Study I)

PA and NA are important aspects both for overall and occupational well-being (Diener, Suh, Lucas, & Smith, 1999; Judge & Larsen, 2001; Lyubomirsky, King et al., 2005; Ng & Sorensen, 2009) and influence perceptions and behaviors in various ways (Ng & Sorensen, 2009). Schaarschmidt and Fischer (2008) highlighted variations in work-related perceptions and behaviors by defining four types of work-related behavior and experiences. Although PA and NA are established to be crucial for experiences and behaviors, the relevance of PA and NA in the four WCEP types remained unclear. Hence the aim of Study I is to identify the associations of both PA and NA with healthy and unhealthy work-related behavior and experiences. Considering the influence of affectivity on cognitive, instrumental,

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and motivational processes (Ng & Sorensen, 2009) and findings on research with the Affective Profile Model (Bood, Archer, & Norlander, 2004; Norlander, Bood, & Archer, 2002), detailed assumptions on associations of PA and NA with work-related motivation, coping, and emotions can be made.

Based on the idea that PA and NA are distinct dimensions, the Affective Profile Model distinguishes four affective profiles by combining the extension of PA and NA (Bood et al., 2004; Norlander et al., 2002). This approach can be related to classifications of Hippocrates and Galen, with a choleric temperament associated with high PA/high NA, a phlegmatic temperament referring to low PA/low NA, a sanguine temperament referring to high PA/low NA, as well as a melancholic temperament associated with low PA/high NA (Watson & Clark, 1995). By combining the extension of PA and NA into four profiles, it is possible to establish general differences between the profiles and identify main effects of either PA, NA, or both. In line with earlier research (Kaplan et al., 2009; Ng & Sorensen, 2009; Seo et al., 2004), Garcia and colleagues found that especially PA seems to be relevant in regard to variables associated with high engagement or motivation and good coping capacities. For example, improved performance under stress and purpose in life was higher for those individuals high in PA, irrespective of the amount of NA (Garcia, Al Nima, & Kjell, 2014). Furthermore, individuals high in PA exercised more, acted better under stress, and had a lower systolic blood pressure than those low in PA (Norlander et al., 2002). This is in line with meta-analytic findings, associating PA with profound coping capacities, reflected in reduced values for role stress, depersonalization, emotional exhaustion, and turnover intentions (Ng & Sorensen, 2009; Thoresen et al., 2003). Since the healthy-ambitious Type H obtains high work motivation and good coping capacity, high values of PA are assumed for Type H. Since the risk of burnout Type B is characterized by low coping capacity and a lack of engagement and motivation, low values of PA are assumed for Type B. Because Type A

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and Type U are associated with either high work motivation (Type A) or good coping capacity (Type U), no clear differences can be derived in PA between these two groups. However, since PA seems to be strongly associated with engagement in work (Ng & Sorensen, 2009) this might indicate slightly higher values for PA in Type A than in Type U.

On the contrary, those individuals low in NA had higher values in emotional stability and dispositional optimism, and lower values in the experiences of stress, whereas the amount of PA was less important (Bood et al., 2004; Norlander, Johansson, & Bood, 2005). These variables can be associated with coping abilities (e.g. balance and mental stability) and positive emotions (e.g. life satisfaction) assessed with the WCEP questionnaire. Both the healthy-ambitious Type H and the unambitious Type U obtain high values in these dimensions. Thus, low values of NA are assumed for both Type H and Type U.

In regard to other positive aspects however, both affectivity dimensions seem to be important. Individuals with the combination of high PA and low NA reported more positive relations, higher environmental mastery, more self-acceptance, and more personal growth than all the other combinations (Garcia et al., 2014). Moreover, those individuals high in PA and low in NA had the highest values in self-esteem, psychological well-being, happiness, and satisfaction compared to all the other profiles (Di Fabio & Bucci, 2015; Schütz et al., 2013). This is further support for the assumed combination of high PA and low NA for the healthy-ambitious Type H, since this pattern combines high values in experience of social support, feelings of success, and positive emotions. Moreover, Type H obtains lower psychological impairments than all the other types (Schaarschmidt & Fischer, 2008). The risk of burnout Type B reflects the direct opposite of Type H and obtains negative emotions, high levels of exhaustion, high performance inefficacy, and low self-esteem. Garcia and colleagues (2014) found that individuals low in PA and high in NA had the lowest values in overall psychological well-being, especially environmental mastery, self-acceptance, and positive

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relations with others. Moreover, the profile reflecting low PA and high in NA was associated with the highest depression scores and the lowest levels of life satisfaction and happiness (Schütz et al., 2013). Based on these findings and the conceptualization of burnout as work-related depression (Maslach et al., 2001; Watson & Clark, 1995), high values of NA and low values of PA are expected for Type B.

Generally, high PA is associated with more motivation and a higher coping capacity whereas high NA is related to higher perceived workload and more stress (Bood et al., 2004; Bowling et al., 2015; Lyubomirsky, King et al., 2005). Since the excessively-ambitious Type A experiences high levels of stress, high levels of NA are assumed for this type. At the same time, Type A reflects also high work motivation, which suggests higher values in PA compared to Type U and Type B since these types obtain only low work motivation. The unambitious Type U is associated with low values in work-related motivation but high values in coping capacity. Thus, for Type U, lower values of NA compared to Type A and Type B, and higher values of PA compared to Type B can be assumed. Figure 3 depicts the expected associations between PA, NA, and the four types of work-related behavior and experiences.

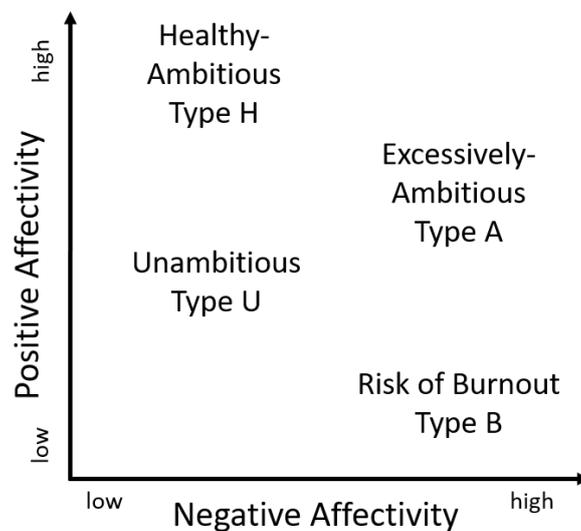


Figure 3. Assumed associations between positive and negative affectivity and types of work-related behavior and experiences

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Locating the four WCEP types within the theoretically embedded research of emotionality is essential, not only to understand the potential role of individual differences in previous findings but also to determine the relevance of considering PA and NA in future studies that apply the WCEP questionnaire. The model of PA and NA is especially appealing for mental health promotion as it does not only comprise the trait aspect but also the state perspective. Thus, the model explains why dispositions are strongly related to mental health and well-being and furthermore how mental health and well-being can be elevated, namely by reducing negative affect and increasing positive affect (Diener, Lucas, & Scollon, 2006; Fredrickson, 2004; Fredrickson & Losada, 2005; Sin & Lyubomirsky, 2009).

Previous research with the four WCEP types has shown that teachers in particular show only a low degree of accordance with the healthy-ambitious Type H but a high accordance to the excessively-ambitious Type A or the risk of burnout Type B (Schaarschmidt & Fischer, 2008). This finding seems to be in line with environmental challenges and potential stressors within this profession (Johnson et al., 2005; Krause & Dorsemagen, 2011; Montgomery & Rupp, 2005), which can lead to impairments of psychological and physical well-being (Bauer et al., 2006; Sann, 2003). However, these consequences are not mandatory. Limited coping capacities and high values in neuroticism (which is strongly related to NA) seem to increase the probability of emotional exhaustion and occupational diseases (Klusmann, Kunter, Voss, & Baumert, 2012; Krause & Dorsemagen, 2011; Lohmann-Haislah, 2012). Moreover, problematic work-related behavior and experiences are present even at the beginning of the professional career (Reichl et al., 2014; Zimmermann et al., 2012). This suggests that a part of the impaired coping abilities and the low values of satisfaction might be attributable to dispositions. This assumption is in line with an integrative model of satisfaction in which both environmental and individual aspects are relevant when it comes to satisfaction (Heller, Watson, & Ilies,

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2004). PA and NA are crucial in this regard since these dimensions are strongly related to cognitive and receptive processes, positive and negative, respectively (Forgas & George, 2001; Judge & Larsen, 2001). Thus, although teachers report high levels of subjective stress such as an effort-reward imbalance (Unterbrink et al., 2007), this does not necessarily indicate solely profession specific causes because PA and NA influence the experience of stress as well as perceived effort and reward. Hence, it is essential to consider not only different types of professions but also PA and NA in studies on work-related behavior and experiences, thus taking both individual factors and the environment into account. By assessing PA, NA, as well as work-related behavior and experiences in a sample that includes already practicing teachers, students training to be teachers, and physiotherapists as a comparison group, it is possible to identify profession specific risk factors as well the role of individual dispositions in work-related behavior and experiences. Only with this knowledge appropriate interventions can be planned, either with a focus on the individual, on the environment, or both.

Dimensionality of Mental Health Activities in a German Sample (Study II)

Although the relevance of self-help strategies to reduce mental burdens and improve mental health and well-being has been recognized by various researchers, a short scale to assess mental health activity is still missing. In this regard, the 14 self-help strategies formulated within the concept of MHL constitute a useful starting point (Morgan & Jorm, 2009). Hence, the aim of Study II is to identify the underlying structure of the 14 mental health activities as well as their utility as items of a scale to assess behavior relevant not only for mental impairment but also for positive mental health.

Although these mental health activities were formulated as suggestions to reduce depression, they aim at concepts or determinants well-known to be related to positive mental health and well-being. For example, activities No. 4 (“I do something I enjoy”), No. 5 (I remain involved in purposeful activities for at least a small part of the day.”), No. 7 (“I am

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engaged in activities that give me a feeling of achievement”), and No. 11 (“I practice relaxation methods”) can enhance self-efficacy, meaning in life, and generate positive emotions (Bandura, 1993; Fredrickson, 2004; Fredrickson & Joiner, 2002; King, Hicks, Krull, & Del Gaiso, 2006). Activity No. 6 (“I have a mental list of strategies that have worked in the past for depressive moods and use them.”) can facilitate positive behavior due to positive outcome expectations and ultimately increase self-efficacy (Bandura, 1989). Likewise connected with well-being are a regular exercise (activity No. 1 “I am physically active or engaged in exercise”; Diener, 1984; McMahon et al., 2017), a healthy diet (activity No. 14 “I eat a healthy and balanced diet”; Khalid, Williams, & Reynolds, 2016) as well as sufficient and good sleep (activities No. 2 “I practice a good sleep hygiene” and No. 3 “I maintain a regular sleep schedule”; Ong, Kim, Young, & Steptoe, 2017; Pressman & Cohen, 2005). Engaging in social activities and facilitating social support (activities No. 8 “I have a trusted friend or relative, with whom I get out and do some activities”, No. 9 “I leave the house daily”, No. 12 “I talk over problems or feelings with someone who is supportive and caring”, and No. 13 “I let my family and friends know how I am feeling and what I am going through”) can increase feelings of connectedness and self-esteem and impact overall well-being (Antonovsky, 1979; Cohen & Wills, 1985; Diener, 1984; Ryan & Deci, 2000). Finally, attaining self-concordant goals (activity No. 10 “I reward myself for reaching a small goal”) is also strongly associated with well-being (Brunstein, 1993; Sheldon & Elliot, 1999). Hence, mental health activities can be related to important individual resources like self-efficacy, meaning in life, social support, and physical health, all of which are central in the experience of stress and well-being (Hobfoll, 2002).

Thus, these mental health activities seem to be not only relevant for reducing depression but might also be suitable to enhance positive mental health and well-being. However, it remained unclear to what extent these activities are appropriate as items to assess

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behavior that can not only reduce mental burdens and depressive symptoms, but might also facilitate positive mental health and well-being (Keyes, 2007). Identifying associations of mental health activities with positive mental health is especially relevant since positive mental health is more than merely the absence of depression or mental impairment but instead considered as a distinct dimension (Keyes, 2006; World Health Organization, 2001). Positive mental health can be understood as an unidimensional concept consisting of the presence of general emotional, psychological, and social well-being and thus, includes both the eudaimonic and hedonic view of subjective well-being (Keyes, 2007). The identification of associations with positive mental health can broaden the context in which mental health activities can and should be promoted (Kazdin & Rabbitt, 2013). The present study is a first step in this direction. If there is an association between mental health activities and positive mental health, this indicates that mental health activities might not only be suitable to reduce subthreshold depression but might also be beneficial for those individuals aiming to enhance their positive mental health and well-being. Moreover, no information exists on how these activities relate to the model of positive and negative affectivity, such as whether some strategies are more related to PA or to NA. By integrating these activities in the extensive research on emotionality, a more detailed perspective is possible on how these activities might work and how they relate to mental health.

The Relationship between Mental Health Activities and Positive Outcomes in Work and Life Taking Affectivity into Account (Study III)

The relevance of everyday activities has been recognized for both the prevention of mental impairment and the promotion of mental health and well-being (Jorm, 2012; Kazdin & Rabbitt, 2013; Layous et al., 2014; Walsh, 2011). Integrating both the B&B theory (Fredrickson, 2004) and the COR theory (Hobfoll, 1989, 2002), Study III associates mental health activities with positive outcomes in work (work-related behavior and experiences) and

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life (positive mental health), while taking affectivity into account. This approach extends existing knowledge on mental health activities by evaluating their potential for the work context, and by providing a more detailed picture of the relationships between affectivity, mental health activities, and positive outcomes.

Work-related behavior and experiences are not only highly relevant for individual mental and physical health (Bauer et al., 2006) but also for professional outcomes. In regard to teachers for example, differences in work-related behavior and experiences are also associated with instructional performance, student's motivation, and student's achievement (Klusmann et al., 2008b; Klusmann et al., 2016). Hence, it is especially interesting to identify risk factors or resources that can predict healthy or unhealthy work-related behavior and experiences. In this regard, mental health activities might be quite relevant. Earlier research highlighted the importance of leisure activities for variables indicating good coping capacities. For example, physical activities, social activities, or low effort activities can balance work stressors, increase relaxation and detachment from work, and reduce the need for recovery (Brummelhuis & Bakker, 2012; Sonnentag & Fritz, 2007; Sonnentag & Zijlstra, 2006). Since mental health activities do not only include these types of leisure activities but can also be related to important personal resources that are highly relevant for coping processes and positive emotions (e.g. social support, self-efficacy), the practice of mental health activities might be associated with enhanced coping and positive emotions. Furthermore, longitudinal findings show that the practice of low effort activities, social activities, or physical activities as well as the presence of individual resources (e.g. self-efficacy) can increase vigor and engagement (Brummelhuis & Bakker, 2012). Hence, mental health activities might also be related to work-related motivation. Overall, positive associations are assumed between mental health activities and those work-related behavior and experiences that indicate good coping and positive emotions (Type U), and especially

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with those that also show high work motivation (Type H). Conversely, negative associations are assumed between mental health activities and those work-related behavior and experiences that reflect low coping abilities and diminished positive emotions (Type A), and especially with those that also lack work motivation (Type B).

Given the potential of mental health activities to build individual resources and to promote positive emotions, it might be possible to increase healthy work-related behavior and experiences and reduce unhealthy work-related behavior and experiences by practicing mental health activities (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson, 2013; Hobfoll, 2002; Lyubomirsky & Layous, 2013). Identifying associations between mental health activities and work-related behavior and experiences is a first step in evaluating the potential of mental health activities for the work context and an important extension to earlier research.

Another aim of Study III is to investigate the relationships between affectivity, mental health activities, and positive outcomes in more detail. Both high PA and low NA can be seen as individual resources that affect positive outcomes in work and life (Bruk-Lee et al., 2009; Judge et al., 2017; Lyubomirsky, King et al., 2005; Lyubomirsky, Sheldon et al., 2005). Hobfoll (2002) assumes that individuals who possess such personal resources are more likely to accumulate other resources (he called this *resource caravans*). Likewise, the B&B theory of positive emotions assumes an upward spiral towards health and well-being based on the experience of positive emotions (Fredrickson, 2004). The B&B theory states that the experience of positive emotions widens the individual's perception and cognition, and increases the urge to engage in activities that build long lasting physical, social, and intellectual resources (Fredrickson, 2004, 2013). Hence, positive emotions influence positive outcomes not only directly but also indirectly by engaging in activities that build personal resources (Fredrickson, 2013). Even if positive emotions fade, resources such as a supportive

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environment, self-efficacy, or physical health will endure and strengthen future coping abilities. These improved coping abilities lead to more positive emotions in the future and thus, initiate an upward dynamic towards health and well-being (Fredrickson & Joiner, 2002; Garland et al., 2010). PA and NA can be located within the B&B theory because both high PA and low NA reflect the individual tendency to experience high or low arousal positive emotions (Feldman-Barrett & Russel, 1998, 1999). Considering both the COR theory and the B&B theory, high PA and low NA can be seen as individual resources that affect positive outcomes (e.g. positive mental health and work-related behavior and experiences) both directly and indirectly via a higher engagement in activities that build long lasting resources (e.g. mental health activities).

Indeed, PA and NA can not only predict positive outcomes in work and life but are also associated with everyday behavior (Lyubomirsky, King et al., 2005; Ong et al., 2017; Pressman & Cohen, 2005). PA and NA can be associated with the basic behavioral systems of approach and withdrawal, respectively (Watson et al., 1999; Watson & Clark, 1984). PA is associated with the behavioral facilitation system, which guides the individual to approach situations that promise pleasure and reward. In contrast, NA can be located within the behavioral inhibition system which aims to keep the individual away from negative situations, potential threats, or danger (Watson et al., 1999). Moreover, positive emotions are not only the source but also the reward for pleasurable goal-directed behaviors and thus, increase the likelihood of starting and maintaining the practice of positive activities (Fredrickson, 2004; Seo et al., 2004; Watson et al., 1999). Hence, individuals high in PA or low in NA are more involved in various social, recreational, occupational, and physical activities (Lyubomirsky, King et al., 2005). Considering these findings and based on the B&B theory (Fredrickson, 2004) and the COR theory (Hobfoll, 2002) it can be assumed that high PA and low NA are associated with an increased practice of mental health activities. Furthermore, it can be

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expected that mental health activities are associated with positive outcomes in work and life, because practicing mental health activities can be a way to build individual resources (such as self-efficacy or physical health) and facilitate positive emotions, which strengthen the individual in times of stress, improve motivation and coping, and eventually lead to more health and well-being (Fredrickson, 2004; Hobfoll, 2002).

Overall, the aim of Study III is the identification of associations between mental health activities and positive outcomes in work (work-related behavior and experiences) and life (positive mental health), while taking affectivity into account. The results of this study provide further insights into the interplay between dispositions and mental health activities for desirable outcomes. On the basis of these results, suggestions for mental health promotion within and beyond the work context can be formulated.

Especially within the teaching profession, the need for preventive and curative support seems to be necessary (Johnson et al., 2005; Reichl et al., 2014; Schaarschmidt & Fischer, 2008; Scheuch, Haufe, & Seibt, 2015). Despite a wide range of scientific research on teacher health, links between work-related behavior and experiences, affectivity and activities such as mental health activities have not yet been investigated systematically. Earlier research focused rather on stressors and stress reduction and thus the decrease of negative affect (Lehr, 2007; Rothland, 2013a). On the other hand, Schwarzer and Hallum (2008) demanded the necessity of researching the so-called “teacher engagement”, which is the counterpole of burnout and addresses positive emotions (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008a). The question of whether the preventive approach of mental health activities is associated with positive mental health and healthy work-related behavior and experiences in teachers is therefore in the context of studies requested to understand and promote the health of teachers. The occurrence of risky work-related behavior and experiences (Type A and Type B) already at the beginning of the teaching career indicates the relevance of imparting basic knowledge

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about mental impairments and useful strategies at an early stage (Reichl et al., 2014). Hence, the present study contributes to the further development and encouragement of health-promoting interventions in teachers' everyday lives (Sann, 2003; Schult, Münzer-Schrobildgen, & Sparfeldt, 2014).

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References

- Adams, J., Dudenhöffer, S., Claus, M., Kimbel, R., Letzel, S., & Rose, D.-M. (2016). Coping patterns in special school staff: Demographic and organizational factors. *Occupational Medicine*, *66*(2), 138–142. <https://doi.org/10.1093/occmed/kqv157>
- Ahola, K., Hakanen, J., Perhoniemi, R., & Mutanen, P. (2014). Relationship between burnout and depressive symptoms: A study using the person-centred approach. *Burnout Research*, *1*(1), 29–37. <https://doi.org/10.1016/j.burn.2014.03.003>
- Antonovsky, A. (1980). *Health, stress, and coping* (1st ed.). *Jossey-Bass Social and Behavioral Science Series*. San Francisco: Jossey-Bass Publishers.
- Ashkanasy, N. M., Härtel, C. E.J., & Daus, C. S. (2002). Diversity and emotion: The new frontiers in organizational behavior research. *Journal of Management*, *28*, 307–338. <https://doi.org/10.2307/2392498>
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*(9), 1174–1184.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, *28*(2), 117–148.
- Basinska, M. A., Andruszkiewicz, A., & Grabowska, M. (2011). Nurses' sense of coherence and their work related patterns of behaviour. *International Journal of Occupational Medicine and Environmental Health*, *24*(3), 256–266. <https://doi.org/10.2478/S13382-011-0031-1>
- Bauer, J., Stamm, A., Virnich, K., Wissing, K., Muller, U., Wirsching, M., & Schaarschmidt, U. (2006). Correlation between burnout syndrome and psychological and psychosomatic symptoms among teachers. *International Archives of Occupational and Environmental Health*, *79*(3), 199–204. <https://doi.org/10.1007/s00420-005-0050-y>

GENERAL INTRODUCTION

- Berger, M., Linden, M., Schramm, E., Hillert, A., Voderholzer, U., & Maier, W. (2012, March 7). *Positionspapier der Deutschen Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde (DGPPN) zum Thema Burnout*.
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millenium. *Social Science & Medicine*, *51*, 843–857.
- Berry, D. S., & Sherman Hansen, J. (1996). Positive affect, negative affect, and social interaction. *Journal of Personality and Social Psychology*, *71*, 796–809.
- Bianchi, R., Schonfeld, I. S., & Laurent, E. (2015). Burnout-depression overlap: A review. *Clinical Psychology Review*, *36*, 28–41. <https://doi.org/10.1016/j.cpr.2015.01.004>
- Bood, S. A., Archer, T., & Norlander, T. (2004). Affective personality in relation to general personality, self-reported stress, coping, and optimism. *Individual Differences Research*, *2*(1), 26–37.
- Bowling, N. A., Alarcon, G. M., Bragg, C. B., & Hartman, M. J. (2015). A meta-analytic examination of the potential correlates and consequences of workload. *Work & Stress*, *29*(2), 95–113. <https://doi.org/10.1080/02678373.2015.1033037>
- Bruk-Lee, V., Khoury, H. A., Nixon, A. E., Goh, A., & Spector, P. E. (2009). Replicating and extending past personality/job satisfaction meta-analyses. *Human Performance*, *22*(2), 156–189. <https://doi.org/10.1080/08959280902743709>
- Brummelhuis, L. L. ten, & Bakker, A. B. (2012). Staying engaged during the week: The effect of off-job activities on next day work engagement. *Journal of Occupational Health Psychology*, *17*(4), 445–455. <https://doi.org/10.1037/a0029213>
- Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology*, *65*(5), 1061–1070.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310–357.

GENERAL INTRODUCTION

- Cohn, M. A., & Fredrickson, B. L. (2010). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *The Journal of Positive Psychology, 5*(5), 355–366.
<https://doi.org/10.1080/17439760.2010.508883>.
- Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion, 9*(3), 361–368. <https://doi.org/10.1037/a0015952>.
- Collins, P. Y., Patel, V., Joestl, S. S., March, D., Insel, T. R., Daar, A. S., . . . Stein, D. J. (2011). Grand challenges in global mental health. *Nature, 475*(7354), 27–30.
<https://doi.org/10.1038/475027a>
- Connolly, J. J., & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences, 29*, 265–281.
- Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology, 38*(4), 668–678.
- Debus, M. E., König, C. J., Kleinmann, M., & Werner, C. S. (2015). Examining the effects of negative affectivity on self- and supervisor ratings of job stressors: The role of stressor observability. *Work & Stress, 29*(4), 341–361.
<https://doi.org/10.1080/02678373.2015.1075233>
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*(2), 197–229.
- Di Fabio, A., & Bucci, O. (2015). Affective profiles in Italian high school students: Life satisfaction, psychological well-being, self-esteem, and optimism. *Frontiers in Psychology, 6*, 1310. <https://doi.org/10.3389/fpsyg.2015.01310>
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575.

GENERAL INTRODUCTION

- Diener, E., & Emmons, R. A. (1985). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47*, 1105–1117.
- Diener, E., Heintzelman, S. J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L. D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology, 58*(2), 87–104. <https://doi.org/10.1037/cap0000063>
- Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *American Psychologist, 61*(4), 305–314. <https://doi.org/10.1037/0003-066X.61.4.305>
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*(2), 276–302.
- Egloff, B. (1998). The independence of positive and negative affect depends on the affect measure. *Personality and Individual Differences, 25*, 1101–1109.
- Feldman-Barrett, L., & Russel, J. A. (1998). Independence and bipolarity in the structure of current affect. *Journal of Personality and Social Psychology, 74*(4), 967–984.
- Feldman-Barrett, L., & Russel, J. A. (1999). The structure of current affect: Controversies and emerging consensus. *Current Direction in Psychological Science, 8*(1), 10–14.
- Folkman, S. (2008). The case for positive emotions in the stress process. *Anxiety, Stress, and Coping, 21*(1), 3–14. <https://doi.org/10.1080/10615800701740457>
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*(6), 647–654. <https://doi.org/10.1037//0003-066X.55.6.647>
- Forgas, J. P., & George, J. M. (2001). Affective influences on judgments and behavior in organizations: An information processing perspective. *Organizational Behavior and Human Decision Processes, 86*(1), 3–34. <https://doi.org/10.1006/obhd.2001.2971>
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*(3), 300–319.

GENERAL INTRODUCTION

- Fredrickson, B. L. (2000). Cultivating positive emotions to optimize health and well-being. *Prevention & Treatment, 3*.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218–226.
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 359*(1449), 1367–1378. <https://doi.org/10.1098/rstb.2004.1512>
- Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine & A. Plant (Eds.), *Advances in Experimental Social Psychology* (Vol. 47, pp. 1–53). Amsterdam: Academic Press. <https://doi.org/10.1016/B978-0-12-407236-7.00001-2>
- Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science, 13*(2), 172–175.
- Fredrickson, B. L., & Levenson, R. W. (1998). Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition and Emotion, 12*(2), 191–220. <https://doi.org/10.1080/026999398379718>
- Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60*(7), 678–686. <https://doi.org/10.1037/0003-066X.60.7.678>
- Fredrickson, B. L., Mancuso, R. A., Branigan, C., & Tugade, M. M. (2000). The undoing effect of positive emotions. *Motivation and Emotion, 24*(4), 237–258.
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology, 84*(2), 365–376. <https://doi.org/10.1037/0022-3514.84.2.365>

GENERAL INTRODUCTION

Freudenberger, H. (1975). The staff burn-out syndrome in alternative institutions.

Psychotherapy: Theory, Research & Practice, 12(1), 73–82.

Friedman, M., & Rosenman, R. H. (1974). *Type A behavior and your heart*. New York:

Knopf.

Ganster, D. C., & Rosen, C. C. (2013). Work stress and employee health: A multidisciplinary review. *Journal of Management*, 39(5), 1085–1122.

<https://doi.org/10.1177/0149206313475815>

Garcia, D., Al Nima, A., & Kjell, O. N. E. (2014). The affective profiles, psychological well-being, and harmony: Environmental mastery and self-acceptance predict the sense of a harmonious life. *PeerJ*, 2, e259. <https://doi.org/10.7717/peerj.259>

Garland, E. L., Fredrickson, B. L., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review*, 30(7), 849–864. <https://doi.org/10.1016/j.cpr.2010.03.002>.

Green, P. D., Goldman, S. L., & Salovey, P. (1993). Measurement error masks bipolarity in affect ratings. *Journal of Personality and Social Psychology*, 64, 1029–1041.

Groß, D., & Kohlmann, C.-W. (2018). Persönlichkeit, Selbstregulation und Gesundheit. In C.-W. Kohlmann, C. Salewski, & M. A. Wirtz (Eds.), *Psychologie in der Gesundheitsförderung* (pp. 183–199). Hogrefe.

Gruber, J., Mauss, I. B., & Tamir, M. (2011). A dark side of happiness? How, when, and why happiness is not always good. *Perspectives on Psychological Science*, 6(3), 222–233.

<https://doi.org/10.1177/1745691611406927>

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis.

GENERAL INTRODUCTION

The Journal of Applied Psychology, 87(2), 268–279. <https://doi.org/10.1037//0021-9010.87.2.268>

- Heller, D., Watson, D., & Ilies, R. (2004). The role of person versus situation in life satisfaction: A critical examination. *Psychological Bulletin*, 130(4), 574–600. <https://doi.org/10.1037/0033-2909.130.4.574>
- Hemingway, H., & Marmot, M. (1999). Psychosocial factors in the etiology and prognosis of coronary heart disease: Systematic review of prospective cohort studies. *British Medical Journal*, 318, 1460–1467.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513–524.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307–324. <https://doi.org/10.1037//1089-2680.6.4.307>
- Jacobi, F., Höfler, M., Siegert, J., Mack, S., Gerschler, A., Scholl, L., . . . Wittchen, H.-U. (2014). Twelve-month prevalence, comorbidity and correlates of mental disorders in Germany: The mental health module of the German health interview and examination survey for adults (DEGS1-MH). *International Journal of Methods in Psychiatric Research*, 23(3), 304–319. <https://doi.org/10.1002/mpr.1439>
- Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *Journal of Managerial Psychology*, 20(2), 178–187. <https://doi.org/10.1108/02683940510579803>
- Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist*, 67(3), 231–243.
- Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": A survey of the public's ability to recognise mental disorders

GENERAL INTRODUCTION

and their beliefs about the effectiveness of treatment. *Medical Journal of Australia*, 166, 182–186.

Judge, T. A., Weiss, H. M., Kammeyer-Mueller, J. D., & Hulin, C. L. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and of change. *The Journal of Applied Psychology*, 102(3), 356–374. <https://doi.org/10.1037/apl0000181>

Judge, T. A., & Larsen, R. J. (2001). Dispositional affect and job satisfaction: A review and theoretical extension. *Organizational Behavior and Human Decision Processes*, 86(1), 67–98. <https://doi.org/10.1006/obhd.2001.2973>

Kaplan, S., Bradley, J. C., Luchman, J. N., & Haynes, D. (2009). On the role of positive and negative affectivity in job performance: A meta-analytic investigation. *The Journal of Applied Psychology*, 94(1), 162–176. <https://doi.org/10.1037/a0013115>

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24(2), 285–308.

Kazdin, A. E. (2011). Evidence-based treatment research: Advances, limitations, and next steps. *American Psychologist*, 66(8), 685–698.

Kazdin, A. E., & Rabbitt, S. M. (2013). Novel models for delivering mental health services and reducing the burdens of mental illness. *Clinical Psychological Science*, 1(2), 170–191. <https://doi.org/10.1177/2167702612463566>

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Chatterji, S., Lee, S., Ormel, J., . . .

Wang, P. S. (2009). The global burden of mental disorders: An update from the WHO World Mental Health (WMH) Surveys. *Epidemiology and Psychiatric Sciences*, 18(1), 23–33.

Keyes, C. L. M. (2006). Subjective well-being in mental health and human development research worldwide: An introduction. *Social Indicators Research*, 77(1), 1–10. <https://doi.org/10.1007/s11205-005-5550-3>

GENERAL INTRODUCTION

- Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *American Psychologist*, *62*(2), 95–108. <https://doi.org/10.1037/0003-066X.62.2.95>
- Khalid, S., Williams, C. M., & Reynolds, S. A. (2016). Is there an association between diet and depression in children and adolescents? A systematic review. *The British Journal of Nutrition*, *116*(12), 2097–2108. <https://doi.org/10.1017/S0007114516004359>
- King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology*, *90*(1), 179–196. <https://doi.org/10.1037/0022-3514.90.1.179>
- Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008a). Engagement and emotional exhaustion in teachers: Does the school context make a difference? *Applied Psychology*, *57*, 127–151.
- Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008b). Teachers' occupational well-being and quality of instruction: The important role of self-regulatory patterns. *Journal of Educational Psychology*, *100*(3), 702–715. <https://doi.org/10.1037/0022-0663.100.3.702>
- Klusmann, U., Kunter, M., Voss, T., & Baumert, J. (2012). Berufliche Beanspruchung angehender Lehrkräfte: Die Effekte von Persönlichkeit, pädagogischer Vorerfahrung und professioneller Kompetenz. *Zeitschrift für Pädagogische Psychologie*, *26*(4), 275–290. <https://doi.org/10.1024/1010-0652/a000078>
- Klusmann, U., Richter, D., & Lüdtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale assessment study. *Journal of Educational Psychology*, *108*(8), 1193–1203. <https://doi.org/10.1037/edu0000125>

GENERAL INTRODUCTION

- Krause, A., & Dorsewagen, C. (2011). Gesundheitsförderung für Lehrerinnen und Lehrer. In E. Bamberg, A. Ducki, & A.-M. Metz (Eds.), *Innovatives Management. Gesundheitsförderung und Gesundheitsmanagement in der Arbeitswelt // Ein Handbuch* (pp. 561–581). Göttingen: Hogrefe.
- Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der "Positive und Negative Affect Schedule" (PANAS). *Diagnostica*, 42(2), 139–156.
- Lahtinen, E., Joubert, N., Raeburn, J., & Jenkins, R. (2005). Strategies for promoting the mental health of populations. In H. Herrman, S. Saxena, & R. Moodie (Eds.), *Promoting Mental Health: Concepts Emerging Evidence Practice*. Geneva: World Health Organization.
- Layous, K., Chancellor, J., & Lyubomirsky, S. (2014). Positive activities as protective factors against mental health conditions. *Journal of Abnormal Psychology*, 123(1), 3–12.
<https://doi.org/10.1037/a0034709>
- Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality*, 1, 141–169.
- Lehr, D. (2007). *Affektive Störungen bei Lehrerinnen und Lehrern: Untersuchungen zur Diagnostik von Depressivität, zu berufbezogenen Risikofaktoren und zur Bewältigung beruflicher Belastungen*. Philipps-Universität Marburg, Marburg.
- Leue, A., & Beauducel, A. (2011). The PANAS structure revisited: On the validity of a bifactor model in community and forensic samples. *Psychological Assessment*, 23(1), 215–225. <https://doi.org/10.1037/a0021400>
- Levin, J., & Stokes, J. P. (1989). Dispositional approach to job satisfaction: Role of negative affectivity. *Journal of Applied Psychology*, 74, 752–758.

GENERAL INTRODUCTION

- Lohmann-Haislah, A. (2012). *Stressreport Deutschland 2012: Psychische Anforderungen, Ressourcen und Befinden*. Dortmund [u.a.]: Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.
- Lucas, R. E., & Diener, E. (2001). Understanding extraverts' enjoyment of social situations: The importance of pleasantness. *Journal of Personality and Social Psychology*, *81*(2), 343–356. <https://doi.org/10.1037//0022-3514.81.2.343>
- Lucas, R. E., & Fujita, F. (2000). Factors influencing the relation between extraversion and pleasant affect. *Journal of Personality and Social Psychology*, *79*(6), 1039–1056. <https://doi.org/10.1037//0022-3514.79.6.1039>
- Lyubomirsky, S., King, L. A., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, *131*(6), 803–855. <https://doi.org/10.1037/0033-2909.131.6.803>
- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science*, *22*(1), 57–62. <https://doi.org/10.1177/0963721412469809>
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*(2), 111–131. <https://doi.org/10.1037/1089-2680.9.2.111>
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior*, *2*(2), 99–113.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*, 397–422.
- McMahon, E. M., Corcoran, P., O'Regan, G., Keeley, H., Cannon, M., Carli, V., . . . Wasserman, D. (2017). Physical activity in European adolescents and associations with

GENERAL INTRODUCTION

- anxiety, depression and well-being. *European Child & Adolescent Psychiatry*, 26(1), 111–122. <https://doi.org/10.1007/s00787-016-0875-9>
- Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin*, 132(3), 327–353. <https://doi.org/10.1037/0033-2909.132.3.327>
- Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education*, 28(3), 458.
- Morgan, A. J., & Jorm, A. F. (2008). Self-help interventions for depressive disorders and depressive symptoms: A systematic review. *Annals of General Psychiatry*, 7, 13. <https://doi.org/10.1186/1744-859X-7-13>
- Morgan, A. J., & Jorm, A. F. (2009). Self-help strategies that are helpful for sub-threshold depression: A Delphi consensus study. *Journal of Affective Disorders*, 115(1-2), 196–200. <https://doi.org/10.1016/j.jad.2008.08.004>
- Morgan, A. J., Jorm, A. F., & Mackinnon, A. J. (2012). Email-based promotion of self-help for subthreshold depression: Mood Memos randomised controlled trial. *The British Journal of Psychiatry: the Journal of Mental Science*, 200(5), 412–418. <https://doi.org/10.1192/bjp.bp.111.101394>
- Morgan, A. J., Mackinnon, A. J., & Jorm, A. F. (2013). Behavior change through automated e-mails: Mediation analysis of self-help strategy use for depressive symptoms. *Behaviour Research and Therapy*, 51(2), 57–62. <https://doi.org/10.1016/j.brat.2012.11.002>
- Muñoz, R. F., Cuijpers, P., Smit, F., Barrera, A. Z., & Leykin, Y. (2010). Prevention of major depression. *Annual Review of Clinical Psychology*, 6, 181–212. <https://doi.org/10.1146/annurev-clinpsy-033109-132040>

GENERAL INTRODUCTION

- Necowitz, L. B., & Roznowski, M. (1994). Negative affectivity and job satisfaction: Cognitive processes underlying the relationship and effects on employee behaviors. *Journal of Vocational Behavior, 45*, 270–294.
- Ng, T. W., & Sorensen, K. L. (2009). Dispositional affectivity and work-related outcomes: A meta-analysis. *Journal of Applied Social Psychology, 39*, 1255–1287.
- Norlander, T., Bood, S.-Å., & Archer, T. (2002). Performance during stress: Affective personality, age, and regularity of physical exercise. *Social Behavior and Personality: an International Journal, 30*(5), 495–508. <https://doi.org/10.2224/sbp.2002.30.5.495>
- Norlander, T., Johansson, A., & Bood, S. A. (2005). The affective personality: Its relation to quality of sleep, well-being and stress. *Social Behavior and Personality, 33*, 709–722.
- Ong, A. D., Kim, S., Young, S., & Steptoe, A. (2017). Positive affect and sleep: A systematic review. *Sleep Medicine Reviews, 35*, 21–32. <https://doi.org/10.1016/j.smrv.2016.07.006>
- Pikhart, H., & Pikhartova, J. (2015). *The relationship between psychosocial risk factors and health outcomes of chronic diseases: a review of the evidence for cancer and cardiovascular diseases. Health Evidence Network synthesis report.*
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology, 88*(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health? *Psychological Bulletin, 131*(6), 925–971. <https://doi.org/10.1037/0033-2909.131.6.925>
- Rath, H. M., Steimann, M., Ullrich, A., Rotsch, M., Zurborn, K.-H., Koch, U., . . . Bergelt, C. (2015). Psychometric properties of the occupational stress and coping inventory (AVEM) in a cancer population. *Acta Oncologica, 54*(2), 232–242. <https://doi.org/10.3109/0284186X.2014.933873>

GENERAL INTRODUCTION

- Rau, R., & Henkel, D. (2013). Zusammenhang von Arbeitsbelastungen und psychischen Erkrankungen: Review der Datenlage. *Der Nervenarzt*, *84*(7), 791–798.
<https://doi.org/10.1007/s00115-013-3743-6>
- Reichl, C., Wach, F.-S., Spinath, F. M., Brünken, R., & Karbach, J. (2014). Burnout risk among first-year teacher students: The roles of personality and motivation. *Journal of Vocational Behavior*, *85*(1), 85–92. <https://doi.org/10.1016/j.jvb.2014.05.002>
- Rosenberg, E. L. (1998). Levels of analysis and the organization of affect. *Review of General Psychology*, *2*, 247–270.
- Rothland, M. (Ed.). (2013). *Belastung und Beanspruchung im Lehrerberuf: Modelle, Befunde, Interventionen* (2., überarb. Aufl. 2013). Wiesbaden: Springer Fachmedien Wiesbaden; Imprint: Springer VS.
- Russel, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*(6), 1161–1178.
- Russel, J. A., & Carroll, J. M. (1999a). On the bipolarity of positive and negative affect. *Psychological Bulletin*, *125*(1), 3–30.
- Russel, J. A., & Carroll, J. M. (1999b). The phoenix of bipolarity: Reply to Watson and Tellegen (1999). *Psychological Bulletin*, *125*(5), 611–617.
- Russell, B. (1932). *The conquest of happiness*. London: George Allen & Unwin LTD.
- Rusting, C. L. (1999). Interactive effects of personality and mood on emotion-congruent memory and judgment. *Journal of Personality and Social Psychology*, *77*(5), 1073–1086.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78.
- Sann, U. (2003). Job conditions and wellness of german secondary school teachers. *Psychology & Health*, *18*(4), 489–500. <https://doi.org/10.1080/0887044031000147210>

GENERAL INTRODUCTION

- Schaarschmidt, U., & Fischer, A. W. (2008). *AVEM - Arbeitsbezogenes Verhaltens- und Erlebensmuster: Manual* (3rd ed.). Frankfurt am Main: Pearson.
- Schaarschmidt, U., & Kieschke, U. (2013). Beanspruchungsmuster im Lehrerberuf: Ergebnisse und Schlussfolgerungen aus der Potsdamer Lehrerstudie. In M. Rothland (Ed.), *Belastung und Beanspruchung im Lehrerberuf: Modelle, Befunde, Interventionen* (2nd ed., pp. 81–99). Wiesbaden: Springer Fachmedien Wiesbaden; Imprint: Springer VS.
- Scheuch, K., Haufe, E., & Seibt, R. (2015). Lehrergesundheit. *Deutsches Ärzteblatt*, *112*, 347–356. <https://doi.org/10.3238/arztebl.2015.0347>
- Schmuckle, S. C., Egloff, B., & Burns, L. R. (2002). The relationship between positive and negative affect in the Positive and Negative Affect Schedule. *Journal of Research in Personality*, *36*, 463–475.
- Schult, J., Münzer-Schrobildgen, M., & Sparfeldt, J. R. (2014). Belastet, aber hochzufrieden? *Zeitschrift für Gesundheitspsychologie*, *22*(2), 61–67. <https://doi.org/10.1026/0943-8149/a000114>
- Schulz, M., Damkröger, A., Voltmer, E., Löwe, B., Driessen, M., Ward, M., & Wingefeld, K. (2011). Work-related behaviour and experience pattern in nurses: Impact on physical and mental health. *Journal of Psychiatric and Mental Health Nursing*, *18*(5), 411–417. <https://doi.org/10.1111/j.1365-2850.2011.01691.x>
- Schütz, E., Sailer, U., Al Nima, A., Rosenberg, P., Andersson Arntén, A.-C., Archer, T., & Garcia, D. (2013). The affective profiles in the USA: Happiness, depression, life satisfaction, and happiness-increasing strategies. *PeerJ*, *1*, e156. <https://doi.org/10.7717/peerj.156>
- Schwarzer, R., & Hallum, S. (2008). Perceived teacher self-efficacy as a predictor of job stress and burnout: Mediation analyses. *Applied Psychology*, *57*, 152–171.

GENERAL INTRODUCTION

- Seligman, M.E.P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5–14.
- Seo, M.-G., Feldman Barrett, L., & Bartunek, J. M. (2004). The role of affective experience in work motivation. *Academy of Management Review*, *29*, 423–439.
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, *76*(3), 482–497.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, *1*(1), 27–41.
- Siegrist, J. (2013). Berufliche Gratifikationskrisen und depressive Störungen: Aktuelle Forschungsevidenz. *Der Nervenarzt*, *84*(1), 33–37. <https://doi.org/10.1007/s00115-012-3667-6>
- Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology*, *65*(5), 467–487. <https://doi.org/10.1002/jclp.20593>
- Sonnentag, S., & Fritz, C. (2007). The recovery experience questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*, *12*(3), 204–221. <https://doi.org/10.1037/1076-8998.12.3.204>
- Sonnentag, S., & Zijlstra, F. R. H. (2006). Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue. *Journal of Applied Psychology*, *91*(2), 330–350.
- Suls, J., & Bunde, J. (2005). Anger, anxiety, and depression as risk factors for cardiovascular disease: The problems and implications of overlapping affective dispositions. *Psychological Bulletin*, *131*(2), 260–300. <https://doi.org/10.1037/0033-2909.131.2.260>

GENERAL INTRODUCTION

- Tellegen, A., Watson, D., & Clark, L. A. (1999). On the dimensional and hierarchical structure of affect. *Psychological Science*, *10*(4), 297–303.
- Thom, J., Bretschneider, J., Kraus, N., Handerer, J., & Jacobi, F. (2019). Versorgungsepidemiologie psychischer Störungen: Warum sinken die Prävalenzen trotz vermehrter Versorgungsangebote nicht ab?. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz*, *62*(2), 128–139. <https://doi.org/10.1007/s00103-018-2867-z>
- Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & Chermont, K. de (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, *129*(6), 914–945. <https://doi.org/10.1037/0033-2909.129.6.914>
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, *86*(2), 320–333. <https://doi.org/10.1037/0022-3514.86.2.320>.
- Unterbrink, T., Hack, A., Pfeifer, R., Buhl-Griesshaber, V., Müller, U., Wesche, H., . . . Bauer, J. (2007). Burnout and effort-reward-imbalance in a sample of 949 German teachers. *International Archives of Occupational and Environmental Health*, *80*(5), 433–441. <https://doi.org/10.1007/s00420-007-0169-0>
- Van Horn, J. E., Taris, T. W., Schaufeli, W. B., & Schreurs, P. J.G. (2004). The structure of occupational well-being: A study among Dutch teachers. *Journal of Occupational and Organizational Psychology*, *77*, 365–375.
- Van Yperen, N. W. (2003). On the link between different combinations of negative affectivity (NA) and positive affectivity (PA) and job performance. *Personality and Individual Differences*, *35*(8), 1873–1881. [https://doi.org/10.1016/S0191-8869\(03\)00036-9](https://doi.org/10.1016/S0191-8869(03)00036-9)

GENERAL INTRODUCTION

- Voltmer, E., Rosta, J., Aasland, O. G., & Spahn, C. (2010). Study-related health and behavior patterns of medical students: A longitudinal study. *Medical Teacher, 32*(10), e422-8.
<https://doi.org/10.3109/0142159X.2010.496008>
- Voltmer, E., Spahn, C., Schaarschmidt, U., & Kieschke, U. (2011). Work-related behavior and experience patterns of entrepreneurs compared to teachers and physicians. *International Archives of Occupational and Environmental Health, 84*(5), 479–490.
<https://doi.org/10.1007/s00420-011-0632-9>
- Walsh, R. (2011). Lifestyle and mental health. *American Psychologist, 66*(7), 579–592.
<https://doi.org/10.1037/a0021769>
- Watson, D. (1988a). Intraindividual and interindividual analyses of positive and negative affect: Their relation to health complaints, perceived stress, and daily activities. *Journal of Personality and Social Psychology, 54*, 1020–1030.
- Watson, D. (1988b). The vicissitudes of mood measurements: Effects of varying descriptors, time frames, and response formats on measures of positive and negative affect. *Journal of Personality and Social Psychology, 55*, 128–141.
- Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In C. R. Synder & S. J. Lopez (Eds.), *Handbook of Positive Psychology*. Oxford University Press.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*(3), 465–490.
- Watson, D., & Clark, L. A. (1994). *The PANAS-X manual for positive and negative affect schedule*. Iowa City: University of Iowa.
- Watson, D., & Clark, L. A. (1995). Depression and the melancholic temperament. *European Journal of Personality, 9*, 351–366.

GENERAL INTRODUCTION

- Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97*(3), 346–353.
- Watson, D., Clark, L. A., McIntyre, C. W., & Hamaker, S. (1992). Affect, personality, and social activity. *Journal of Personality and Social Psychology, 63*(6), 1011–1025.
<https://doi.org/10.1037/0022-3514.63.6.1011>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*(6), 1063–1070.
- Watson, D., Hubbard, B., & Wiese, D. (2000). General traits of personality and affectivity as predictors of satisfaction in intimate relationships: Evidence from self- and partner ratings. *Journal of Personality, 68*(3), 413–449.
- Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review, 96*(2), 234–254.
- Watson, D., & Slack, A. K. (1993). General factors of affective temperament and their relation to job satisfaction over time. *Organizational Behavior and Human Decision Processes, 54*, 181–202.
- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*(2), 219–235.
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology, 76*(5), 820–838.
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in Organizational Behavior, Volume 18, 1996: An*

GENERAL INTRODUCTION

Annual Series of Analytical Essays and Critical Reviews (pp. 1–74). Greenwich, Conn., London: JAI Press.

World Health Organization (2001). *Mental health: New understanding, new hope* (The world health report). Geneva.

Zautra, A. J., Reich, J. W., Davis, M. C., Potter, P. T., & Nicolson, N. A. (2000). The role of stressful events in the relationship between positive and negative affects: Evidence from field and experimental studies. *Journal of Personality*, *68*, 927–951.

Zimmermann, L., Unterbrink, T., Pfeifer, R., Wirsching, M., Rose, U., Stöbel, U., . . .

Bauer, J. (2012). Mental health and patterns of work-related coping behaviour in a German sample of student teachers: A cross-sectional study. *International Archives of Occupational and Environmental Health*, *85*(8), 865–876.

<https://doi.org/10.1007/s00420-011-0731-7>

STUDY I

STUDY I: THE ROLE OF POSITIVE AND NEGATIVE AFFECTIVITY IN HEALTHY AND UNHEALTHY WORK-RELATED BEHAVIOR AND EXPERIENCES

Hanna Hofmann and Carl-Walter Kohlmann

Hofmann, H. & Kohlmann, C.-W. (2019). The role of positive and negative affectivity in healthy and unhealthy work-related behavior and experiences. *European Journal of Health Psychology*, 26, 56-67. <https://doi.org/10.1027/2512-8442/a000030>

STUDY II

STUDY II: DIMENSIONALITY OF MENTAL HEALTH ACTIVITIES IN A GERMAN SAMPLE

Hanna Hofmann and Carl-Walter Kohlmann

Hofmann, H. & Kohlmann, C.-W. (2019). Dimensionality of mental health activities in a German sample. *Health Promotion International*, 34, 1106-1116.

<https://doi/10.1093/heapro/day078>

STUDY III

STUDY III: THE RELEVANCE OF MENTAL HEALTH ACTIVITIES FOR POSITIVE OUTCOMES IN WORK AND LIFE TAKING AFFECTIVITY INTO ACCOUNT

Hanna Hofmann, Daniel Groß, and Carl-Walter Kohlmann

Hofmann, H., Groß, D., & Kohlmann, C.-W. (2019). *The relevance of mental health activities for positive outcomes in work and life taking affectivity into account*. Manuscript submitted for publication.

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Abstract

Mental health activities were formulated as strategies to reduce mental burdens. Little is known about their relevance for positive outcomes in work and life. Integrating research of pathogenesis with salutogenesis, the present study aimed to identify associations between mental health activities and positive outcomes in work and life, while taking affectivity into account. Based on the Broaden and Build (B&B) theory and Conservation of Resources (COR) theory it was assumed that the practice of mental health activities is associated with positive outcomes in work (work-related behavior and experiences) and in life (positive mental health), and that mental health activities mediate the association between affectivity and the respective outcomes. These assumptions were tested in a sample of 326 German teachers (75% female, age: $M = 44$, $SD = 11.85$). Indeed, the practice of mental health activities was associated with more positive mental health and more healthy work-related behavior and experiences. Furthermore, mental health activities partly explained the relationship between affectivity and the respective outcomes. The present findings indicate the potential of mental health activities for mental health promotion but future studies are recommended in order to establish causal effects.

Keywords: behavior, work, mediation analyses, mental health, activity, affectivity

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Introduction

Behavior has been recognized as a key mechanism to reduce mental impairment and promote positive mental health and well-being (Jorm, 2012; Kazdin & Rabbitt, 2013, Layous, Chancellor, & Lyubomirsky, 2014, Walsh, 2011). Consequently, various suggestions for suitable activities were made, either with the aim to improve subjective well-being and happiness (e.g. Caunt, Franklin, Brodaty, & Brodaty, 2013; Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011) or to reduce mental burdens (Morgan & Jorm, 2009). In order to combine research of pathogenesis and salutogenesis (Keyes, 2006), the present study aims to identify the relevance of activities formulated to reduce mental burdens for positive outcomes in work and life, taking affectivity into account. This approach extends existing knowledge on mental health activities by evaluating their potential for the work context, and providing a more detailed picture of the relationships between affectivity, mental health activities, and positive outcomes in work and life.

Integrating healthy and unhealthy work-related behavior and experiences as further outcome variables it is a first step in evaluating the usefulness of mental health activities for the work context. The present study focuses on the teaching profession since this profession is related to various environmental challenges and potential stressors (Montgomery & Rupp, 2005), and teachers often show unhealthy work-related behavior and experiences (Schaarschmidt & Fischer, 2008). These unhealthy work-related behavior and experiences can impact not only the teacher's mental and physical health (Bauer et al., 2006), but also student's motivation (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008) and student's achievement (Klusmann, Richter, & Lüdtke, 2016). Hence, it is particularly interesting to identify possible predictors for healthy work-related behavior and experiences within this profession. The knowledge about associations between mental health activities and healthy or unhealthy work-related behavior and experiences is the first step in this regard.

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Individual differences in the experience of positive or negative emotions are important determinants for predicting positive outcomes in work and life (Lyubomirsky, King, & Diener, 2005; Ng & Sorensen, 2009; Pressman & Cohen, 2005). Since earlier research highlighted the relevance of everyday activities as mediators between dispositions and desired outcomes (Diener, Suh, Lucas, & Smith, 1999; Lyubomirsky et al., 2005; Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011), another aim of the present study is to identify the extent to which mental health activities function as mediators between affectivity and positive outcomes in work and life. As a theoretical framework, we include the Broaden and Build (B&B) theory of positive emotions (Fredrickson, 2004) and the Conservation of Resources (COR) theory (Hobfoll, 1989, 2002). We will describe the assumed associations with the respective variables in more detail below.

Mental Health Activities

There were different attempts to assemble a list of beneficial activities, either with the aim to reduce mental burdens and prevent mental impairment (Morgan & Jorm, 2009) or to increase subjective well-being and happiness (e.g. Caunt et al., 2013; Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011). Research on activities with the aim to increase happiness has shown that these activities were not only related to happiness but that they also mediated the effect of dispositions on happiness and thus, seem to be an important factor why dispositions are related to positive outcomes (Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011). With a slightly different aim, suggestions for beneficial activities were also formulated within the concept of Mental Health Literacy (Morgan & Jorm, 2009). Based on a Delphi consensus study, mental health activities were formulated as suggestions to reduce mental burdens and to treat mild depression. These mental health activities can be grouped into three subscales, namely positive orientation, emotion regulation, and physical engagement (Hofmann & Kohlmann, 2018). The positive orientation subscale combines activities that can increase

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positive emotions (e.g. ‘I do something I enjoy’), meaning in life (e.g. ‘I remain in purposeful activities for at least a small part of the day’), self-efficacy (e.g. ‘I am engaged in activities that give me a feeling of achievement’), and social connectivity (e.g. ‘I have a trusted friend or relative, with whom I get out and do some activities’). Emotion regulation activities can reduce tension or arousal (e.g. ‘I reward myself for reaching a small goal’, ‘I practice relaxation methods’), and physical engagement activities can enhance and maintain physical health (e.g. ‘I am physically active or engaged in exercise’, ‘I eat a healthy and balanced diet’). Overall, practicing these mental health activities offers the potential to foster positive emotions and to build individual resources, both of which are highly relevant for positive outcomes in work and life (Hobfoll, 2002; Fredrickson, 2001, 2004). The usefulness of these mental health activities in reducing depressive symptoms has been confirmed empirically for individuals with sub-threshold depression (Morgan, Jorm, & Mackinnon, 2012; Morgan, Mackinnon, & Jorm, 2013). However, little is known about the relevance of mental health activities for positive outcomes in work and life. The present study closes this gap and provides further information on mental health activities in relation to work-related behavior and experiences and positive mental health.

Positive Mental Health

Keyes presented a complete state model of health with two correlated but distinct dimensions (Keyes, 2007). One dimension reflects the presence (flourishing) or absence (languishing) of positive mental health and the other dimension reflects the presence or absence of mental illness (i.e., depressive symptoms). Positive mental health is defined as high levels of emotional (e.g. positive affect), psychological (e.g. environmental mastery), and social well-being (e.g. social integration, Keyes, 2007), reflecting both hedonic and eudaimonic well-being. We assume that mental health activities are positively related to positive mental health since mental health activities address positive emotions and individual

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resources, both of which are known to be related to emotional, psychological, or social well-being (Bandura, 1982; Berkman, Glass, Brissette, & Seeman, 2000; Boehm & Kubzansky, 2012; Fredrickson & Joiner, 2002; King, Hicks, Krull, & Del Gaiso, 2006).

Work-related Behavior and Experiences

Work-related behavior and experiences are related not only to the individual's mental and physical health (Ganster & Rosen, 2013, Schulz et al., 2011) but also to their professional performance (Harter, Schmidt, & Hayes, 2002; Klusmann et al., 2008). Based on the idea that the combination of work motivation, coping abilities, and emotions is decisive for health-related statements, Schaarschmidt and Fischer (2008) formulated healthy and unhealthy types of work-related behavior and experiences: Healthy-ambitious (Type H), unambitious (Type U), excessively-ambitious (Type A), and risk of burnout (Type B). The healthy-ambitious Type H reflects high, but not too high levels of work motivation combined with profound coping abilities and positive emotions. The unambitious Type U reflects the type of protection with extremely low work motivation but a high resistance to stress, and generally positive emotions. Since Type U is more relevant from a motivational perspective than from a health perspective (Schaarschmidt & Fischer, 2008), both Type H and Type U can be seen as healthy work-related behavior and experiences. On the contrary, Type A and Type B are considered at risk in regard to health (Schaarschmidt & Fischer, 2008). Type A reflects excessive commitment in regard to work, combined with reduced abilities for emotional distancing and recovery, and a lack of positive emotions. Type B refers to the risk of burnout and is associated with diminished work motivation, a lack of coping abilities, and the lowest levels of work and life satisfaction. Teachers assigned to Type A or Type B show reduced occupational well-being, high values of emotional exhaustion (Klusmann et al., 2008), and can be seen as at risk in regard to health (Bauer et al., 2006; Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Schulz et al., 2011). Moreover, these unhealthy work-related

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behavior and experiences also impact student's motivation and achievement (Klusmann et al., 2008, 2016). Hence, identifying possible predictors of healthy work-related behavior and experiences is not only beneficial for teachers but also for their students.

Earlier research indicates the potential of leisure activities in order to cope with work-related challenges. For example, leisure activities can balance work stressors and strains by increasing detachment from work, relaxation, mastery, and control (Sonnentag & Fritz, 2007). Brummelhuis and Bakker (2012) as well as Sonnentag and Zijlstra (2006) assessed the time engaged in leisure activities and found that social activities, low effort activities, and physical activities enhanced psychological detachment and relaxation and reduced the need for recovery. Psychological detachment and relaxation can be associated with good coping capacities found in Type U and Type H. Moreover, the leisure activities considered in these studies include aspects of mental health activities, for example social activities or physical activities. Hence, we assume positive relations of mental health activities with work-related behavior and experiences that indicate good coping abilities, namely Type H and Type U. Conversely, we assume negative associations with those work-related behavior and experiences that reflect low coping abilities, namely Type A and Type B.

Moreover, leisure activities might also be relevant for work motivation. For example, engaging in positive leisure activities (social, low effort, physical) increased vigor and engagement on the next work day (Brummelhuis & Bakker, 2012). Likewise, personal resources (like self-efficacy) at T1 predicted work engagement at T2 (Ouweneel, Le Blanc, & Schaufeli, 2011; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Since mental health activities can be related to important personal resources (e.g. self-efficacy, social support, meaning in life, and physical health), the engagement in mental health activities might also be connected to work-related motivation. Hence, we assume that the positive associations with mental health activities are especially high for Type H because unlike Type U, Type H

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reflects not only good coping abilities and positive emotions, but also high work motivation. On the contrary, Type B reflects diminished work motivation, a lack of coping abilities, and negative emotions whereas Type A obtains high work motivation. Hence, we assume that the negative associations with mental health activities are especially high for Type B.

Positive and Negative Affectivity, Mental Health Activities, and Positive Outcomes

Empirical research on happiness and subjective well-being consistently discussed genetic set points that predispose individuals towards the experience of life satisfaction, positive affect, and negative affect (Diener, Lucas, & Scollon, 2006; Lykken & Tellegen, 1996; Tellegen et al., 1988). Although this set point was doubt into question (Diener et al., 2006) and is now more understood as a genetically determined range (Watson, 2002), individual differences in the experience of positive and negative affect are highly relevant for positive outcomes in work and life (Diener, 1984; Folkman, 2008; Fredrickson, 2004; Judge, Weiss, Kammermeyer, & Hulin, 2017; Layous et al., 2014; Lyubomirsky et al., 2005). These individual differences are called positive affectivity (PA) and negative affectivity (NA; Watson, Clark, & Tellegen, 1988). High PA describes the tendency to experience high active positive emotions (e.g. excited, enthusiastic) and thus, pleasurable engagement, whereas low PA refers to the experience of lethargy and sadness. High NA describes the tendency to experience high active negative emotions (e.g. angry, upset) and thus, unpleasurable engagement, whereas low NA describes the tendency to feel calm and relaxed (Watson et al., 1988). As high PA refers to high active positive emotions whereas low NA addresses low active positive emotions, we consider both the presence of high PA and the absence of high NA as individual tendencies to experience positive emotions (Feldman-Barrett & Russel, 1998, 1999; Tellegen, Watson, & Clark, 1999). Empirical findings consistently associate both high PA and low NA with mental and physical health (Lyubomirsky et al., 2005; Pressman & Cohen, 2005), overall job satisfaction (e.g. Connolly & Viswesvaran, 2000; Judge & Larsen,

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2001; Judge et al., 2017), workplace experiences, and work behavior (Ng & Sorensen, 2009). Thus, high PA and low NA can be seen as individual resources that influence relevant outcomes in work and life. Hobfoll (2002) argues that individual resources do not exist in isolation but instead will cumulate, leading to more resources over time. Likewise, Fredrickson (2004) assumes an upward spiral towards mental health and well-being based on the experience of positive emotions. Fredrickson argues that positive emotions broaden the individual's thought-action repertoire and improve motivation and coping (B&B theory, Fredrickson, 2001, 2004). This process does not only promote well-being in the moment but also impacts future coping abilities, because positive emotions increase the urge to engage in activities that build physical, intellectual, and social resources (Fredrickson, 2004; Fredrickson, 2013; Fredrickson & Joiner, 2002). Even if positive emotions fade, resources such as a supportive environment, self-efficacy, or physical health will remain and strengthen future coping abilities, ultimately leading to increased psychological resilience and well-being (Fredrickson & Joiner, 2002; Garland et al., 2010). Hence, high PA and low NA can be seen as personal resources that affect positive outcomes (such as positive mental health and healthy work-related behavior and experiences) both directly and indirectly via their influence on behavior that build long lasting resources (e.g. mental health activities).

Indeed, in addition to their direct effect, PA and NA seem to be also indirectly associated with desirable outcomes via their influence on specific behaviors (Diener et al., 1999; Lyubomirsky et al., 2005). Generally, high PA is associated with approaching behavior whereas high NA is related to withdrawal tendencies (Watson & Clark, 1984; Watson, Wiese, Vaidya, & Tellegen, 1999). Moreover, positive emotions are both the source and the reward for goal-directed behavior (Rusting, 1999; Seo, Feldman Barrett, & Bartunek, 2004; Watson et al., 1999) and thus, are assumed to increase the practice and maintenance of positive health behaviors (Fredrickson, 2013). In line with that assumption, meta-analytic findings show that

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individuals high in PA and low in NA are more involved various social, recreational, occupational, and physical activities (Lyubomirsky et al., 2005). Moreover, higher state and trait PA is associated with a higher intake of dietary zinc, more exercise, and improved sleep (Ong, Kim, Young, & Steptoe, 2017; Pressman & Cohen, 2005; Pressman, Jenkins, Kraft-Feil, Rasmussen, & Scheier, 2017). Considering these findings and based on both the COR theory (Hobfoll, 2002) and the B&B theory (Fredrickson, 2004), we assume that the predispositions for high PA and low NA reflect individual resources that enhance the practice of mental health activities. In addition, we expect mental health activities to function as mediators between affectivity and desired outcomes in work and life (Layous et al., 2014). We assume that mental health activities are able to facilitate positive emotions and build individual resources (e.g. social support, self-efficacy, and meaning in life) that improve motivation and coping and thus, are positively related to desired outcomes in work and life (Folkman, 2008; Fredrickson, 2004; Lyubomirsky et al., 2005; Layous et al., 2014).

The Present Study

In the present study we aim to extend prior research on everyday activities by assessing the practice of activities formulated to prevent mental burdens (mental health activities) and identify their relationships with positive outcomes in work (healthy and unhealthy work-related behavior and experiences) and in life (positive mental health), taking affectivity into account. We assume that mental health activities are positively associated with positive mental health and healthy work-related behavior and experiences, and negatively associated with unhealthy work-related behavior and experiences. Moreover, we assume that mental health activities mediate the relationships between affectivity and positive mental health and between affectivity and work-related behavior and experiences.

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Method

Sample and Procedure

The sample of this study consisted of teachers ($n = 326$, 75% female, age: $M = 44$, $SD = 11.85$). The aims of the study were addressed at an annual Elementary School Teacher Conference in Germany. At this conference, practicing teachers meet and discuss current developments in their profession. Each individual received information on the aims of the study, on their voluntary participation as well confidentiality and anonymity. Participation in this study was not rewarded by any benefits. The study was online-based and a link was presented at the conference. Additionally, a link with relevant information was shared via e-mail to contacts of the authors who are working in the teaching profession. Via snow-ball sampling procedure, the link was shared with other teachers.

Measures

All instruments regarded in this study are self-report instruments.

Mental Health Activities

The general practice of mental health activities (Morgan & Jorm, 2009) was assessed with the Mental Health Activity Scale (MHAS, Hofmann & Kohlmann, 2018). The scale consist of three subscales: Positive orientation (four items: *I do something I enjoy; I remain involved in purposeful activities for at least a small part of the day; I have a mental list of strategies that have worked in the past for depressive moods and use them; and I am engaged in activities that give me a feeling of achievement*), physical engagement (three items: *I am physically active or engaged in exercise; I practice a good sleep hygiene; and I eat a healthy and balanced diet*) and emotion regulation (four items: *I have a trusted friend or relative, with whom I get out and do some activities; I reward myself for reaching a small goal; I practice relaxation methods; and I talk over problems or feelings with someone who is supportive and caring*). Within the MHAS total scale, all of these items were included, together with the item

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'I leave the house daily', which cannot be assigned to one of the three subscales. Individuals were told to state, how true the statement was for them in general. The response format ranged from *'not true'* (1), *'barely true'* (2), *'somewhat true'* (3), to *'true'* (4). The scale obtained acceptable reliability values (Hofmann & Kohlmann, 2018).

Positive Mental Health

Positive mental health was assessed with the Positive Mental Health Scale (PMH, Lukat et al., 2016). This scale combines the hedonic as well as the eudaimonic approach and assesses the presence of general emotional, psychological, and social well-being. The PMH-scale consists of nine statements (e.g. *I am a calm, balanced human being; I manage well to fulfill my needs*), the matching of which should be rated on a four point scale (1 = *not true*, 4 = *true*). The scale possesses a high internal consistency across different samples and an acceptable retest-reliability (Lukat et al., 2016).

Work-related Behavior and Experiences

Healthy and unhealthy work-related behavior and experiences were assessed with the Work-Related Coping Behavior and Experience Pattern (WCEP) Questionnaire (Schaarschmidt & Fischer, 2008). In this study, the short version with a total of 44 items and a five point unipolar scale (from 1= *totally disagree*, to 5 = *totally agree*) was used. The instrument captures three work-related dimensions, namely *professional commitment*, *coping capacity*, and *emotions* by eleven subscales: *subjective significance of work*, *professional ambition*, *tendency to exert*, *striving for perfection*, *emotional distancing*, *resignation tendencies*, *active coping*, *balance and mental stability*, *sense of achievement at work*, *life satisfaction*, and *experience of social support*. Based on these subscales, the similarities of every participant to each of the four different WCEP types were calculated using discriminant functions. These similarities are reflected in probability scores for each of the four WCEP

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types, where higher values indicate a higher accordance to the respective WCEP type (Schaarschmidt & Fischer, 2008; syntax available from Pearson Assessment).

Positive and Negative Affectivity

Positive and negative affectivity were assessed with the German version of the PANAS scales (Krohne, Egloff, Kohlmann, & Tausch, 1996). The extent of PA (e.g. *active, alert*) and NA (e.g. *nervous, jittery*) is captured with ten items per scale. Individuals were asked to rate how they felt in general on a five point scale from ‘*very slightly or not at all*’ (1) to ‘*extremely*’ (5). The scale obtained good reliability as well as factorial and external validity (Watson et al., 1988; Krohne et al., 1996).

Data Analysis

Means, standard deviations, and internal consistencies were calculated for each applied variable. We found variations of normal distribution for the probability scores for WCEP types and missing values for gender and positive mental health. Hence, in order to determine the associations between the probability scores for WCEP types and mental health activities, we used Kendall’s tau (Arndt, Turvey, & Andreasen, 1999). All the other correlation coefficients were calculated based on Pearson. To test whether mental health activities mediate the effect of affectivity on positive mental health and on work-related behavior and experiences, we calculated mediation analyses with a Robust Maximum Likelihood Estimator (MLR) and Full Information Maximum Likelihood Procedure (FIML) using the R package lavaan (Rosseel, 2012). This method allows using all available information and is robust against violations of normal distribution (Enders, 2001; Graham, 2009). PA and NA were set as predictors, mental health activities as mediators, and positive mental health and probability scores for WCEP types as dependent variables. These mediation analyses were calculated for the MHAS total scale and the MHAS subscales. Figure 1 illustrates the hypothesized model. All variables included in the analyses were z-standardized,

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since standardizing reduces the problem of multicollinearity among the included variables and makes it easier to interpret the results (Frazier, Tix, & Barron, 2004).

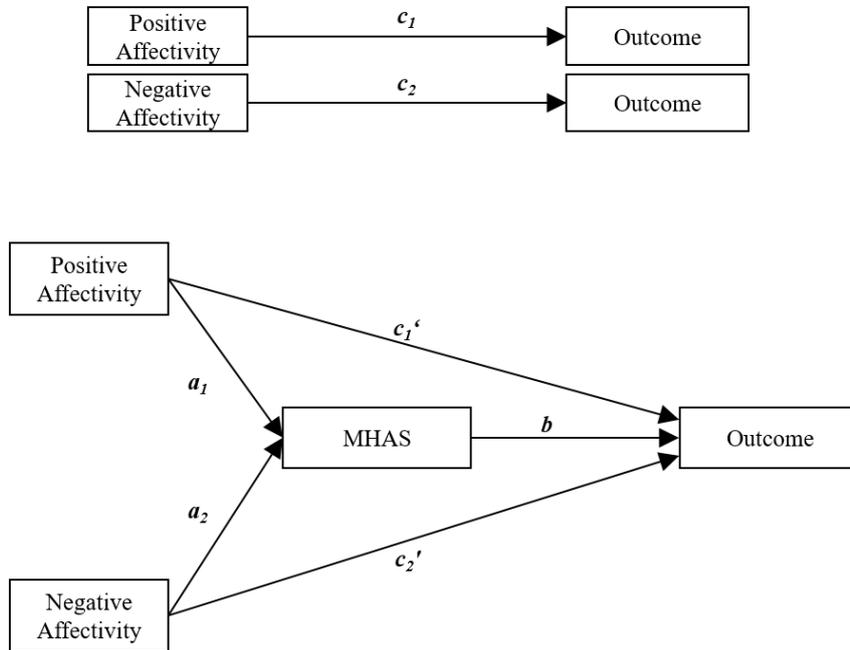


Figure 1: Mediation pathways in the present study. Separate analyses were conducted with positive mental health or probability scores for WCEP types as outcome variables. The c coefficients represent the total relationship between predictors and outcome variable (not controlling for mental health activities). The c' coefficients represent the strength of the association between predictors and outcome variable after controlling for the mediated pathway. Paths a and b represent the indirect paths including mental health activities.

The direct effects of PA and NA on the dependent variables (without controlling for mental health activities) are represented by c . The direct effects of affectivity on the mediator are denoted a , whereas the effect of mental health activities on the dependent variable is denoted b . The strength of a mediation is found by multiplying $a \times b$. The direct relations between affectivity and the dependent variable when the mediator is included are denoted c' . For all models, we allowed covariance between PA and NA. In the models with the MHAS subscales as mediators, covariance is also allowed between the subscales.

Results

Correlations

Intercorrelations and reliability estimates are displayed in Table 1.

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Table 1.**Intercorrelations and reliability estimates for mental health activities, positive mental health, PA, NA, and probabilities for WCEP types**

	MHAS	PO	PE	ER	PMH	PA	NA	Type H	Type U	Type A	Type B
MHAS	(.77)										
PO	.81**	(.70)									
PE	.68**	.45**	(.57)								
ER	.77**	.42**	.26**	(.56)							
PMH	.55**	.52**	.37**	.40**	(.90)						
PA	.53**	.55**	.38**	.31**	.55**	(.82)					
NA	-.30**	-.31**	-.18**	-.19**	-.53**	-.29**	(.80)				
Type H	.24**	.22**	.16**	.21**	.33**	.29**	-.25**				
Type U	.17**	.16**	.14**	.07	.30**	.06	-.19**	-.11**			
Type A	-.10*	-.09*	-.11*	.02	-.19**	.01	.09*	.20**	-.58**		
Type B	-.28**	-.27**	-.23**	-.17**	-.48**	-.29**	.31**	-.40**	-.30**	.19**	
<i>M</i>	2.97	3.14	2.79	2.80	3.18	34.66	16.25	17.70	42.81	17.70	21.79
<i>SD</i>	0.41	0.51	0.57	0.57	0.50	5.21	4.73	27.38	39.09	27.94	31.00

Note. $N = 326$ (except for PMH: $N = 278$); MHAS total = mental health activity scale; PO = positive orientation subscale, PE = physical engagement subscale, ER = emotion regulation subscale; PMH = positive mental health; PA = positive affectivity, NA = negative affectivity; Type H = healthy-ambitious, Type U = unambitious, Type A = excessively-ambitious, Type B = risk of burnout; correlations: pearson (for WCEP types: kendall's tau); * $p < .05$, ** $p < .01$ (two tailed), reliability estimates (α) appear on the diagonal.

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As expected, mental health activities were strongly positively associated with PA and positive mental health. This was also true for the MHAS subscales, with positive orientation showing the highest correlation coefficients, followed by emotion regulation, and physical engagement.

In regard to work-related variables, mental health activities were positively associated with a higher probability for those WCEP types that reflect healthy work-related behavior and experiences, especially with Type H. All subscales were strongly positively related to a higher probability for Type H, particularly the subscales positive orientation and emotion regulation. A higher probability for Type U was positively associated with the subscales positive orientation and physical engagement only. A higher engagement in mental health activities were associated with lower probabilities for both risk types, but particularly for Type B since all MHAS subscales were negatively related to the probability for Type B. The probability for Type A was negatively associated with the subscales positive orientation and physical engagement only. Generally, positive orientation and physical engagement activities were associated with all WCEP types, whereas emotion regulation activities were associated with a higher probability for Type H and a lower probability for Type B only.

Mediation Analyses

Even after considering affectivity, mental health activities were significantly related to positive mental health and work-related behavior and experiences and mediated the relationship between affectivity and the respective outcomes. This was true for all models, except for the association between affectivity and the probability for Type H.

Mental health activities partially mediated the effects of PA ($a \times b = .14, z = 4.87, p < .001$) and NA ($a \times b = -.05, z = -2.75, p < .01$) on positive mental health (see Figure 2).

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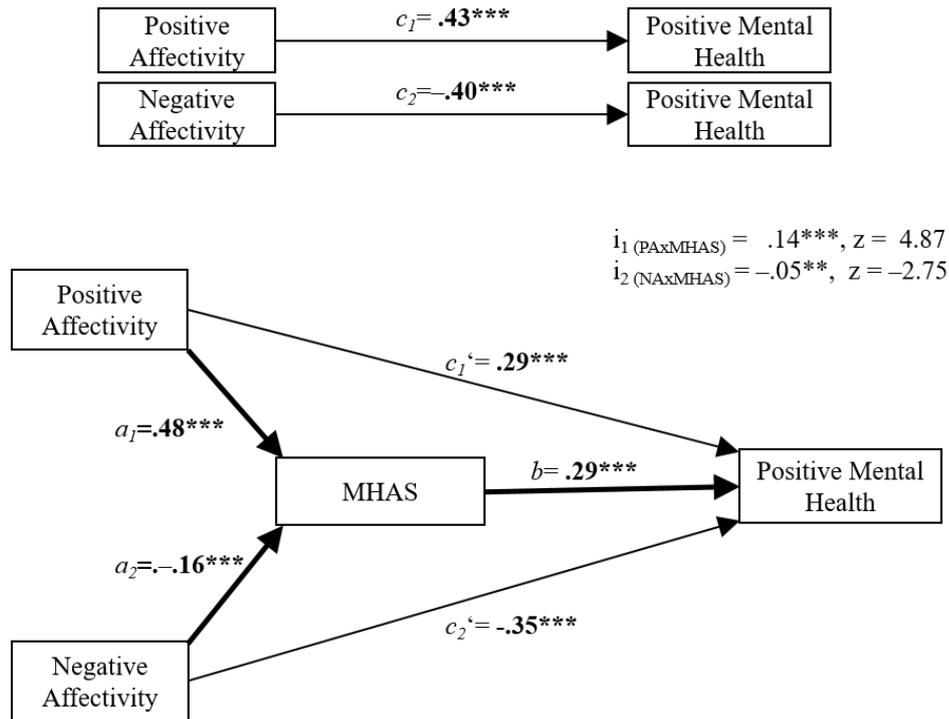


Figure 2: Standardized path coefficients for positive and negative affectivity as the predictors of positive mental health, including paths to represent mediation by the mental health activities ($R^2 = .50$). Covariance between positive and negative affectivity was allowed ($-.29, p = .001$).

A detailed look at the subscales showed that positive orientation partially mediated the effects of both PA ($a1 \times b1 = .08, z = 2.69, p < .01$) and NA ($a4 \times b1 = -.03, z = -2.14, p < .05$), whereas emotion regulation was a partial mediator for PA ($a3 \times b3 = .04, z = 2.41, p < .05$) but not for NA ($a6 \times b3 = -.02, z = -1.63, p = .10$). Physical engagement was not a mediator, neither for PA ($a2 \times b2 = .03, z = 1.39, p = .17$) nor for NA ($a5 \times b2 = -.01, z = -0.89, p = .37$, see Figure 3).

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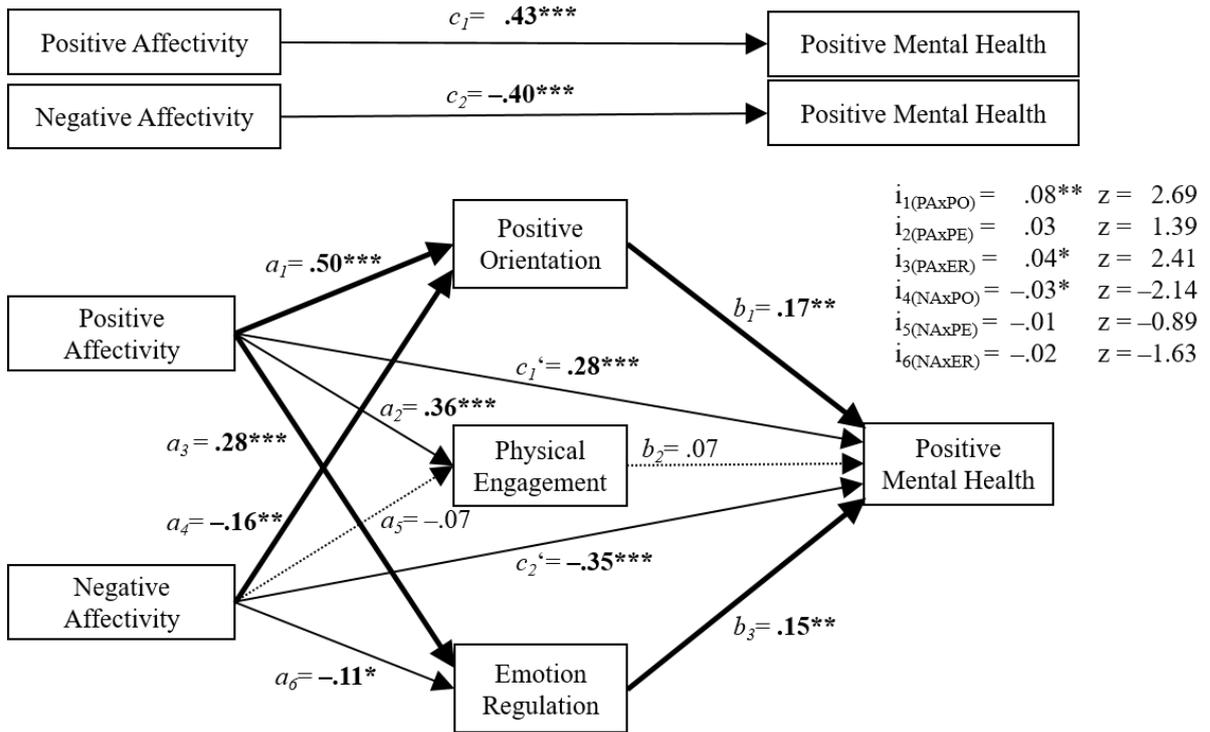


Figure 3: Standardized path coefficients for positive and negative affectivity as the predictors of positive mental health, including paths to represent mediation by the three mental health activity subscales positive orientation, physical engagement, and emotion regulation ($R^2 = .50$). Covariance between positive and negative affectivity ($-.29, p < .01$) and the mediators positive orientation and physical engagement ($.30, p < .001$), positive orientation and emotion regulation ($.30, p < .001$), and physical engagement and emotion regulation ($.15, p < .01$) was allowed.

Mental health activities were also relevant mediators in regard to work-related behavior and experiences, except for the healthy-ambitious Type H (Table 2). For all the other probabilities, mental health activities were an important mediator, especially in regard to PA. For example, PA showed no direct association with the probabilities for Type U or Type A but was associated with these work-related behavior and experiences via a higher engagement in mental health activities. Moreover, PA was negatively associated with the probability for Type B and this relationship reduced from $c = -.32$ to $c' = -.23$ ($a \times b = -.08, z = -2.77, p < .01$) after mental health activities were included in the model. Although to a lesser extent, mental health activities were also relevant in regard to NA. The association of NA and the probability for Type B reduced slightly from $c = .34$ to $c' = .31$, with a significant mediation effect for mental health activities ($a \times b = .03, z = 2.05, p < .05$). Likewise, mental health

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activities mediated the relationship between NA and the probability for Type U ($a \times b = -.03$, $z = -2.30$, $p < .05$).

Table 2.

PA and NA as predictors of work-related behavior and experiences with the path to represent mediation by mental health activities

Trait predictor	Total effect of traits <i>c</i>	Direct effect of trait <i>c'</i>	Mediation by mental health activities			z-values	Total <i>R</i> ²
			<i>a</i>	<i>b</i>	<i>a</i> × <i>b</i>		
Healthy-ambitious Type H							
PA	.34***	.32***	.48***	.05	.02	0.71	.19
NA	-.18***	-.17**	-.16**		-.01	-0.67	
Unambitious Type U							
PA	.01	-.09	.48***	.21**	.10**	3.01	.08
NA	-.22**	-.18**	-.16**		-.03*	-2.30	
Excessively-ambitious Type A							
PA	-.00	.07	.48***	-.15*	-.07*	-2.01	.03
NA	.11	.08	-.16**		.02	1.68	
Risk of burnout Type B							
PA	-.32***	-.23***	.48***	-.17**	-.08**	-2.77	.29
NA	.34***	.31***	-.16**		.03*	2.05	

Note. *N* = 326; standardized coefficients are reported; *c* = direct effect of predictor on dependent variable, *c'* = direct effect of predictor with mediator included, *a* = direct effects of predictor on mediator, *b* = direct effect of mediator on dependent variable, *a* × *b* = strength of mediation.

Considering the three MHAS subscales, a different pattern emerged. Instead of the total scale, MHAS subscales were individually related only to the probabilities for Type A and Type U. Physical engagement was the only subscale negatively associated with the probability for Type A ($b = -.13$, $p < .05$), but mediation pathways were not significant, neither for PA ($c = -.00$, $p = .94$; $c' = .08$, $p = .28$; $a = .36$, $p < .001$; $a \times b = -.05$, $z = -1.96$, $p = .05$) nor for NA ($c = .08$, $p = .15$, $a = -.07$, $p = .18$; $a \times b = .01$, $z = 1.06$, $p = .29$), although the indirect path from PA was close ($p = .05$). In regard to the probability for Type U, we found significant mediation pathways. Again, PA was associated with a higher probability for Type U only via a higher engagement in positive orientation activities ($a = .50$, $p < .001$; $b = .15$, $p < .05$; $a \times b = .07$, $z = 2.12$, $p < .05$; $c = .01$, $p = .81$; $c' = -.11$, $p = .10$) and physical engagement activities ($a = .36$, $p < .001$; $b = .15$, $p < .01$; $a \times b = .05$, $z = 2.33$, $p < .05$).

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Although PA was also positively associated with emotion regulation activities ($a = .28, p < .001$), the engagement in these activities was not associated with a higher probability for Type U ($b = -.02, p = .74$) and thus not a significant mediator ($a \times b = -.01, z = -0.33, p = .74$). All the other associations between MHAS subscales and probabilities for WCEP types were not significant.

Discussion

The present study aimed to identify the specific roles of affectivity and mental health activities in explaining positive mental health and healthy or unhealthy work-related behavior and experiences. We assumed that the practice of mental health activities is associated with more positive mental health and healthier work-related behavior and experiences. Moreover, we assumed that mental health activities functioned as a mediator between affectivity and desired outcomes. The results partly supported these assumptions.

Correlations of Mental Health Activities

Practicing more mental health activities was associated with more positive mental health and higher probabilities for Type H and Type U, both reflecting healthy work-related behavior and experiences. Negative associations of mental health activities were found with probabilities for those WCEP types that reflect unhealthy work-related behavior and experiences (Type A and Type B). This is in line with our assumptions since the common feature of Type H and Type U are high coping abilities and positive emotions whereas the opposite is true for Type A and Type B. Hence, mental health activities seem to be associated with high coping abilities and positive emotions. Moreover, mental health activities seem to be also slightly related to work motivation and engagement, which is suggested by the size of correlations with probabilities for specific WCEP types. For example, the positive correlation coefficients of mental health activities are higher with the probability for Type H (high work motivation) than with the probability for Type U (low work motivation). On the contrary,

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both the probability for Type A and the probability for Type B are negatively related to mental health activities but the coefficients are lower for Type A (high work motivation) than for Type B (low work motivation).

A closer look at the subscales offered a deeper understanding of mental health activities. Engaging in mental health activities from any subscale was related to more positive mental health, a higher accordance to Type H and a lower accordance to Type B, with the highest correlation coefficients for positive orientation. Thus, engaging in activities that aim to increase meaning, positive emotions, and self-efficacy, was strongly associated with positive mental health, high work motivation, good coping capacity, and positive emotions. Considering the COR theory (Hobfoll, 2002), the reason for this might be that this subscale addresses more resources (e.g. meaning, self-efficacy, positive emotions) than the physical engagement subscale (physical health) or the emotion regulation subscale (e.g. social support, relatedness). However, the highest correlation coefficients were found for the total scale. Hence, an individual that engages in a variety of mental health activities might accumulate a multitude of resources and might therefore be more capable of being motivated at work and cope with stressful situations (Hobfoll, 2002).

Since engaging in work is linked to the depletion of resources (Hobfoll, 2002), practicing certain leisure time activities can increase next day's vigor via psychological detachment and relaxation (Sonnentag & Zijlstra, 2006). Emotion regulation activities might be especially useful in this regard as they combine activities related to social support, relaxation, and goal attainment. Indeed, we found that engaging in these activities was linked to a higher accordance to the healthy-ambitious Type H (high work motivation, good coping, and positive emotions) and a lower accordance to the risk of burnout Type B (low work motivation, lack of coping, and lack of positive emotions). Moreover, no associations could be found with the probabilities for the unambitious Type U or the excessively-ambitious Type

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A. For all the other activities, a higher accordance to Type U was positively associated with mental health activities whereas a higher accordance to Type A showed negative associations. The finding that the usual pattern does not emerge for the emotion regulation subscale can suggest that, compared to positive orientation activities or physical engagement activities, emotion regulation activities seem to be not only related to both coping and positive emotions but also to work motivation

Mental Health Activities as Mediators

Tkach and Lyubomirsky (2006) and Warner and Vroman (2011) found that everyday activities predicted happiness even after the consideration of dispositions and that they partly mediated the relationship between dispositions and happiness. Likewise, we found that the relationships between mental health activities and positive mental health and mental health activities and certain work-related behavior and experiences persist, even after affectivity is taken into account. Moreover, mental health activities were relevant mediators in the relation between PA, NA, and the respective outcomes.

The finding that mental health activities were associated with positive mental health even when affectivity was taken into account suggest, that engaging in mental health activities addresses not only hedonic aspects of positive mental health (emotional well-being), but also eudaimonic aspects (psychological and social well-being; Keyes, 2007). A closer look at the subscales indicated that compared to physical engagement activities, especially positive orientation and emotion regulation activities seem to be related not only to hedonic aspects but also to eudaimonic aspects as they were the only subscales that explained additional variance after the consideration of affectivity. On the contrary, aspects like physical activity, a good sleep hygiene, and a healthy diet did not explain additional variance beyond affectivity and thus, seem to be more closely related to hedonic than to eudaimonic well-being. This assumption is in line with empirical findings on physical engagement activities and happiness.

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For example, Boehm and Kubzansky (2012) reviewed studies on positive psychological well-being and health behaviors and found that physical engagement activities were consistently associated with hedonic well-being, while relationships with eudaimonic well-being were inconsistent (Boehm & Kubzansky, 2012).

Mental health activities were not only associated with positive mental health but also explained in part the relationships between both PA and NA and positive mental health. Comparable to earlier studies (Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011), mental health activities functioned as mediators between dispositions and relevant outcomes. Individuals high in PA were more likely to engage in mental health activities, which explained to some extent why PA was positively related to positive mental health. On the contrary, individuals high in NA were less likely to engage in mental health activities, which in turn was negatively related to positive mental health. Thus, not engaging in mental health activities partly explained why NA was associated with reduced positive mental health. This is in line with the B&B theory (Fredrickson, 2004) and the COR theory (Hobfoll, 2002) as the tendency to experience positive emotions (either high PA or low NA) is associated with a higher engagement in activities that build other resources (e.g. self-efficacy, meaning in life, social support), which in turn is related to more positive mental health.

Furthermore, our results indicate that mental health activities might also be relevant for the work context. In this field however, mental health activities seem to be more closely related to affectivity than in regard to positive mental health. Mental health activities were associated only with probabilities for those WCEP types that were not positively related to PA. For example, especially PA had a strong direct relation to the probability for Type H and engaging in mental health activities could not explain more than affectivity. In contrast, mental health activities but not PA were associated with a higher probability for Type U and a

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lower probability for Type A¹. The finding that mental health activities are positively associated with the probability for Type U (low in work motivation) and negatively with the probability for Type A (high in work motivation) even after considering affectivity indicates, that instead of PA, mental health activities address primarily good coping capacities and positive emotions (high for Type U, low for Type A) and to a lesser extent work motivation.

In regard to Type B, mental health activities had an additional exploratory value and mediated the associations between affectivity and the probability for Type B. Hence, not engaging in mental health activities seems to address different aspects in Type B than a lack of PA or the presence of NA. Moreover, not engaging in mental health activities partly explained why PA was negatively related to the probability for Type B and also why NA was positively associated to the probability for Type B, although to a lesser extent. This finding relates to the loss cycle proposed within the COR theory (Hobfoll, 2002), where a lack of a personal resource (e.g. a lack of high PA or low NA) is not only worrisome per se but also leads to further resource loss (e.g. lack of self-efficacy, meaning) because of diminished resource gain (e.g. not engaging in mental health activities).

With the three MHAS subscales as mediators, we found significant associations only in regard to Type A and Type U. After the consideration of affectivity, a higher engagement in physical engagement activities was significantly associated with a lower probability for Type A and a higher probability for Type U. A higher engagement in positive orientation activities was associated only with a higher probability for Type U. None of the MHAS subscales were significantly associated with the probability for Type B after affectivity was

¹ PA is associated not only with good coping abilities, higher work and life satisfaction, and more social support (Lyubomirsky et al., 2005), but also with high motivation (Ng & Sorensen, 2009; Seo et al., 2004). However, both Type U and Type A are high only in one or two of these variables but low in the others. Type U reflects high coping capacity and life satisfaction but a lack of work motivation and work satisfaction, whereas the opposite is true for Type A. This might explain why PA is not directly associated with either the probability for Type U or for Type A. However, our results highlight that PA is indirectly associated with these types via a higher engagement in mental health activities.

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considered. Moreover, the coefficients were generally higher for the MHAS total scale than for MHAS subscales. This suggests that especially the combination of all mental health activities is relevant, which would be in line with Sin and Lyubomirsky (2009). In their meta-analysis they found that engaging in a multitude of activities was more effective than focusing on only one activity. This might also be true in regard to mental health activities. Engaging in various mental health activities seems to be more relevant for positive outcomes in work and life than engaging in only a few specific activities, especially after considering affectivity.

Overall, the engagement in mental health activities can partly explain the relationship between affectivity and positive mental health and, to a lesser extent, between affectivity and work-related behavior and experiences. These findings are comparable to research on happiness increasing activities (Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011) and support the notion that the relevance of dispositions can in part be attributable to their effect on everyday activities (Diener et al., 1999; Lyubomirsky et al., 2005, McCrae & Costa, 1991). We included affectivity and mental health activities in the model. Therefore the results also support the B&B theory (Fredrickson, 2004) and the COR theory (Hobfoll, 2002), as they highlight the relevance of positive emotions for positive outcomes, both directly and indirectly via a higher engagement in activities with the potential to facilitate positive emotions and build individual resources. The gain cycle assumed of both the B&B theory and the COR theory was reflected particularly in respect to positive mental health, while in relation to work-related behavior and experiences especially the loss cycle assumed within the COR theory became apparent. Hence, mental health activities might be useful to increase positive mental health and protect from work-related stress but future research is needed in order to establish causal effects.

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Limitations and Future Directions

Even though the present study revealed promising results, important limitations have to be mentioned. First of all, the study was cross sectional and based on self-report measures only. Mental health activities were related to positive mental health and work-related behavior and experiences, even after controlling for affectivity. However, conclusions about causality need to be addressed in longitudinal studies. Moreover, future studies could integrate other methods of assessment such as experience sampling methods. Also, more studies are needed to confirm the present results regarding the mediation effects of mental health activities. It may be possible that the power of the mediational tests was affected since the relationship between affectivity and mental health activities was stronger than relationship between mental health activities and the outcome variables. If the predictor shows a stronger association with the mediator than the mediator with the outcome, it is more likely that the *b* path is not significant (Frazier, Tix, & Barron, 2004). Moreover, MHAS subscales obtained comparatively low reliability values, which overestimate the effect of the predictor and underestimate the effect of the mediator on the outcome variable (Frazier et al., 2004). Thus, future studies for replications are needed. Furthermore, the sample was based on teachers only. The teaching profession constitutes a certain line of work with specific challenges. We found that engaging in mental health activities was associated with more positive mental health and less unhealthy work-related behavior and experiences. This suggests that mental health activities might balance these profession specific challenges. However, further research is needed to confirm this assumption and replicate the present findings on different samples and professions. It would also be interesting to explore the extent to which the present results in regard to positive mental health are applicable to other age groups, such as children, adolescents, or the elderly (Diener et al., 2006; Kessler & Staudinger, 2009; Ryff & Keyes, 1995).

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We found that in contrast to positive orientation activities and physical engagement activities, emotion regulation activities might also be related to work motivation. It is possible that these activities are beneficial especially for those individuals that are highly engaged and emotionally involved with work. For those individuals, practicing emotion regulation activities might increase psychological detachment from work and thus, increase vigor and engagement on the next work day (Brummelhuis & Bakker, 2012). However, future studies are needed to investigate this assumption.

Furthermore, it seems possible that certain types of individuals benefit from specific activities more than others. Lyubomirsky and Layous (2013) highlighted this person-activity fit in their positive-activity model. According to this model, the perception of an activity such as exercising determines, if one can derive positive emotions from it. Thus, future studies could integrate the perception of a specific activity as well. Likewise, associations with personal resources, basic needs, as well as hedonic and eudaimonic aspects of well-being (Ryan & Deci, 2000; Ryff & Keyes, 1995) could be explored more deeply. Both Xanthopoulou and colleagues (2009) and Ouweneel and colleagues (2011) found a reciprocal relationship between positive emotions, personal resources, and study engagement. Yet unclear is if this reciprocal relationship can be found in regard to mental health activities as facilitators of positive emotions and personal resources as well. Can mental health activities increase positive emotions and personal resources and thus, initiating an upward spiral proposed by the B&B theory and the COR theory? In order to answer these questions, it is necessary to investigate the engagement in mental health activities on a daily basis, and assess state and trait positive and negative affect as well as individual resources longitudinally (comparable to Cohn, Fredrickson, Brown, Mikels, & Conway, 2009). This would allow a more detailed understanding of their relationship and imply causality. Also, the time

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perspective might be interesting. How long does one need to engage in new mental health activities to achieve such possible effects? Clearly, more research is needed in this regard.

Conclusions and Practical Implications

The present study successfully integrated research of pathogenesis with salutogenesis. In a sample of teachers, we found that the practice of mental health activities was associated with more positive mental health and less unhealthy work related-behavior and experiences, even after affectivity was considered. Furthermore, mental health activities partly explained the relationship between affectivity and the respective outcomes. These results suggest the potential of mental health activities as lifestyle suggestions for mental health promotion, within and beyond the work context (Barry & Friedli, 2008). Practicing mental health activities might be a useful way to facilitate positive emotions and strengthen individual resources and the present results support the potential of mental health activities, but future studies are needed in order to establish causal effects.

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References

- Arndt, S., Turvey, C., & Andreasen, N. C. (1999). Correlating and predicting psychiatric symptom ratings: Spearman's r versus Kendall's tau correlation. *Journal of Psychiatric Research, 33*, 97–104.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122–147.
- Barry, M. M., & Friedli, L. (2008). *The influence of social, demographic and physical factors on positive mental health in children, adults and older people* (Foresight Mental Capital and Wellbeing Project No. State-of-Science Review: SR-B3). London.
- Bauer, J., Stamm, A., Virnich, K., Wissing, K., Müller, U., Wirsching, M., & Schaarschmidt, U. (2006). Correlation between burnout syndrome and psychological and psychosomatic symptoms among teachers. *International Archives of Occupational and Environmental Health, 79*(3), 199–204. <https://doi.org/10.1007/s00420-005-0050-y>
- Boehm, J. K., & Kubzansky, L. D. (2012). The heart's content: The association between positive psychological well-being and cardiovascular health. *Psychological Bulletin, 138*, 655–691. <https://doi.org/10.1037/a0027448>
- Brummelhuis, L. L. ten, & Bakker, A. B. (2012). Staying engaged during the week: The effect of off-job activities on next day work engagement. *Journal of Occupational Health Psychology, 17*, 445–455. <https://doi.org/10.1037/a0029213>
- Caunt, B. S., Franklin, J., Brodaty, N. E., & Brodaty, H. (2013). Exploring the causes of subjective well-being: A content analysis of peoples' recipes for long-term happiness. *Journal of Happiness Studies, 14*, 475–499. <https://doi.org/10.1007/s10902-012-9339-1>

STUDY III

- Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion, 9*, 361–368. <https://doi.org/10.1037/a0015952>.
- Connolly, J. J. & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences, 29*, 265–281.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542–575.
- Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *The American Psychologist, 61*, 305–314. <https://doi.org/10.1037/0003-066X.61.4.305>
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective Well-Being: Three Decades of Progress. *Psychological Bulletin, 125*, 276–302.
- Enders, C. K. (2001). The performance of the full information maximum likelihood estimator in multiple regression models with missing data. *Educational and Psychological Measurement, 61*, 713–740.
- Feldman-Barrett, L., & Russel, J. A. (1998). Independence and bipolarity in the structure of current affect. *Journal of Personality and Social Psychology, 74*, 967–984.
- Feldman-Barrett, L., & Russel, J. A. (1999). The structure of current affect: Controversies and emerging consensus. *Current Direction in Psychological Science, 8*, 10–14.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218–226. <https://doi.org/10.1037/0003-066X.56.3.218>
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 359*, 1367–1378. <https://doi.org/10.1098/rstb.2004.1512>

STUDY III

- Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine & A. Plant (Eds.), *Advances in Experimental Social Psychology* (Vol. 47, pp. 1–53). Amsterdam: Academic Press. <https://doi.org/10.1016/B978-0-12-407236-7.00001-2>
- Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science, 13*, 172–175.
- Folkman, S. (2008). The case for positive emotions in the stress process. *Anxiety, Stress, and Coping, 21*, 3–14. <https://doi.org/10.1080/10615800701740457>
- Garland, E. L., Fredrickson, B. L., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review, 30*, 849–864. <https://doi.org/10.1016/j.cpr.2010.03.002>.
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549–576. <https://doi.org/10.1146/annurev.psych.58.110405.085530>
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *The Journal of Applied Psychology, 87*, 268–279. <https://doi.org/10.1037//0021-9010.87.2.268>
- Hobfoll, S. E. (1989). Conservation of Resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513–524.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*, 307–324. <https://doi.org/10.1037//1089-2680.6.4.307>

STUDY III

- Hofmann, H. & Kohlmann, C.-W. (2018). Dimensionality of mental health activities in a German sample. *Health Promotion International*.
<https://doi.org/10.1093/heapro/day078>
- Judge, T. A., & Larsen, R. J. (2001). Dispositional affect and job satisfaction: A review and theoretical extension. *Organizational Behavior and Human Decision Processes*, 86, 67–98. <https://doi.org/10.1006/obhd.2001.2973>
- Judge, T. A., Weiss, H. M., Kammeyer-Mueller, J. D., & Hulin, C. L. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and of change. *The Journal of Applied Psychology*, 102, 356–374. <https://doi.org/10.1037/apl0000181>
- Kazdin, A. E., & Rabbitt, S. M. (2013). Novel models for delivering mental health services and reducing the burdens of mental illness. *Clinical Psychological Science*, 1, 170–191. <https://doi.org/10.1177/2167702612463566>
- Kessler, E.-M. & Staudinger, U. M. (2009). Affective experience in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology and Aging*, 24, 349–362. <https://doi.org/10.1037/a0015352>
- Keyes, C. L. M. (2006). Subjective well-being in mental health and human development research worldwide: An introduction. *Social Indicators Research*, 77, 1–10. <https://doi.org/10.1007/s11205-005-5550-3>
- Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *The American Psychologist*, 62, 95–108. <https://doi.org/10.1037/0003-066X.62.2.95>
- King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology*, 90, 179–196. <https://doi.org/10.1037/0022-3514.90.1.179>

STUDY III

- Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Teachers' occupational well-being and quality of instruction: The important role of self-regulatory patterns. *Journal of Educational Psychology, 100*, 702–715.
<https://doi.org/10.1037/0022-0663.100.3.702>
- Klusmann, U., Richter, D., & Lüdtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale assessment study. *Journal of Educational Psychology, 108*, 1193–1203.
<https://doi.org/10.1037/edu0000125>
- Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der "Positive und Negative Affect Schedule" (PANAS). *Diagnostica, 42*, 139–156.
- Layous, K., Chancellor, J., & Lyubomirsky, S. (2014). Positive activities as protective factors against mental health conditions. *Journal of Abnormal Psychology, 123*, 3–12.
<https://doi.org/10.1037/a0034709>
- Lukat, J., Margraf, J., Lutz, R., van der Veld, William M, & Becker, E. S. (2016). Psychometric properties of the positive mental health scale (PMH-scale). *BMC Psychology, 4*, 8. <https://doi.org/10.1186/s40359-016-0111-x>
- Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science, 7*, 186–189.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*, 803–855.
<https://doi.org/10.1037/0033-2909.131.6.803>

STUDY III

- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science*, *22*, 57–62.
<https://doi.org/10.1177/0963721412469809>
- McCrae, R. R., & Costa, P. T. (1991). Adding liebe und arbeit: The full five-factor models and well-being. *Personality and Social Psychology Bulletin*, *17*, 227–232.
- Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education*, *28*, 458.
- Morgan, A. J., & Jorm, A. F. (2009). Self-help strategies that are helpful for sub-threshold depression: A Delphi consensus study. *Journal of Affective Disorders*, *115*, 196–200.
<https://doi.org/10.1016/j.jad.2008.08.004>
- Morgan, A. J., Jorm, A. F., & Mackinnon, A. J. (2012). Email-based promotion of self-help for subthreshold depression: Mood Memos randomised controlled trial. *The British Journal of Psychiatry: the Journal of Mental Science*, *200*, 412–418.
<https://doi.org/10.1192/bjp.bp.111.101394>
- Morgan, A. J., Mackinnon, A. J., & Jorm, A. F. (2013). Behavior change through automated e-mails: Mediation analysis of self-help strategy use for depressive symptoms. *Behaviour Research and Therapy*, *51*, 57–62. <https://doi.org/10.1016/j.brat.2012.11.002>
- Ng, T. W. & Sorensen, K. L. (2009). Dispositional affectivity and work-related outcomes: A meta-analysis. *Journal of Applied Social Psychology*, *39*, 1255–1287.
- Ong, A. D., Kim, S., Young, S., & Steptoe, A. (2017). Positive affect and sleep: A systematic review. *Sleep Medicine Reviews*, *35*, 21–32. <https://doi.org/10.1016/j.smrv.2016.07.006>
- Ouweneel, E., Le Blanc, P. M., & Schaufeli, W. B. (2011). Flourishing students: A longitudinal study on positive emotions, personal resources, and study engagement. *The*

STUDY III

Journal of Positive Psychology, 6, 142–153.

<https://doi.org/10.1080/17439760.2011.558847>

Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health? *Psychological Bulletin*, 131, 925–971. <https://doi.org/10.1037/0033-2909.131.6.925>

Pressman, S. D., Jenkins, B. N., Kraft-Feil, T. L., Rasmussen, H., & Scheier, M. F. (2017). The whole is not the sum of its parts: Specific types of positive affect influence sleep differentially. *Emotion*, 17, 778–793. <https://doi.org/10.1037/emo0000256>

Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48, 1-36. <https://doi.org/10.18637/jss.v048.i02>

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revised. *Journal of Personality and Social Psychology*, 4, 719–727.

Schaarschmidt, U., & Fischer, A. W. (2008). *AVEM - Arbeitsbezogenes Verhaltens- und Erlebensmuster: Manual* (3rd ed.). Frankfurt am Main: Pearson.

Schulz, M., Damkröger, A., Voltmer, E., Löwe, B., Driessen, M., Ward, M., & Wingenfeld, K. (2011). Work-related behaviour and experience pattern in nurses: Impact on physical and mental health. *Journal of Psychiatric and Mental Health Nursing*, 18, 411–417. <https://doi.org/10.1111/j.1365-2850.2011.01691.x>

Seo, M.-G., Feldman Barrett, L., & Bartunek, J. M. (2004). The role of affective experience in work motivation. *Academy of Management Review*, 29, 423–439.

Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology*, 65, 467–487. <https://doi.org/10.1002/jclp.20593>

STUDY III

- Sonnentag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology, 12*, 204–221. <https://doi.org/10.1037/1076-8998.12.3.204>
- Sonnentag, S., & Zijlstra, F. R. H. (2006). Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue. *Journal of Applied Psychology, 91*, 330–350.
- Tellegen, A., Watson, D., & Clark, L. A. (1999). On the dimensional and hierarchical structure of affect. *Psychological Science, 10*, 297–303.
- Tellegen, A., Lykken, D. T., Bouchard, T. J., Wilcox, K. J., Segal, N. L., & Rich, S. (1988). Personality similarity in twins reared apart and together. *Journal of Personality and Social Psychology, 54*, 1031–1039.
- Tkach, C., & Lyubomirsky, S. (2006). How do people pursue happiness? Relating personality, happiness-increasing strategies, and well-being. *Journal of Happiness Studies, 7*, 183–225. <https://doi.org/10.1007/s10902-005-4754-1>
- Walsh, R. (2011). Lifestyle and mental health. *American Psychologist, 66*, 579–592. <https://doi.org/10.1037/a0021769>
- Warner, R. M., & Vroman, K. G. (2011). Happiness inducing behaviors in everyday life: An empirical assessment of "the how of happiness". *Journal of Happiness Studies, 12*, 1063–1082. <https://doi.org/10.1007/s10902-010-9245-3>
- Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of Positive Psychology*. Oxford University Press.

STUDY III

- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, *96*, 465–490.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychological evidence. *Journal of Personality and Social Psychology*, *76*, 820–838.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, *74*, 235–244. <https://doi.org/10.1016/j.jvb.2008.11.003>

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The aim of this research was to shed further light on the relationship between affectivity, mental health activities, and positive outcomes in work and life. For this purpose, three distinct studies were conducted.

The Role of Positive and Negative Affectivity in Healthy and Unhealthy Work-related Behavior and Experiences (Study I)

First of all, the four types of work-related coping behavior and experiences (Schaarschmidt & Fischer, 2008) were located within the theoretically embedded research of emotionality (Watson, Clark, & Tellegen, 1988; Watson & Slack, 1993). It was assumed that PA and NA are differently related to work-related behavior and experiences and that the four WCEP types describe combinations of high or low positive and negative affectivity. The results of Study I generally confirmed these assumptions and revealed that PA and NA were significant predictors for work-related behavior and experiences. The fact that PA and NA showed distinct associations with work-related dimensions supported their independence (Watson & Tellegen, 1985). Generally, high PA increased the probability of being classified as healthy-ambitious Type H. Thus, high PA was especially associated with the combination of high values in work motivation, high coping capacities, and high satisfaction. The finding that PA was not a distinguishing factor between Type A and Type U indicates that PA is not only related to high work motivation and work satisfaction (found in Type A) but also to good coping abilities and high life satisfaction (found in Type U), which is in line with earlier findings (Ng & Sorensen, 2009; Norlander et al., 2002). As assumed, high NA was associated with a lower probability to be assigned to the healthy-ambitious Type H or the unambitious Type U compared to the excessively-ambitious Type A and the risk of burnout Type B. The finding that NA was not a distinguishing factor between Type U and Type H suggests, that primarily PA and to a lesser extent NA seems to be associated with motivational processes at

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work, since contrary to Type U, Type H possesses high motivation at work. The finding that PA increased the probability to be assigned to Type A instead of Type B further supports the relevance of PA for motivational processes since these types also differ in the amount of work-related motivation. Thus, especially PA seems to be associated with work-related motivational processes. This is in line with meta-analytical findings from Ng and Sorensen (2009) who found that PA was more strongly associated with job significance and in-role performance than NA. They also found that NA was more associated with job stress than PA. Study I confirmed this finding as NA increased the risk to be assigned to the types that experience high levels of stress (Type A and Type B). On the contrary, NA was no distinguishing factor between the types with a high resistance to stress (Type H and Type U). Hence, NA seems to be especially relevant for the experience of stress, which confirms earlier findings (Ng & Sorensen, 2009; Watson & Clark, 1984, 1994).

Ng and Sorensen formulated one question yet to be answered: “Will those who are simultaneously high in PA and low in NA be the best performers when compared to other combinations?” (Ng & Sorensen, 2009, p. 1281). Although the present study considered broad work-related behavior and experiences instead of a specific performance measure, the results nevertheless shed some light on this question. Comparable to results from a meta-analysis (Thoresen et al., 2003), it was found that both affectivity dimensions were relevant to certain aspects of work-related behavior and experiences. Thus, the combination of PA and NA was indeed crucial in regard to work-related outcomes. For the assignment to the healthy-ambitious Type H, it was critical to be not only low in NA but also high in PA. Overall, PA seems to be associated with motivational processes at work as well as good coping abilities and positive emotions, whereas NA seems to be primarily relevant for the experience of stress. Thus, depending on individual dispositions, different strategies of actions can be suggested (Kaplan et al., 2009). Individuals low in PA (Type U, Type A, and especially Type

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B) could aim to increase positive affect while individuals high in NA (Type A and Type B) ought to make efforts to reduce negative affect.

Study I also highlighted the central role of environmental factors like the type of profession. Teachers as compared to physiotherapists were more likely to be assigned to the WCEP types that indicate a lack of coping abilities (Type A), of work motivation (Type U), or of both (Type B) than to the healthy-ambitious Type H. They were also more likely assigned to Type B than to Type A. This confirms earlier findings and supports the notion that this profession obtains strong psychological stressors (Johnson et al., 2005; Schaarschmidt & Fischer, 2008), which eventually can lead to serious mental health impairments (Bauer et al., 2006; Bauer et al., 2007). Hence, profession-specific factors (e.g. incompletely regulated working hours or the division of the workplace between school and home; Rothland, 2013b) are also highly relevant for healthy or unhealthy work-related behavior and experiences. These results emphasize the significance of mental health promotion especially within the teaching profession. We found that this pattern emerged not only for already practicing teachers but also for those at the beginning of their career. Teacher students (which also experience a lack of regulated working hours and a division of the workplace between university and home) already obtained a higher risk than physiotherapists to be assigned to the unambitious Type U or the risk of burnout Type B instead of the healthy-ambitious Type H and the excessively-ambitious Type A. These results highlight the relevance to detect risk factors such as low values of PA or high degrees of NA at an early stage and to implement health promoting interventions during the course of studies (Çelebi, Krahé, & Spörer, 2014; Reichl et al., 2014; Römer, Appel, Drews, & Rauin, 2012).

Dimensionality of Mental Health Activities in a German Sample (Study II)

The relevance of everyday activities has been emphasized by various researchers either with the aim to reduce mental burdens (Kazdin & Rabbitt, 2013) or to boost positive

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emotions and well-being (Diener et al., 2017). Although lifestyle is increasingly recognized as a best-buy-intervention to enhance mental health (Kazdin & Rabbitt, 2013; Walsh, 2011), there is a lack in the assessment of a person's behavior related to mental health. Hence, the aim of Study II was to identify the underlying structure of mental health activities and their association with personality, affectivity, and positive mental health. Within the broad concept of Mental Health Literacy (MHL), Morgen and Jorm presented 14 self-help strategies aimed to reduce mental burdens and treat mild depression (Morgan & Jorm, 2009). Within Study II, these self-help strategies were assessed and tested as suitable items of a mental health activity scale. Due to high similarity with other items, items three and 13 were excluded from further analyses, resulting in 12 remaining activities. Subsequent exploratory factor analyses suggested a one- or three-factor solution. Within the following confirmatory factor analyses, fit indices supported primarily the three-factor solution. The three factors were labeled positive orientation, physical engagement, and emotion regulation. The subscale positive orientation combines activities that can boost positive feelings and positive attitudes towards life. The physical engagement subscale subsumes activities with the potential to enhance physical health, whereas the emotion regulation subscale includes activities that can reduce tension or arousal. Although factor loadings supported the three-factor solution, future validation of the three subscales is necessary, especially since one modification was performed. To improve the model fit, the correlation of residuals between item 10 ("I reward myself for reaching a small goal") and item 11 ("I practice of relaxation methods") was allowed. Reliability estimates were acceptable for the total scale but low for the subscales. However, these values are comparable to reliability estimates of happiness increasing strategies (Al Nima & Garcia, 2015; Warner & Vroman, 2011). High positive correlations with PA, extraversion, and positive mental health and negative correlations with NA and neuroticism support the construct validity of mental health activities.

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Previous research indicated gender differences in the experience of stress and the practice of specific health behaviors and coping strategies (Brody, Hall, & Stokes, 2016; Matud, 2004; Rosenfield & Mouzon, 2012; Tamres, Janicki, & Helgeson, 2002). In line with these findings, women had higher scores than men in the mental health activity total scale. A closer look at the subscales showed that this difference was due to a higher engagement in the subscale emotion regulation. Thus, women scored higher in the subscale that combined social interaction, the sharing of feelings, the reward for small goals, and the practice of relaxation methods. Although this is comparable to other findings (Tamres et al., 2002; Warner & Vroman, 2011), these results need to be interpreted with caution, as the sample contained a high proportion of women and was therefore unequally distributed.

Another aim of Study II was to relate mental health activities to the model of emotionality. Mental health activities seem to be more related to PA than to NA, because positive associations with PA were higher than negative correlations with NA. This is comparable to earlier findings on affectivity and happiness increasing strategies (Al Nima & Garcia, 2015) or affectivity and health behaviors (Kushlev, Drummond, & Diener, 2019). Furthermore, PA was associated with the total scale and all subscales, whereas NA was associated with the total scale, and the subscales positive orientation and emotion regulation only. No associations were found between NA physical engagement activities like exercise, sufficient sleep, and a healthy diet. Hence, physical engagement activities seems to be related primarily to PA. This is similar to earlier studies which associated these health behaviors with affect. For example, positive affect but not negative affect was associated with healthy eating and exercising (Kushlev et al., 2019; Sirois & Hirsch, 2015). Reviewing studies on sleep and emotions, Baglioni and colleagues concluded that a high sleep quality relates to positive emotions, whereas findings in regard to negative emotions were inconsistent (Baglioni, Spiegelhalter, Lombardo, & Riemann, 2010). Likewise, a meta-analysis on the effects of

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leisure time physical activity found positive associations between physical activity and positive affect, but no association between physical activity and negative affect (Wiese, Kuykendall, & Tay, 2018). As suggested by various researchers, one reason for these insignificant associations between physical activity and negative affect might be that physical activity primarily mitigates rising negative emotional responses in times of stress instead of decreasing negative affect directly (Epel, Prather, Puterman, & Tomiyama, 2016; Wiese et al., 2018). Hence, the associations between affectivity, negative affect, and physical engagement activities could be further investigated, including stress as a context moderator.

Overall, Study II indicates that especially the tendency to experience high active positive emotions (PA) is associated with an increased engagement in mental health activities. These results confirm the relevance of PA in regard to health behavior and extend the known relationship to mental health activities (Epel et al., 2016; Kushlev et al., 2019; Pressman & Cohen, 2005). However, the causal relationship between affectivity and mental health activities needs to be investigated in future studies. Especially because longitudinal studies highlighted not only the influence of PA and positive affect on health behaviors (Lyubomirsky, King et al., 2005) but suggest also the reverse direction. Everyday activities seem to be not only affected by dispositions but can also influence affective experiences (Epel et al., 2016; Layous et al., 2014; Sin & Lyubomirsky, 2009). For example, practicing relaxation methods like a loving-kindness meditation increased positive emotions (either high or low arousal) even up to 15 months after the first exercise (Cohn & Fredrickson, 2010). By improving positive emotions and individual resources, these activities can initiate an upward spiral that is able to foster resilience (Fredrickson et al., 2003; Tugade & Fredrickson, 2004) and even shape affective dispositions (Garland et al., 2010). Mental health activities might affect emotional experiences and improve individual resources, and thus, could initiate this upward spiral. However, more research is needed to reveal the specific associations between

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mental health activities, individual resources, as well as state and trait PA and NA. Preliminary results indicate that mental health activities were perceived to be useful for enhancing positive affect and reducing negative affect (Kohlmann & Hofmann, 2018). However, these perceptions need to be confirmed in longitudinal studies. This seems to be a promising avenue, especially because mental health activities might also be important in regard to the hedonic adaptation. The hedonic treadmill model assumes that significant life events affect people's emotions only temporarily (Brickman, Coates, & Janoff-Bulman, 1987). After a certain amount of time, individuals adapt to these changes and return to their genetically determined set-point. However, this model primarily focused on major life events instead of everyday activities. Since daily hassles are a highly relevant for psychological and somatic health and even better predictors than life events are (Charles, Piazza, Mogle, Sliwinski, & Almeida, 2013; Lazarus & Folkman, 1987), it seems to be a good strategy to alleviate these daily hassles by daily activities to increase well-being. Indeed, subsequent longitudinal studies have shown that the genetically determined set-point can be elevated with intentional activities and that these elevations can have lasting effects (Diener et al., 2006; Garland et al., 2010; Sheldon & Lyubomirsky, 2012). By increasing positive emotions, building individual resources, and satisfying psychological needs, daily activities can lead to various benefits (Fredrickson, 2004; Hobfoll, 2002; Lyubomirsky, King et al., 2005; Lyubomirsky & Layous, 2013). If applied appropriately, everyday activities seem to be a promising way to reduce mental burdens and to combat the hedonic treadmill (Diener et al., 2017; Garland et al., 2010). In order to develop their potential, it seems that the specific dosage, variety, and individual fit of strategies is relevant (Lyubomirsky & Layous, 2013; Sheldon & Lyubomirsky, 2012). The questions to what extent and under which conditions mental health activities can achieve such results are interesting avenues for future research. The present results suggest that more research on mental health activities is worthwhile, and

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earlier research indicates that mental health activities might be a promising tool for mental health promotion (Kuykendall, Tay, & Ng, 2015; Sheldon & Lyubomirsky, 2012).

The Relevance of Mental Health Activities for Positive Outcomes in Work and Life Taking Affectivity into Account (Study III)

Tkach and Lyubomirsky (2006) as well as Warner and Vroman (2011) found that happiness increasing activities explained additional variance in happiness beyond the variance predictable by genetics. In a similar way, Study III investigated the relationship between mental health activities and positive mental health under consideration of important traits, namely PA and NA. Study III revealed that even after the consideration of affectivity, mental health activities explained additional variance in positive mental health. Hence, mental health activities seem not only to address hedonic well-being (positive feelings) but also eudaimonic aspects (positive psychological and social functioning) of positive mental health (Keyes, 2007). In order to explore this assumption further, future research could identify the association of mental health activities with eudaimonic aspects of positive mental health, like autonomy, environmental mastery, purpose in life, personal growth, positive relations, and self-acceptance in more detail (Keyes, 2007). Moreover, Study III has shown that mental health activities partially mediated the effects of both PA and NA on positive mental health. These findings are in line with both the B&B theory (Fredrickson, 2004, 2013) and the COR theory (Hobfoll, 1989, 2002). The B&B theory states that the experience of positive emotions affects the experience of stress and well-being both directly and indirectly via a higher engagement in activities that build individual resources. The COR theory assumes that individual resources do not exist in isolation but rather are accumulated, and that resources can prevent from the experience of stress, improve coping in stressful situations and ultimately lead to more health and well-being (Hobfoll, 2002). Accordingly, it was found that the individual tendency to experience positive emotions (as a personal resource) was

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associated with more positive mental health both directly and indirectly via an increased engagement in mental health activities. This result was found for the total scale and for two subscales. Positive orientation activities significantly mediated the association between both PA and NA and positive mental health, whereas emotion regulation activities explained the relationship between PA and positive mental health only. Physical engagement activities such as sufficient sleep, exercise, and a healthy diet did not mediate the association between PA or NA and positive mental health. Although these activities initially correlated positively with positive mental health, they did not explain additional variance once affectivity was included in the model. Hence, it seems that they are more closely related to emotional well-being than to psychological or social well-being. Lyubomirsky and Layous (2013) pointed out, that in order to evolve beneficial effects on well-being, it might be essential that intentional activities increase positive emotions, build individual resources, or satisfy psychological needs. It seems that positive orientation activities and emotion regulation activities address not only positive emotions but also individual resources and psychological needs and thus, are also associated with eudaimonic aspects of positive mental health (such as autonomy, purpose in life, or competence; Keyes, 2007; Ryan & Deci, 2000). The subscale positive orientation for example includes aspects that can elevate feelings of competence (e.g. No. 7 “I am engaged in activities that give me a feeling of achievement”) or purpose in life (e.g. No. 5 “I remain involved in purposeful activities for at least a small part of the day”). The subscale emotion regulation addresses another aspect of psychological well-being: positive relations (e.g. No. 8 “I have a trusted friend or relative, with whom I get out and do some activities”). Hence, it seems reasonable that these subscales are significantly associated with positive mental health, even when affectivity is included in the model. On the contrary, physical engagement activities like maintaining a healthy diet, exercising, or achieving a high sleep quality seem to be more closely related to hedonic aspects of psychological well-being. This assumption would be in line with a meta-analysis on psychological well-being and health behavior, which

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found that physical engagement activities were especially associated with hedonic well-being, while associations with eudaimonic well-being were inconsistent (Boehm & Kubzansky, 2012). Although the findings in regard to MHAS subscales are in line with theoretical assumptions and empirical findings, they need to be interpreted with caution due to the comparatively low reliability estimates of MHAS subscales, and future studies are needed to replicate the present findings. Nevertheless, the present results indicate the potential of mental health activities for mental health promotion and confirm their relevance for positive mental health, even after the consideration of affectivity. Future research could identify if the present findings are applicable to other age groups such as children, youth, or the elderly. It might be that specific activities are more useful for certain age levels than others (Diener et al., 2006; Kessler & Staudinger, 2009; Ryff & Keyes, 1995).

Everyday activities are not only important for overall subjective well-being (Kuykendall et al., 2015), but seem to be also quite relevant for the work context. For example, practicing specific leisure activities such as exercise or social activities, lowered the need for recovery and enhanced psychological detachment from work, relaxation, and feelings of vigor (Brummelhuis & Bakker, 2012; Sonnentag, Arbus, Mahn, & Fritz, 2014; Sonnentag & Zijlstra, 2006). These findings suggest, that mental health activities might balance stressful work-related experiences and affect work-related behavior. Moreover, mental health activities can be a way to facilitate positive emotions and develop and improve individual resources. Considering the B&B theory (Fredrickson, 2004) and the COR theory (Hobfoll, 2002), these resources might be relevant not only for overall well-being but also for the work context. Hence, Study III addressed the relevance of mental health activities for healthy and unhealthy work-related behavior and experiences. Generally, the practice of mental health activities was positively associated with higher probabilities for those WCEP types that reflect good coping capacity and a positive emotions (i.e. healthy-ambitious Type H and unambitious Type U) and

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negatively with probabilities for those WCEP types that lack coping capacity (i.e. excessively-ambitious Type A and risk of burnout Type B). This pattern emerged for the total scale as well as the subscales positive orientation and physical engagement. The subscale emotion regulation however was not associated with the probabilities for Type U or Type A. This finding indicates that especially positive orientation activities and physical engagement activities can be associated with good coping capacity and positive emotions, whereas emotion regulation activities might be also relevant for motivational processes. It is possible, that activities like rewarding for small goals or practicing relaxation methods are especially beneficial to maintain high work motivation and thus, might be particularly relevant for those individuals that are highly engaged and emotionally involved with work. Future research could follow these thoughts and identify the potential of emotion regulation activities for work motivation in more detail.

Even after considering affectivity, mental health activities were significantly associated with lower probabilities for the unhealthy Types A and B and a higher probability for the healthy but unambitious Type U. In regard to the healthy-ambitious Type H however, mental health activities could not explain additional variance once affectivity was included in the model. This indicates that beneficial aspects of PA and mental health activities in regard to work-related variables might be quite closely related. In contrast to PA, mental health activities were associated with a higher probability for Type U and a lower probability for Type A. Hence, mental health activities seem to be primarily associated with good coping abilities and positive emotions, whereas PA is also related to motivational processes (Lyubomirsky, King et al., 2005; Ng & Sorensen, 2009; Seo et al., 2004). Although the direct relationships between PA and the probabilities for Type U and Type A were not significant, PA was associated with these WCEP types via a higher engagement in mental health activities. Individuals high in PA were more likely to engage in mental health activities,

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which in turn was associated with a lower probability for Type A and a higher probability for Type U. Moreover, practicing mental health activities was associated with a reduced probability for Type B, even after the consideration of affectivity. Hence, not engaging in mental health activities seems to pertain other aspects of Type B than a lack of PA or a high level of NA. Mental health activities also significantly mediated the relationships between affectivity and Type B. Low PA and high NA were related to an increased probability for the risk of burnout Type B both directly and indirectly via a reduced engagement in mental health activities. This is in accordance to the loss cycle proposed by the COR theory, where a lack of resources leads to further resource loss due to a lack of resource gain (Hobfoll, 2002).

Overall, the mediation analyses in regard to work-related behavior and experiences highlighted especially the loss cycle whereas in regard to positive mental health the gain cycle or upward spiral became evident. However, the results described here are based on a sample of teachers. The teaching profession constitutes a particular profession with specific demands¹ and Study III indicates that mental health activities might be useful to counterbalance these specific demands. It would be interesting to explore if these findings can be extended to other professions.

Generally, the findings of Study III extend existing knowledge about the important relationships between affective experiences, behavior, and relevant outcomes to mental health activities (Fredrickson, 2013; Lyubomirsky, King et al., 2005; Pressman & Cohen, 2005). Especially high PA was related to a higher engagement in mental health activities, and both PA and mental health activities were related to more positive mental health and less unhealthy work-related behavior and experiences. In an extension to the B&B theory, Fredrickson

¹ For example, the teaching profession is associated with a lack of boundaries of working tasks, incompletely regulated working hours, low levels of control in regard to effects achieved, and a lack of feedback on the long-term consequences of teaching at school. Moreover, teachers need to bridge regulation and paedagogical freedom, have no career possibilities, and a lack of professional secrecy (for a detailed overview see Rothland, 2013).

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argues that positive emotions are linked to physical processes (e.g. increased vagal tone) and wellness behaviors (e.g. meditation, physical activity) and that these relationships are reciprocal (Fredrickson, 2013; Kok et al., 2013; Kok & Fredrickson, 2010; van Cappellen, Rice, Catalino, & Fredrickson, 2018). These findings are highly important for health promotion as they demonstrate the potential of mental health activities to induce positive emotions and improve mental and physical health. What seems decisive for this upward spiral is the positive emotional experience associated with the respective activity (Fredrickson, 2013; Fredrickson & Joiner, 2018). This is in line with the notion proposed by Lyubomirsky and Layous (2013) that the person-activity fit needs to be considered in order to make assumptions about beneficial effects of certain activities. Moreover, analyzing data from 51 studies with over 4.000 individuals, Sin and Lyubomirsky found that the practice of several and different positive activities appears to be most beneficial (Sin & Lyubomirsky, 2009, p. 483). Likewise, results from Study III indicate that especially the combination of all mental health activities was relevant. However, future research is needed to confirm the present findings and investigate the importance of a combination or variety more deeply.

Final Remarks

The present findings highlight the relevance of affectivity and mental health activities and suggest the usefulness of mental health activities as preventive arrangements on the public health level (Diener et al., 2017; Funk, Gale, Grigg, Minoletti, & Taghi Yasami, 2005; Kazdin & Rabbitt, 2013). Integrating and promoting these mental health activities might be appropriate not only for the prevention of work-related stress and mental impairment but also for the promotion of positive mental health. Based on the B&B theory (Fredrickson, 2004, 2013) and the COR theory (Hobfoll, 2002) it can be assumed that by practicing mental health activities, it is possible to enhance positive mental health and reduce unhealthy work-related behavior and experiences. However, longitudinal studies and randomized controlled trials are

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necessary to establish causal relationships and to evaluate the effectiveness of mental health activities. If mental health activities prove to be effective, these strategies should be embedded not only on the individual level for specific risk groups but also on the organizational and societal level, as part of early interventions for the whole population (Lethinen, Ozamiz, Underwood, & Weiss, 2005; Ormel, Cuijpers, Jorm, & Schoevers, 2019). Greater public awareness of the benefits of these activities could enhance the practice of mental health activities. Moreover, highlighting people's own responsibility and their own ability to act in order to reduce mental impairment and improve positive mental health and well-being could increase feelings of control and self-efficacy (Bandura, 1982; Ryan & Deci, 2000). Hence, the promotion and practice of mental health activities addresses central aspects of positive mental health: individuals resilience, self-esteem, self-efficacy, social connectedness, and feelings of control (Barry & Friedli, 2008). Mental health promotion within and beyond the work context is particularly sustainable if it follows a broad approach that focusses not only on the individual but integrates also interventions that strengthen communities and create supportive environments (Barry & Friedli, 2008; Lahtinen, Joubert, Raeburn, & Jenkins, 2005b; Marteau, Hollands, & Fletcher, 2012; Mittelmark, Puska, O'Byrne, & Tang, 2005; Ormel et al., 2019). Hence, the promotion of strategies like mental health activities constitute only a part of mental health promotion, but the present findings and existing research suggest that they might be an important part.

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References

- Al Nima, A., & Garcia, D. (2015). Factor structure of the happiness-increasing strategies scales (H-ISS): Activities and coping strategies in relation to positive and negative affect. *PeerJ*, 3, e1059. <https://doi.org/10.7717/peerj.1059>
- Baglioni, C., Spiegelhalder, K., Lombardo, C., & Riemann, D. (2010). Sleep and emotions: A focus on insomnia. *Sleep Medicine Reviews*, 14(4), 227–238. <https://doi.org/10.1016/j.smr.2009.10.007>
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *The American Psychologist*, 37(2), 122–147.
- Barry, M. M., & Friedli, L. (2008). *The influence of social, demographic and physical factors on positive mental health in children, adults and older people* (Foresight Mental Capital and Wellbeing Project No. State-of-Science Review: SR-B3). London.
- Bauer, J., Stamm, A., Virnich, K., Wissing, K., Muller, U., Wirsching, M., & Schaarschmidt, U. (2006). Correlation between burnout syndrome and psychological and psychosomatic symptoms among teachers. *International Archives of Occupational and Environmental Health*, 79(3), 199–204. <https://doi.org/10.1007/s00420-005-0050-y>
- Bauer, J., Unterbrink, T., Hack, A., Pfeifer, R., Buhl-Griesshaber, V., Müller, U., . . . Wirsching, M. (2007). Working conditions, adverse events and mental health problems in a sample of 949 German teachers. *International Archives of Occupational and Environmental Health*, 80(5), 442–449. <https://doi.org/10.1007/s00420-007-0170-7>
- Benetti, C., & Kambouropoulos, N. (2006). Affect-regulated indirect effects of trait anxiety and trait resilience on self-esteem. *Personality and Individual Differences*, 41(2), 341–352. <https://doi.org/10.1016/j.paid.2006.01.015>

GENERAL DISCUSSION

- Boehm, J. K., & Kubzansky, L. D. (2012). The heart's content: The association between positive psychological well-being and cardiovascular health. *Psychological Bulletin*, *138*(4), 655–691. <https://doi.org/10.1037/a0027448>
- Brickman, P., Coates, D., & Janoff-Bulman, R. (1987). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology*, *36*(8), 917–927.
- Brody, L. R., Hall, J. A., & Stokes, L. R. (2016). Gender and emotion: Theory, findings and context. In L. F. Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.), *Handbook of Emotions* (pp. 369–393). New York: Guilford Press.
- Brummelhuis, L. L. ten, & Bakker, A. B. (2012). Staying engaged during the week: The effect of off-job activities on next day work engagement. *Journal of Occupational Health Psychology*, *17*(4), 445–455. <https://doi.org/10.1037/a0029213>
- Çelebi, C., Krahé, B., & Spörer, N. (2014). Gestärkt in den Lehrerberuf: Eine Förderung berufsbezogener Kompetenzen von Lehramtsstudierenden. *Zeitschrift für Pädagogische Psychologie*, *28*(3), 115–126. <https://doi.org/10.1024/1010-0652/a000128>
- Charles, S. T., Piazza, J. R., Mogle, J., Sliwinski, M. J., & Almeida, D. M. (2013). The wear and tear of daily stressors on mental health. *Psychological Science*, *24*(5), 733–741. <https://doi.org/10.1177/0956797612462222>
- Cohn, M. A., & Fredrickson, B. L. (2010). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *The Journal of Positive Psychology*, *5*(5), 355–366. <https://doi.org/10.1080/17439760.2010.508883>

GENERAL DISCUSSION

- Diener, E., Heintzelman, S. J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L. D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology*, *58*(2), 87–104. <https://doi.org/10.1037/cap0000063>
- Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *The American Psychologist*, *61*(4), 305–314. <https://doi.org/10.1037/0003-066X.61.4.305>
- Epel, E., Prather, A. A., Puterman, E., & Tomiyama, A. J. (2016). Eat, drink, and be sedentary: A review of health behaviors' effects on emotions and affective states, and implications for interventions. In L. F. Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.), *Handbook of Emotions* (pp. 685–707). New York: Guilford Press.
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, *359*(1449), 1367–1378. <https://doi.org/10.1098/rstb.2004.1512>
- Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine & A. Plant (Eds.), *Advances in Experimental Social Psychology* (Vol. 47, pp. 1–53). Amsterdam: Academic Press. <https://doi.org/10.1016/B978-0-12-407236-7.00001-2>
- Fredrickson, B. L., & Joiner, T. (2018). Reflections on positive emotions and upward spirals. *Perspectives on Psychological Science: a Journal of the Association for Psychological Science*, *13*(2), 194–199. <https://doi.org/10.1177/1745691617692106>
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, *84*(2), 365–376. <https://doi.org/10.1037/0022-3514.84.2.365>

GENERAL DISCUSSION

- Funk, M., Gale, E., Grigg, M., Minoletti, A., & Taghi Yasami, M. (2005). Mental Health Promotion: An important component of national mental health policy. In H. Herrman, S. Saxena, & R. Moodie (Eds.), *Promoting Mental Health: Concepts Emerging Evidence Practice* (pp. 216–225). Geneva: World Health Organization.
- Garland, E. L., Fredrickson, B. L., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review, 30*(7), 849–864. <https://doi.org/10.1016/j.cpr.2010.03.002>.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *The American Psychologist, 44*, 513–524.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*(4), 307–324. <https://doi.org/10.1037//1089-2680.6.4.307>
- Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *Journal of Managerial Psychology, 20*(2), 178–187. <https://doi.org/10.1108/02683940510579803>
- Kaplan, S., Bradley, J. C., Luchman, J. N., & Haynes, D. (2009). On the role of positive and negative affectivity in job performance: A meta-analytic investigation. *The Journal of Applied Psychology, 94*(1), 162–176. <https://doi.org/10.1037/a0013115>
- Kazdin, A. E., & Rabbitt, S. M. (2013). Novel models for delivering mental health services and reducing the burdens of mental illness. *Clinical Psychological Science, 1*(2), 170–191. <https://doi.org/10.1177/2167702612463566>

GENERAL DISCUSSION

- Kessler, E.-M., & Staudinger, U. M. (2009). Affective experience in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology and Aging*, 24(2), 349–362. <https://doi.org/10.1037/a0015352>
- Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *The American Psychologist*, 62(2), 95–108. <https://doi.org/10.1037/0003-066X.62.2.95>
- Kohlmann, C.-W., & Hofmann, H. (2018, November). *Alltagsaktivitäten zur Aufrechterhaltung des psychischen Wohlbefindens: Überzeugungen zur Wirksamkeit und Zusammenhänge mit Positiver und Negativer Affektivität*. The Swiss Society for Public Health, Neuchâtel.
- Kok, B. E., Coffey, K. A., Cohn, M. A., Catalino, L. I., Vacharkulksemsuk, T., Algeo, S. B., . . . Fredrickson, B. L. (2013). How positive emotions build physical health: Perceived positive social connections account for the upward spiral between positive emotions and vagal tone. *Psychological Science*, 24(7), 1123–1132. <https://doi.org/10.1177/0956797612470827>
- Kok, B. E., & Fredrickson, B. L. (2010). Upward spirals of the heart: Autonomic flexibility, as indexed by vagal tone, reciprocally and prospectively predicts positive emotions and social connectedness. *Biological Psychology*, 85(3), 432–436. <https://doi.org/10.1016/j.biopsycho.2010.09.005>
- Kushlev, K., Drummond, D. M., & Diener, E. (2019). Subjective Well-Being and Health Behaviors in 2.5 Million Americans. *Applied Psychology. Health and Well-Being*. Advance online publication. <https://doi.org/10.1111/aphw.12178>

GENERAL DISCUSSION

Kuykendall, L., Tay, L., & Ng, V. (2015). Leisure engagement and subjective well-being: A meta-analysis. *Psychological Bulletin, 141*(2), 364–403.

<https://doi.org/10.1037/a0038508>

Lahtinen, E., Joubert, N., Raeburn, J., & Jenkins, R. (2005). Strategies for promoting the mental health of populations. In H. Herrman, S. Saxena, & R. Moodie (Eds.), *Promoting Mental Health: Concepts Emerging Evidence Practice*. Geneva: World Health Organization.

Layous, K., Chancellor, J., & Lyubomirsky, S. (2014). Positive activities as protective factors against mental health conditions. *Journal of Abnormal Psychology, 123*(1), 3–12.

<https://doi.org/10.1037/a0034709>

Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality, 1*, 141–169.

Lethinen, V., Ozamiz, A., Underwood, L., & Weiss, M. (2005). The intrinsic value of mental health. In H. Herrman, S. Saxena, & R. Moodie (Eds.), *Promoting Mental Health: Concepts Emerging Evidence Practice* (pp. 46–58). Geneva: World Health Organization.

Lyubomirsky, S., King, L. A., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*(6), 803–855.

<https://doi.org/10.1037/0033-2909.131.6.803>

Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science, 22*(1), 57–62.

<https://doi.org/10.1177/0963721412469809>

GENERAL DISCUSSION

- Marteau, T. M., Hollands, G. J., & Fletcher, P. C. (2012). Changing human behavior to prevent disease: The importance of targeting automatic processes. *Science*, *337*(6101), 1492–1495. <https://doi.org/10.1126/science.1226918>
- Matud, M.P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, *37*(7), 1401–1415. <https://doi.org/10.1016/j.paid.2004.01.010>
- Mittelmark, M. B., Puska, P., O'Byrne, D., & Tang, K.-C. (2005). Health promotion: A sketch of the landscape. In H. Herrman, S. Saxena, & R. Moodie (Eds.), *Promoting Mental Health: Concepts Emerging Evidence Practice*. Geneva: World Health Organization.
- Morgan, A. J., & Jorm, A. F. (2009). Self-help strategies that are helpful for sub-threshold depression: A Delphi consensus study. *Journal of Affective Disorders*, *115*(1-2), 196–200. <https://doi.org/10.1016/j.jad.2008.08.004>
- Ng, T. W., & Sorensen, K. L. (2009). Dispositional affectivity and work-related outcomes: A meta-analysis. *Journal of Applied Social Psychology*, *39*, 1255–1287.
- Norlander, T., Bood, S.-Å., & Archer, T. (2002). Performance during stress: Affective personality, age, and regularity of physical exercise. *Social Behavior and Personality: an International Journal*, *30*(5), 495–508. <https://doi.org/10.2224/sbp.2002.30.5.495>
- Ormel, J., Cuijpers, P., Jorm, A. F., & Schoevers, R. (2019). Prevention of depression will only succeed when it is structurally embedded and targets big determinants. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, *18*(1), 111–112. <https://doi.org/10.1002/wps.20580>
- Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health? *Psychological Bulletin*, *131*(6), 925–971. <https://doi.org/10.1037/0033-2909.131.6.925>

GENERAL DISCUSSION

- Reichl, C., Wach, F.-S., Spinath, F. M., Brünken, R., & Karbach, J. (2014). Burnout risk among first-year teacher students: The roles of personality and motivation. *Journal of Vocational Behavior*, 85(1), 85–92. <https://doi.org/10.1016/j.jvb.2014.05.002>
- Römer, J., Appel, J., Drews, F., & Rauin, U. (2012). Burnout-Risiko von Lehramts- und Jurastudierenden der Anfangssemester. *Prävention und Gesundheitsförderung*, 7(3), 203–208. <https://doi.org/10.1007/s11553-012-0345-2>
- Rosenfield, S., & Mouzon, D. (2012). Gender and Mental Health. In C. S. Aneshensel, J. C. Phelan, & A. Bierman (Eds.), *Handbooks of Sociology and Social Research. Handbook of the Sociology of Mental Health* (2nd ed., pp. 277–296). Dordrecht, New York: Springer.
- Rothland, M. (2013). Beruf: Lehrer/Lehrerin - Arbeitsplatz: Schule: Charakteristika der Arbeitstätigkeit und Bedingungen der Berufssituation. In M. Rothland (Ed.), *Belastung und Beanspruchung im Lehrerberuf: Modelle, Befunde, Interventionen* (2nd ed., pp. 21–42). Wiesbaden: Springer Fachmedien Wiesbaden; Imprint: Springer VS.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, 55(1), 68–78.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revised. *Journal of Personality and Social Psychology*, 4, 719–727.
- Schaarschmidt, U., & Fischer, A. W. (2008). *AVEM - Arbeitsbezogenes Verhaltens- und Erlebensmuster: Manual* (3rd ed.). Frankfurt am Main: Pearson.
- Seo, M.-G., Feldman Barrett, L., & Bartunek, J. M. (2004). The role of affective experience in work motivation. *Academy of Management Review*, 29, 423–439.

GENERAL DISCUSSION

- Sheldon, K. M., & Lyubomirsky, S. (2012). The challenge of staying happier: Testing the Hedonic Adaptation Prevention model. *Personality & Social Psychology Bulletin*, 38(5), 670–680. <https://doi.org/10.1177/0146167212436400>
- Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology*, 65(5), 467–487. <https://doi.org/10.1002/jclp.20593>
- Sirois, F. M., & Hirsch, J. K. (2015). Big Five traits, affect balance and health behaviors: A self-regulation resource perspective. *Personality and Individual Differences*, 87, 59–64. <https://doi.org/10.1016/j.paid.2015.07.031>
- Sonnentag, S., Arbeus, H., Mahn, C., & Fritz, C. (2014). Exhaustion and lack of psychological detachment from work during off-job time: Moderator effects of time pressure and leisure experiences. *Journal of Occupational Health Psychology*, 19(2), 206–216. <https://doi.org/10.1037/a0035760>
- Sonnentag, S., & Zijlstra, F. R. H. (2006). Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue. *Journal of Applied Psychology*, 91(2), 330–350.
- Tamres, L. K., Janicki, D., & Helgeson, V. S. (2002). Sex differences in coping behavior: A meta-analytic review and an examination of relative coping. *Personality and Social Psychology Review*, 6(1), 2–30.
- Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & Chermont, K. de (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, 129(6), 914–945. <https://doi.org/10.1037/0033-2909.129.6.914>

GENERAL DISCUSSION

- Tkach, C., & Lyubomirsky, S. (2006). How do people pursue happiness?: Relating personality, happiness-increasing strategies, and well-being. *Journal of Happiness Studies*, 7(2), 183–225. <https://doi.org/10.1007/s10902-005-4754-1>
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86(2), 320–333. <https://doi.org/10.1037/0022-3514.86.2.320>.
- Van Cappellen, P., Rice, E. L., Catalino, L. I., & Fredrickson, B. L. (2018). Positive affective processes underlie positive health behaviour change. *Psychology & Health*, 33(1), 77–97. <https://doi.org/10.1080/08870446.2017.1320798>.
- Walsh, R. (2011). Lifestyle and mental health. *The American Psychologist*, 66(7), 579–592. <https://doi.org/10.1037/a0021769>
- Warner, R. M., & Vroman, K. G. (2011). Happiness inducing behaviors in everyday life: An empirical assessment of "The How of Happiness". *Journal of Happiness Studies*, 12, 1063–1082. <https://doi.org/10.1007/s10902-010-9245-3>
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological bulletin*, 96(3), 465–490.
- Watson, D., & Clark, L. A. (1994). *The PANAS-X manual for positive and negative affect schedule*. Iowa City: University of Iowa.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070.
- Watson, D., & Slack, A. K. (1993). General factors of affective temperament and their relation to job satisfaction over time. *Organizational Behavior and Human Decision Processes*, 54, 181–202.

GENERAL DISCUSSION

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, 98(2), 219–235.

Wiese, C. W., Kuykendall, L., & Tay, L. (2018). Get active? A meta-analysis of leisure-time physical activity and subjective well-being. *The Journal of Positive Psychology*, 13(1), 57–66. <https://doi.org/10.1080/17439760.2017.1374436>