Does eustress play a role in the relationship between optimism and mental wellbeing?

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Abstract

The purpose of this study was to investigate the relationship between optimism, eustress and mental wellbeing. Specifically, it was determined to what extent eustress indirectly affects the relationship between optimism and mental wellbeing. A questionnaire was set up to measure participants (n =101) scores on the concepts optimism, eustress and mental wellbeing. Preacher & Hayes (2004) indirect effect assessment was conducted to identify if eustress is indirectly effecting the relationship between optimism and mental wellbeing. Distress was found to be significantly related with all concepts, therefore it was added as a control variable. Results indicated that the variables optimism, eustress and mental wellbeing are positively associated. Eustress was found to play a mediating role in the association between optimism and mental wellbeing when controlled for distress. The findings emphasize the importance of optimism and eustress response in the enhancement of mental wellbeing.

Introduction

In the daily language use the term stress is widespread. People talk about being stressed or experience a situation as too stressful. It seems as stress is inevitable in our modern life (Kupriyanov & Zhadanov, 2014). Human bodies are constantly responding to demands of the environment. Those demands are the stressors (Hargrove et al., 2013). The stressors are cognitively appraised by the people that experience them. According to Selye (1950) the feeling of stress is the response to those stressors. The response could be either positive or negative. Positive stress response is called eustress and negative stress response is called distress. Positive stress response in the end will lead to either positive outcome such as an increased healthiness (Lazarus,1993). Distress can lead to negative outcome like high blood pressure (Le Fevre et al.,2003). Le Fevre et al. (2003) declared that if a reaction to stress will be positive or negative is influenced by characteristics of the individual and the individuals' perception of the situation. One characteristic of an individual influencing stress appraisal is optimism. Optimists respond with less distress and more eustress (Scheier, 1987). The optimistic appraisal of stressors could lead to eustress and the optimist being healthier (Scheier, 1987). Optimist seems to be an interesting concept in the enhancement of wellbeing. Moreover, it could be possible that eustress plays an important role in it. The study is aimed to further examine the relationship between optimism, eustress and mental wellbeing.

Optimism

Optimism can be defined as the capability to await the best possible future, the expectation that good things will happen in the future and that the number of bad things about

to happen is low. Optimism is the ability to have positive expectations (Dember et al.,1999, Hayes &Waethington, 2007). It also includes interpreting events, good and moreover bad ones with a general positive attitude which leads to the future be seen in a more positive light (Huan, Yeo, Ang, & Chong, 2006).

Optimism relates to plenty of positive outcomes. A strong correlation is found between an optimistic personality and the perceived quality of life. A reason could be a better adjustment to daily hassles and the ability to overcome challenges (Hayes and Waethington, 2007). Since optimists have the capability to look at daily hassles and challenges in a positive way, they need less effort to overcome them. Furthermore, optimistic individuals score higher on self-confidence and have higher levels of self-efficacy which makes it easier for them to perform well and achieve their goals (Peterson & Bossio, 1991).

As the relationship of optimism and stress is regarded, positive outcomes could be found as well. Optimism influences the coping behavior to various stressor which in turn can be beneficial for physical as well as psychological wellbeing (Scheier,1987, Hayes and Waethington ,2007). It appears that optimists mainly cope in a problem focused way (Scheier et al., 1986). Hayes and Waethington (2007) argued optimism being one of the main accounts of why people go on and try to carry on instead of giving up in difficult situations.

A lot of research is done at the work environment where a difference in stress response could be found between optimistic individuals or not. Through an optimistic expectation style at work distress levels can be lowered significantly (Hayes &Waethington, 2007). Examples are optimistic restaurant managers who are found to experience less distress at their work (Hayes and Waethington, 2007). Further they rated their overall life satisfaction higher because they accept more challenges and are exposed to less distress.

Also in other environments optimism was found to have positive effects. Scheier (1987) studied the expectations of patients with severe illnesses. Differences are found in the way optimistic and pessimistic individuals cope with stressors of surgery and recovery. It appears as optimistic individuals more often made plans and set goals for recovery. Furthermore, the optimistic individuals were less likely to extremely focus on the negative emotional aspects of their illness like being nervous or sad. That lead to conclusion that optimists respond to stressor in the way of formulating plans for action taking, keeping themselves focused and not getting over attached with negative emotions that are associated with the stressor. Especially in breast cancer patient one factor that is foreseen to impact on the patient's wellbeing is optimism which presume a better adjustment to the stressful circumstance (Karademas et al., 2007). Also, optimistic college students could cope with the stressors of studying in a more effective way. They reported low levels of distress, loneliness and depression (Hayes &Waethington, 2007).

Eustress

Most knowledge about stress is about the negative effects whereas the positive side of stress is less often studied (Hagrove et al., 2013). Kupriyanov & Zhdanov (2014) stated that there must be a shift away from combining the term stress with only negative reaction to stressors and the so-called distress. Eustress is a positive response to stressful events which comes along with healthy physical states and positive emotions (Lazarus, 1993). Eustress is often perceived as an optimal level of stress (Le Fevre et al., 2003).

There are several theories about the factors influencing the perception of the stressor as eustressful. Some individual traits that are identified by Hargrove et al. (2013) influencing

eustress are vigor and positive affect. Also, meaningfulness and manageability are said to play a role. Nurses mention to experience eustress through the hope, meaningfulness and engagement they experience at work. So, it can be stated that eustress is a response with goodwill and hope (Hargrove et al., 2015). Eustress is thought to arise through experience of only a little or nearly no gap between desired and current reality (Le Fevre et al., 2003). Benefit of one's own wellbeing or the realization of goals lead to a positive appraisal. As well as the possible fulfillment of wishes (Edwards & Cooper, 1988). Lazarus (1966) argued that if a stress response will be positive is influenced by the individual's appraisal. Optimism is an important personality trait influencing the stress appraisal. Optimists expect that positive changes are about to happen (Scheier, Weintraub & Carver, 1986). Implicating that optimists mostly deal with stressors in a positive manner leading to a eustress response.

Positive outcome is associated with eustress. As stated in Hargrove et al. (2013) positive stress can lead to a state of being fully present, having an optimal state of attention, being completely focused and being exhilarated. Intensive care nurses are exposed to extreme stressors. On the other hand, they often report themselves being satisfied at work. This shows that even in a high stressing work environment eustress can be experienced (Nelson & Cooper, 2005). Eustress is thought to prevent work related problems like frustration, tiredness or burnout (Hayes & Waethington, 2007). In addition, it is thought to boost self-reliance, character and sense of vocation (Kupriyanov & Zhdanov, 2014).

Mental wellbeing

Mental wellbeing is not just the absence of disease. Mental wellbeing is the presence of positive emotional states and positive functioning in life (Nelson & Cooper, 2005). It is an umbrella term for presence of various positive feelings and functioning (Keyes,2002).

Positive psychology is getting more spread and mental wellbeing is getting more important. Slade (2010) argued that there is a need of creating a shift away from just treating illnesses to also create wellbeing. Mental wellbeing and mental illness share only a quarter of variance. Therefore, professionals need to focus on both, reduction of illness and creating wellbeing (Slade, 2010). Promotion of mental wellbeing is important because of its impact on personal identity and maintenance of social roles (Slade,2010). Furthermore, it is a predictor of overall life satisfaction and leads to longevity and physical health (Kupriyanov & Zhdanov, 2014).

Genetic make-up and personality traits are mentioned to be powerful predictors of mental wellbeing (Helliwell & Putnam, 2005). Examples could be self-esteem or optimism. Optimists display various positive emotional states. They report a greater amount of happiness, gratitude and relief (Scheier & Carver, 1992). Also, they are more satisfied with their jobs and the emotional support they receive (Scheier & Caver, 1992). Therefore, they rate their satisfaction with life higher which is an indicator for mental wellbeing (Scheier & Carver, 1992). Edwards and Cooper (1988) argued that eustress is best detected through positive psychological states. Examples of positive psychological states that are associated with eustress are enthusiasm, alertness and activity, as well as overall life satisfaction (Kupriyanov & Zhdanov, 2014). All these positive states could be termed under mental wellbeing. In addition, Edwards and Cooper (1988) argued that eustress and mental

wellbeing could be directly and indirectly associated. Eustress could be directly associated with mental wellbeing through hormonal and biochemical changes. Indirectly by the capability and effort to cope with existing distress.

Current research

This research should examine if there is a positive relationship between optimism and mental wellbeing and if the concept of eustress plays a role by enhancing this relationship. Optimism is thought to be associated with eustress because of the optimist's capability to interpret stressors with their general positive attitude. Furthermore, optimism is thought to be one factor related to mental wellbeing because of their tendency to have positive expectations that are followed by positive emotional states like happiness and relief. Eustress could enhance mental wellbeing trough the fact that it makes goal realization and personal growth likely which is followed by positive emotions. Improvement of mental wellbeing is getting more important in the psychological practice and optimism and eustress seem to be associated with it. Expected is that eustress is the factor influencing the association between optimism and mental wellbeing. The following research question has been formulated. Does eustress play a significant role in the relationship between optimism and mental wellbeing?

The following hypotheses have been formulated.

H1: Positive association between optimism and mental wellbeing exists.

H2: Positive association between optimism and eustress exists.

H3: Positive association between eustress and mental wellbeing exists.

H4: Eustress mediates the relationship between optimism and mental wellbeing**.**

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Method

Design

A descriptive cross-sectional survey based design was employed in this study. The dependent variable is mental well-being and the independent variable is optimism. Eustress is thought to function as a mediator between independent and dependent variable. Distress was added as a control variable to ascertain that the effect of eustress is measured independent of levels of distress.

Participants

A convenience sample (n = 101) was drawn (44 Males (43,6 %), 57 Females (56,4 %), *M* = 26, 09 years, *SD* = 9.5). In total, 149 participants started the survey. Participants who stopped the survey and participants who rated their English skills below average were not included in the analyses. Characteristics of the participants are shown in Table 1.

Table 1 Characteristics of participants in frequencies and percentages (n=101)

	Male N (%)	Female N (%)	Total N (%)
Marital status			
Single	18 (40,9)	26 (45,6)	44 (43,6)
In a relationship	21 (47,7)	27 (47,4)	48 (47,5)
Married	5 (11,4)	4 (7,0)	9 (8,9)
Highest educational Qualification			
Vocational education	2(4,5)	1(1,8)	3 (3,0)
Secondary education	1 (2,3)	0 (0,0)	1 (1,0)
Higher secondary education	24 (54,5)	40 (70,2)	64 (43,4)
Bachelor`s Degree	9 (20,5)	11 (19,3)	20 (19,8)
Master's Degree	8 (18,2)	5 (8,8)	13 (12,9)
Current occupational status			
Student	25 (56,8)	39 (68,4)	64 (63,4)
Employee for wages	15 (34,1)	15 (26,3)	30 (29,2)
Self-employed	1 (2,3)	0 (0,0)	1 (1,0)
Unemployed	2 (4,5)	1 (1,8)	3 (3,0)
Supported by religion			
Yes	9 (20,5)	19 (33,3)	28 (27,7)
No	35 (79,5)	38 (66,7)	73 (72,3)

Procedure

After receiving ethical approval, the data collection started from the 31. March 2017 until the 28. April 2017. The survey was spread through social media (Facebook and WhatsApp) and face to face interaction. Relatives and acquaintances of the researchers were asked if they were willing to participate. Participation was completely anonymous and voluntary. The participants obtained a link to the survey made on Qualtrics. First, the participants were informed about the purpose of the research and the participants had to agree on the informed consent. First, couple of questions were given about general information of the respondent (sex, age, occupation etc.). The study was a part of a larger study. Therefore, questionnaires were included that are not among the variables. It contained 197 questions out of nine different scales. All scales were in English. The scales were arranged in the following

order: Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith,1983), Levenson Multidimensional Locus of Control Scales (Levenson, 1973), Mental Health Continuum Short Form (MHC -SF) (Keyes, 2009), General Self Efficacy (GSE) (Schwarzer & Jerusalem. 1995), Resilience scale by Block and Kremen (1996), COPE Inventory (Carver, Scheier & Weintraub, 1989), the LOT- R (Scheier, Carver & Bridges, 1994) and a scale to measure the concept of eustress and a scale to measure distress. Participation took 35 to 45 minutes on average to fill in the questionnaire. Participants who were interested in receiving further information about the study and the outcome where able to leave their email addresses. After this the participants were guided back to the website of the university.

Materials

Optimism

Life Orientation Test – Revised (LOT-R) by Scheier, Carver and Bridges (1994) was used. Through ten items optimism was measured. Three items measured optimism, three items measured pessimism and four items were fillers. The items are rated on a 5-point- scale [1= *I disagree a lot*; 5 = *I agree a lot*]. To determine the construct optimism, the three items that are measuring optimism plus the reverse score of the items measuring pessimism were used. The fillers were excluded. An example of an item is the following. “In uncertain times, I usually expect the best.”. Internal consistency of the LOT-R was indicated around .78 (Scheier et al, 1994). The current study revealed a sufficient internal consistency (α = .66).

Eustress

To measure eustress a new questionnaire was developed. Participants rated on a 6-point Likert scale [1 = *Never*; 6 = *Always*] how many times during the past month they experienced eustress. Fifty items measured eustress. To reduce number of items, a principal component analysis with orthogonal rotation (varimax) and one fixed factor was conducted. The seven items on the factor eustress with the highest factor loading were selected for the questionnaire. An example item of eustress is: “In the last month, how often have you learned from coping with a difficult situation?”. The scale had a good internal stability (Cronbach’s α: Eustress = .88).

Mental Wellbeing

To measure mental wellbeing the Mental Health Continuum – short form (MHC-SF) (Keyes, 2009) was used. It is made up of 14 questions belonging to three subscales: emotional wellbeing, psychological wellbeing and social wellbeing. There are three items to measure emotional well-being. Six items are representing psychological well-being and another five items are detecting social well-being. The items are of a six-point-Likert-type [1 = *Never;* 6 = *Every day*]. An example of a question is “During the past month, how often did you feel that you had warm and trusting relationships with others?”. The internal consistency is tendered higher than .8 (Keyes, 2009). In the current study a good Cronbach’s alpha of .84 was found.

Distress

Distress was measured through a new developed questionnaire. Participants rated on a 6-point Likert scale [1 = *Never*; 6 = *Always*] how many times during the past month they experienced distress. Fifty items measured distress. To reduce number of items, a principal component analysis with orthogonal rotation (varimax) and one fixed factor was conducted. The seven items on the factor distress with the highest factor loading were selected for the questionnaire. An example item of distress is: “In the last month, how often have you felt incapable to overcome difficulties?”. The scale had a good internal stability (Cronbach’s α: Distress = .93).

Analysis

The analysis was done with SPSS version 24. First, descriptive statistics were calculated to get means and standard deviations. Skewness and kurtosis was calculated to determine the normality of the data. Second, Spearman correlation coefficients were computed to determine the relationship amongst the variables. Spearman’s rho correlation measurement was chosen because not all variables were normally distributed. Effect sizes for the correlation coefficients were set at .3 (medium effect) and .5 (large effect). Statistical significance was set at $p < 0.01$.

Third, the indirect effects were assessed through Preacher and Hayes (2004) indirect effect assessment. Indirect effects were computed for each of 5000 bootstrapped samples. Mediation is significant when the 95 % confidence interval did not include zero. Distress because significantly associated with the variables of the study was added as a control variable to the bootstrap indirect effect procedure.

Results

Descriptive Statistics

Optimism (skewness = -.43 (*SE* = .24); kurtosis = .73 (*SE*=.48)), Eustress (skewness = -.26 (*SE* =.24); kurtosis =-.35 (*SE*=.48)) and Mental wellbeing (skewness = .05 (*SE*=.24); kurtosis =-.23 (*SE*=.48)) were normally distributed. Distress was highly skewed. (skewness = 1.02 (*SE*=.24); kurtosis = 1.23 (*SE*=.48).

Descriptive statistics showed that participant scored above the mean of the scale on the concepts optimism (μ =3,46), eustress (μ = 4.04), and mental wellbeing (μ =4,1). Scores on the concept distress (μ = 2.6) were average.

Spearman's rho correlation test showed that Eustress has a large correlation with mental wellbeing (*r*=.50, *p*<0.01; ***large effect***). The correlation between Eustress and optimism (*r*= .43, *p*<0.01; ***medium effect,***) was medium. As well as the correlation between optimism and mental wellbeing (*r*=.46, *p*<0.01¸, ***medium effect,***). All relations are positive and significant.

Correlation analyses showed that distress is significantly related to the concepts optimism (*r*= - .34, *p*<0.01) and mental wellbeing (*r*= - .33, *p*<0.01). Furthermore, eustress and distress are related (*r* = -.46, *p* < 0.01). Therefore, the variable was added as a control variable to the indirect effect analysis.

Correlation of eustress and mental wellbeing (r = .5, *p* < 0.01; ***large effect***) was stronger than the correlation with distress and mental wellbeing (*r* = .33, *p* < 0.01; ***medium effect***). Correlation with optimism has nearly the same strength for distress (*r* = -.34) and eustress (*r* = .43). In Table 2 the means, standard deviations and the correlations between the constructs are displayed.

Table 2 Means, Standard deviations and Spearman Correlations between concepts (N =106)

	μ	σ	Optimism α = .66	Mental Wellbeing α = .84	Eustress α = .87	Distress α = .93
1. Optimism (1-5)	3.5	.66				
2. Mental Wellbeing (1-6)	4.1	.71	.46**			
3. Eustress (1-6)	4.1	.77	.43**	.50**		
4. Distress (1-6)	2.6	.80	-.34**	-.33**	-.46**	

μ Mean σ Standard Deviation, ** Correlation is significant at the 0.01 level (2- tailed)

Hypothesis testing

Results showed that 31 % of the variance could be explained trough the indirect effect model of the association between optimism, eustress and mental wellbeing (R^2 = .31, F (2,98) = 22.2, p = 0.00)

Results indicated that optimism has a positive association with mental wellbeing when controlled for distress (β = .30, *SE* = .10, *t (101)* =2.9, $p < 0.05$). *Hypothesis one is accepted*. Positive association between optimism and eustress was found when controlled for distress (β =.31, *SE* = .10, *t (101)* = 2.94, $p < 0.05$). *Hypothesis two is accepted.* Eustress is found to be positively associated with mental wellbeing when controlled for distress (β = .31, *SE* = .10, *t (101)* = 3.25, $p < .05$). *Therefore, the third hypothesis can be accepted.*

The outcome of the bootstrapping procedure is the following. Indirect effect was β= .09, *SE*= .04. The 95% confidence interval excluded zero ranging from [.04, .19]. Meaning that eustress indirectly effects the association between optimism and mental wellbeing when controlled for distress. *The fourth hypothesis can be accepted.* In Figure 1 the outcomes of the mediation analysis are illustrated.

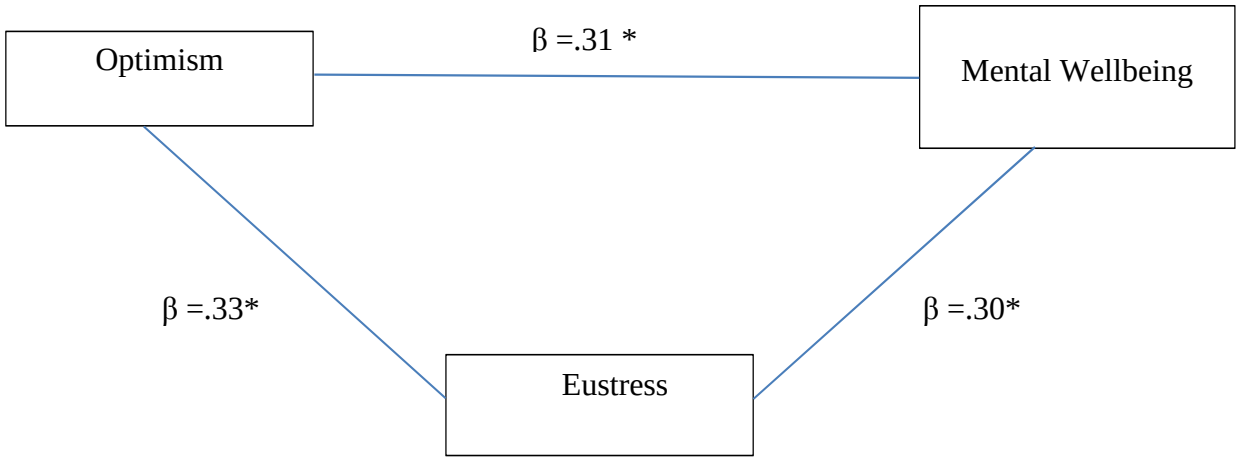

*Figure 1: Mediation Model Standardized Regression Coefficients and Standard Error for the relationship between optimism and mental wellbeing mediated by eustress, controlled for distress. *p < 0.05*

Discussion

The purpose of this paper was to investigate the relationship between optimism, eustress and mental wellbeing. Specifically, the purpose was to determine to what extent eustress indirectly affects the relationship between optimism and mental wellbeing. Because optimism is related to well-being (Scheier & Carver, 1992), knowing if eustress is related to optimism can be a useful tool in achieving well-being. Eustress is found to be a significant mediator in the relationship between optimism and mental wellbeing. This means, that the positive association between optimism and mental wellbeing is expected to exist trough the experience of eustress.

Eustress as a mediator in the association between optimism and mental wellbeing was not examined earlier. This result could be explained as follows. Eustress is defined as the positive response to the appraisal of stressors. It is often experienced as a state of stress that goes along with being fully present, an optimal level of attention and being fully focused (Hargrove et al., 2013). Optimists were thought to basically appraise stressors in a more positive way by their capability to interpret events with a general positive attitude (Huan et al., 2006). This indicates that optimists could have the potential to mainly respond with eustress. Eustress is likely to arise when mastering of challenges generate personal development and achievement of personal goals (Hargrove et al., 2015). Optimists mostly cope in a problem focused way which makes mastering of great challenges more realistic. All this strengthen the association with mental wellbeing.

Of interest could also be the circumstances why optimists experience more eustress. It seems like optimists mostly respond with eustress trough the used problem focused coping style (Scheier et al., 1986). Another possibility could be that optimists are open to accept

more challenges. The actions people are taking are mostly influenced by the expectations they have about it (Scheier & Carver, 1992). Optimists have in general positive expectations and this could let them be more open for challenging behavior. Since seeing the desired outcome as realizable will trigger the wish to strive for it (Scheier & Carver, 1992). If optimists more often accept challenges, they on the one hand would generally be exposed to more stressors. On the other hand, it could lead to more situations where it is possible to experience eustress. Accepting more challenges, and trying to realize goals could be a factor leading to eustress and personal growth. This in turn could be a predictor of the enhanced wellbeing.

Limitations

The current study showed some limitations. First, mediation analysis showed that the variables are associated. But, cross sectional studies could not predict causality. To estimate the direction of the relations, it would be necessary to set up an experiment.

The dropout rate of the survey was relatively high. In total, 149 people started the survey but only the data of 101 participants could be used for the analyses. About 64 % of all participants were students, showing that variety of the participants was limited. If results should be generalized that must be taken into consideration. Factors that are often seen to positively influence mental wellbeing are education and employment (Helliwell & Putnam, 2005). The classic view of a healthy person is a young, well educated, well paid, optimist person (Helliwell & Putnam, 2005). That would implement that the results found through mostly students could be more positively than the general population norm. On the other hand, Roberts *et al*. (2000) pictured student's levels of mental health to be poorer than the

norms in the general population. Factors that could be of influence are student's financial difficulties and academic concerns (Andrews & Wilding, 2004). Research with different kind of populations would be suggested to be certain that results are generalizable to the general population.

Scales for measurement of eustress and distress were set up through a factor analysis. The scales were no validated scales that are known to have good psychometrics and construct validity. Still, all scales display a good Cronbach's alpha. Furthermore, it was controlled for distress in the analysis to ensure that effects are only assessed with the concept eustress. It must be considered that there is no validated scale available measuring eustress response. One existing scale is the Valencia eustress – distress appraisal scale (Rodríguez, Kozusznik & Peiró, 2013) which is focusing on the appraisal, not the response. Furthermore, there exist a perceived stress scale (Cohen, Kamarck & Mermelstein, 1994) measuring the degree to which situation in life are appraised as stressful. Also, this scale does not focus on the positive stress response.

Practical implications

If the results could be generalized to the society practical implications could be the following. In the psychology, it is getting more and more common to not just focus on the treatment of mental illnesses, but to create mental wellbeing (Slade,2010). Herman and Jané-Llopis (2005) stated that strategies to create and implement mental health promoting interventions are lacking. Interventions are considered to be crucial for the public health, they are thought to influence social and personal costs (Herman & Jané-Llopis,2005). Absence of positive mental health can lead to death, suffering, disability and exclusion. Contrasting,

mental wellbeing is necessary to let an individual and the community function actively (Herman & Jané-Llopis,2005). Furthermore, mental wellbeing necessary for people that they could use their capacities, work productively and contribute to the community (Herman & Jané-Llopis,2005). Mental health promoting intervention could lead to improved quality of life, better educational or work performance and prevention of health damaging and anti-social behavior (Herman & Jané-Llopis,2005).

Interventions, until now are mostly named as anti-stress training. Those anti-stress trainings are focusing on the reduction of stressors (Kupriyanov & Zhdanov, 2014). Because reduction of stressors seems to be impossible, those trainings are hardly working (Kupriyanov & Zhdanov). Also in the work environment, it is important to invest in stress interventions. DeFrank and Cooper (2013) argued that employers could be held accountable for the physical and mental problems their employees experience through job stress. Now, there exist different kind of intervention for every problem as negative mood states, low job satisfaction or absenteeism. But to let these interventions work, the conceptualization of those interventions needs to be broaden (DeFrank & Cooper, 2013).

Optimists could serve as a role model for an intervention to create wellbeing. Hayes and Waethington (2007) mentioned that modifying the way people experience and respond to stressors could be a great success in the enhancement of mental wellbeing. In the current study, eustress was found to have a large correlation with mental wellbeing. The found negative relation of eustress and distress showed that if eustress is increasing, distress should decrease. Not only mental wellbeing could be advanced by learning to respond with eustress, also distress response and outcome could be prevented (Le Fevre et al., 2003). Therefore, using optimists as a role model for how to experience eustress could be a useful tool. Coping

styles that optimists are using could be an important factor. There is the view that optimist mainly deal with challenges in a problem focused way (Scheier, 1986). Optimists more often make plans and set goals and are less likely to focus on negative emotions (Scheier, 1987). This seems to make it easier for optimist to overcome daily hassles as well as great challenges. Also, optimists challenge accepting behavior could influence the stress response. Accepting more challenges can lead to a greater realization of goals and personal growth. These strategies could be considered to create an intervention to improve mental wellbeing using optimists and their strategies to experience eustress as a model.

Recommendations for further research

Optimism and the relation with eustress needs further research. First, to see what besides of coping styles are the characteristics that made eustress for optimists more likely. It could be of interest to research if optimists accept challenges more often. Knowledge about coping styles, challenges and other variables triggering eustress is necessary to use those strategies.

To gather a clearer picture about optimist's stress appraisal, research with different form of stressors would be recommended. Research could be performed measuring optimist's appraisal of and response to chronic forms of stress. It is found that unemployment is one factor that is a strong predictor of poor mental wellbeing (Helliwell & Putnam,2005). It could be interesting to focus on how optimists deal with the stressors of unemployment. Also, material wellbeing is one predictor of wellbeing (Helliwell & Putnam, 2005). On the other hand, one major predictor of mental health problems is relative social disadvantages (Herman & Jané-Llopis, 2005). Therefore, research about optimists response to stressors of financial

pressure would be interesting to study. Furthermore, mediation analysis is no predictor of causality. To gather information about the direction of relationships it would be necessary to set up an experiment studying the cause and effect relationship of the variables.

Conclusion

Findings revealed that eustress is the factor mediating the association of optimism and mental wellbeing. It is if importance to create mental health promoting interventions because of the influence of mental wellbeing on the individual and public functioning. Knowledge about strategies that could be used until now is limited. Considering that findings must be proven to be generalizable to the general population, an interesting implication could be to use optimist strategies to experience eustress for an mental wellbeing promoting intervention. This could be a great milestone for the wellbeing of the society.

References

Andrews, B., & Wilding, J. M. (2004). The relation of depression and anxiety to life-stress and achievement in students. *British Journal of Psychology*, *95*(4), 509-521. doi:10.1348/0007126042369802

Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology*, *70*(2), 349-361. doi:10.1037//0022-3514.70.2.349

Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology*, *61*(1), 679-704. doi:10.1146/annurev.psych.093008.100352

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*, 267-283.

Chang, E. C. (1998). Does dispositional optimism moderate the relationship between perceived stress and psychological well-being? A preliminary investigation. *Personality and Individual Differences, 25,* 233–240.

Chang, E. C., & Bridewell, W. B. (1998). Irrational beliefs, optimism, pessimism, and psychological distress: A preliminary examination of differential effects in a college population. *Journal of Clinical Psychology*, *54*(2), 137-142. doi:10.1002/(sici)1097-4679(199802)54:2<137::aid-jclp2>3.0.co;2-p

Ciarrochi, J., Deane, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences*, *32*(2), 197-209. doi:10.1016/s0191-8869(01)00012-5

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). Perceived stress scale. *PsycTESTS Dataset*. doi:10.1037/t02889-000

Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. Measuring stress: A guide for health and social scientists.

Cooper, C. L., Rout, U., & Faragher, B. (n.d.). Mental Health, Job Satisfaction, and Job Stress among General Practitioners. From Stress to Wellbeing Volume 1. doi:10.1057/9781137310651.0026

DeFrank, R. S., & Cooper, C. L. (2013). Worksite stress management interventions: Their effectiveness and conceptualisation. *From Stress to Wellbeing Volume 2*, 3-13. doi:10.1057/9781137309341_1

Dember, W. N., Helton, W. S., Matthews, G., & Warm, J. S. (1999). Optimism, pessimism, and false failure feedback: Effects on vigilance performance. *Current Psychology: Developmental, Learning, Personality, Social, 18*(4), 311-325.

Edwards, J. R., & Cooper, C. L. (1988). The impacts of positive psychological states on physical health: A review and theoretical framework. *Social Science & Medicine, 27*(12), 1447-1459. doi:10.1016/0277-9536(88)90212-2

Edwards, J. R., & Rothbard, N. P. (1999). Work and family stress and well-being: An examination of person-environment fit in the work and family domains. *Organizational Behavior and Human Decision Processes*, *77*(2), 85-129. doi:10.1006/obhd.1998.2813

Hargrove, M. B., Becker, W. S., & Hargrove, D. F. (2015). The HRD eustress model. *Human Resource Development Review*, *14*(3), 279-298. doi:10.1177/1534484315598086

Hayes, C. T., & Weathington, B. L. (2007). Optimism, stress, life satisfaction, and job burnout in restaurant managers. *The Journal of psychology*, 141(6), 565-579.

Helliwell, J. F., & Putnam, R. D. (2005). * The social context of well-being. *The Science of Well-Being*, 434-459. doi:10.1093/acprof:oso/9780198567523.003.0017

Herman, H., & Jané-Llopis, E. (2005). Mental health promotion in public health. *Promotion & Education*, *12*(2_suppl), 42-47.

Huan, V. S., Yeo, L. S., Ang, R. P., & Chong, W. H. (2006). The influence of dispositional optimism and gender on adolescent's perception of academic stress. *Adolescence*, 41(163), 533-546.

Hargrove, M. B., Nelson, D. L., & Cooper, C. L. (2013). Generating eustress by challenging employees. *Organizational Dynamics*, *42*(1), 61-69. doi:10.1016/j.orgdyn.2012.12.008

Keyes, C. L. M. (2009). Atlanta: Brief description of the mental health continuum short form (MHC-SF). Available: http://www.sociology.emory.edu/ckeyes/. [On–line, retrieved insert date retrieved].

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, *43*(2), 207. doi:10.2307/3090197

Kupriyanov, R., & Zhdanov, R. (2014). The eustress concept: problems and outlooks. *World Journal of Medical Sciences, 11*(2), 179-185. Retrieved from DOI: 10.5829/idosi.wjms.2014.11.2.8433

Lamers, S.M.A., Westerhof, G.J., Bohlmeijer, E.T., ten Klooster, P.M., & Keyes, C.L.M. (2011). Evaluating the psychometric properties of the Mental Health Continuum-Short Form (MHCSF). Journal of Clinical Psychology, 67(1), 99-110.

Lazarus, R. (1993). From Psychological Stress to the Emotions: A History of Changing Outlooks. Annual Review of Psychology, 44(1), 1-21. doi:10.1146/annurev.psych.44.1.1

Lazarus, R.S. (1966), *Psychological Stress and the Coping Process* ,NewYork: McGraw-Hill.

Le Fevre, M., Matheny, J., & Kolt, G. S. (2003). Eustress, distress, and interpretation in occupational stress. *Journal of Managerial Psychology*, *18*(7), 726-744. doi:10.1108/02683940310502412

Levenson, H. 1973. Multidimensional locus of control in psychiatric patients. *Journal of Consulting and Clinical Psychology 41*:397–404. Used with permission of the author.

Peterson, C., & Bossio, L. M. (2001). Optimism and physical well-being. *Optimism and Pessimism: Implications for theory, research, and practice* (pp.127-145). Washington, DC: American Psychological Association

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in multiple mediator models. *Behavior Research Methods, Instruments, and Computers, 37*, 717-731.

Roberts, R., Golding, J., Towell, T., Reid, S., Woodford, S., Vetere, A., & Weinreb, I. (2000). Mental and physical health in students: The role of economic circumstances. *British Journal of Health Psychology, 5*(3), 289-297. doi:10.1348/135910700168928

Rodríguez, I., Kozusznik, M. W., & Peiró, J. M. (2013). Valencia eustress-distress appraisal scale. *PsycTESTS Dataset*. doi:10.1037/t27744-000

Scheier, M. E. (1987). Dispositional Optimism and Physical Well-Being: The Influence of Generalized Outcome Expectancies on Health. *Journal of Personality, 55*(2), 169-210. doi:10.1111/j.1467-6494.1987.tb00434.x

Scheier, M. F., & Carver, C. S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research, 16*(2), 201-228. doi: 10.1007/bf01173489

Scheier, M. F., Weintraub, J. K., & Carver, C. S. (1986). Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology, 51*(6), 1257-1264. doi:10.1037//0022-3514.51.6.1257

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. Journal of Personality and Social Psychology, 67, 1063-1078.

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, Measures in health psychology: A user's portfolio. Causal and control beliefs (pp. 35-37). Windsor, UK: NFER-NELSON.

Selye, H. (1950). Stress and the General Adaptation Syndrome. *BMJ, 1*(4667), 1383-1392. doi:10.1136/bmj.1.4667.1383

Slade, M. (2010). Mental illness and well-being: the central importance of positive psychology and recovery approaches. *BMC Health Services Research, 10*(1). doi: 10.1186/1472-6963-10-26

Weinstein, N., & Ryan, R. M. (2011). A self-determination theory approach to understanding stress incursion and responses. *Stress and Health, 27*(1), 4-17. doi:10.1002/smi.1368

Zigmond, AS; Snaith, RP (1983). The hospital anxiety and depression scale. Acta Psychiatrica Scandinavica 67(*6*): 361–370. doi: 10.1111/j.1600 0447.1983.tb09716.x. PMID 6880820.