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ORIGINAL ARTICLE

Harmful and benign work stress and work resilience: A Delphi-study in employees and experts

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Delphi study

Abstract

Background and objectives: In this study, we introduce the concept of benign versus harmful work stress. Our objectives are to explore how to discern benign work stress from harmful work stress and to identify the factors that promote work resilience.

Methods: An online Delphi study with three rounds, incorporating open-ended questions and statements, was administered to mental health employees and experts. Statements were rated on a 7-point scale: an interquartile deviation (IQD ≤ 1) was considered as consensus.

Results: In the first round 20 employees and 14 experts were included, in the second round 87 employees and 35 experts, and in the third round 53 employees and nine experts. There was consensus about seven characteristics of harmful stress, eight of benign work stress, 24 individual factors that promote resilience, and eight team factors that promote resilience.

Conclusion: Consensus was achieved about factors relevant to benign versus harmful work stress and resilience at work

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Introduction

Work pressure and workplace stress are increasing worldwide in the working population.¹ In the Netherlands, more than one-third of employees mention work pressure or work

stress as a reason for absenteeism.² In 2017, work stress-related absenteeism costs for employers amounted to 2.8 billion euros in the Netherlands.² In the health and welfare sector, 44% of the employees experience high work pressure; with even 49% in the mental health care sector.³ The experienced work pressure in the mental health care sector may be related to the nature of the work itself, since mental health care professionals work with complex patients with severe mental health problems or addictions.⁴ Leadership

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style and employee satisfaction may also both be associated to work pressure and contribute to sickness absence.⁴ In addition, technological developments may result in work pressure as they promote teleworking, including working from home outside working hours on administrative tasks. This can threaten the balance between the working life and the private life and increase work pressure and work stress.^{5,6}

Work pressure is strongly associated with work-related stress or work stress. Work stress tests are commonly used nowadays.¹ Yet, so far none of them differentiates whether the work stress disturbs or rather enhances the work performance. Work stress can be associated with burnout, depressive and anxiety symptoms, physical symptoms, and decreased work productivity or sickness absence.^{7–9} We propose to refer to this negative kind of stress as malignant or ‘harmful’. On the other hand, work stress can also be experienced as a challenging circumstance inviting total focus on a task, that can result in active engagement and meeting the challenges that one faces at work^{10,11}; a kind of stress which can result in reward and which we propose to refer to as ‘benign’. We envision such benign stress as something that, contrary to harmful stress, should not be avoided.

Job strain, as in the case of harmful stress, is - according to the Job Demands-Resources model¹² - a result of the disturbance in the balance between the job demands and the job resources. Job demands are “*physical, social or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and/ or psychological costs (e.g. exhaustion)*”,¹³ for example emotionally demanding interactions with clients (the social aspect of the job) that result in exhaustion (psychological cost). Job demands, however, do not always have negative consequences; for instance when an employee has the resources to meet the demands. Job resources can be found in the task itself, in the organisation, and interpersonal and social relations. Job resources do not only help in dealing with job demands but also have the power to motivate employees on their own¹²; possibly resulting in the previously mentioned benign work stress.

Hence, there is a need to understand factors contributing to both forms of work stress and more importantly the characteristics of both forms of stress that can help us to measure them and to develop adequate preventive measures. For example, in the case of benign stress, no intervention might be needed, whereas in the case of harmful stress we need to intervene in an early stage to prevent further deterioration. Current efforts to prevent absenteeism primarily focus on employees who already have psychological symptoms^{14,15} and who may be absent from work and sick-listed. The Work Stress Questionnaire (WSQ), for instance, has been developed as a self-report questionnaire to detect persons who are at risk of being sick-listed due to work-related stress and is developed with input from persons who were sick-listed.^{16,17} However, the WSQ and other screeners such as the Four-Dimensional Symptoms Questionnaire (4DSQ) which measures distress, the Patient Health Questionnaire-9 (PHQ-9) screens for depression, and the General Anxiety Disorder -7 (GAD-7) screens for anxiety are not developed to discern benign from harmful work stress in

working employees. This underlines the need to further gain insight into the characteristics that discern harmful from benign work stress and to finetune the development of screeners in this field, especially those which can discern harmful from benign work stress.

Another relevant aspect is that the impact of resilience on work stress is understudied and the term is often used concerning an outcome, and not as a predictor of work stress. For example, a systematic review showed that resilience amongst health care workers often is defined as the ability to keep working in stressful circumstances and showed inconsistencies between personal and work-related outcomes and a variety of questionnaires.¹⁸ We propose that resilience can be seen as the pre-existing ability to deal with work stress, which may be explored to see how to possibly improve that, both at an individual level and at the team level. There is a need to explore factors relevant to that, which this study aims to do.

Objectives

Hence, the objectives of the present study are first, to explore how to discern benign work stress from harmful work stress, from an employee perspective, and the perspective of experts in this field. Second, to gain insight into factors that promote work resilience in employees and teams.

Methods

The Delphi method

A Delphi study incorporates qualitative and quantitative methods in multiple rounds of surveys administered consecutively to a panel of experts.¹⁹ The Delphi approach usually starts with qualitative methods using open-ended questions in the first round, the so-called brainstorm round; the input gathered from this is then used to develop a closed-ended second-round questionnaire, which is used to assess the level of consensus among a larger group of participants (quantitative method). The Delphi method has been successful in providing insight into (mental) health-related issues.^{20–22} In the present study, we used a Delphi approach with three online survey rounds to identify characteristics of harmful work stress, characteristics of benign work stress, and factors that promote resilience at the workplace among working employees in the mental health care sector.

Research setting and panel composition

The study was conducted among employees working at a specialised mental health care institute (SMHI) in the Netherlands and amongst (inter) national experts in the fieldwork stress. The SMHI in question has about 1500 employees and two hundred volunteers; care is provided to about 18.345 clients annually. To invite employees, a random sample of employees was supplied by the HR department of the participating SMHI. Experts were identified via the network of the research team and publications on work-related stress; also,

experts collaborating in the Tranzo Academic network of work and Health (Tilburg University) were invited. The experts were also asked to name other experts from their network. Moreover, we invited clinicians working in the occupational setting. Employees filled out the questionnaire anonymously, and experts were known to the research group and had the opportunity to fill out whether they want to be mentioned in the 'acknowledgments' section of this manuscript.

Questionnaires

The first round included an online questionnaire to assess demographic and work-related questions. Then harmful stress was defined broadly as *'a negative form of stress that can cause physical or mental pain or suffering'*. Benign stress was defined as *'a form of stress that we experience as positive. This is a form of stress that motivates, energizes and helps to function better'*. Participants, employees and experts, were asked to give their thoughts on how harmful work stress can best be distinguished from benign stress and which factors promote resilience in the case of work stress. We used an inductive method with open-ended questions and general definitions of harmful and benign works stress. The input from the first round was used for the online questionnaire of the second round. As some factors that were mentioned by the respondents in round 1, such as increased heart rate, were mentioned by respondents as characteristics of both harmful as well as benign work stress, we presented all identified factors in the second round and asked participants to indicate whether the factor was according to them mainly a characteristic of harmful stress, or benign stress, or of both or neither. A top 20 characteristics was made for characteristics of benign stress and harmful stress, based upon the input of the employees as well as the experts. In the third round, the consensus was assessed regarding the characteristics.

Analyses

The first round included open-ended questions. The answers given were coded into factors by two (assistant) researchers and a third researcher in case of discrepancies. In the second and third rounds, descriptive analyses were conducted to gain insight into the demographic characteristics of the sample of participants. Median scores and interquartile deviations (IQDs) were calculated to gain insight into whether the participants agree with the statement and what the level of consensus is. The IQD is the distance between the 25th and the 75^e percentiles, with a value of 1 or smaller indicating consensus on a 7-point scale.²³ A small value between those percentiles means a small data spread. An IQD of ≤ 1 on a 7-point scale is considered to be a good consensus.²³ Median scores of ≥ 5 indicate agreement, 4 is neutral and a score of ≤ 3 indicates disagreement. The screeners were formed by including factors on which consensus was reached; translating them into factors that can be checked on the list by a professional or the employee him/herself. The sample of experts and employees were merged in the consensus analyses regarding characteristics of benign and harmful stress and the factors

associated with resilience at work. The study was supported by WEBROPOL 2.0 software for questionnaire development and data gathering.²⁴ The number of rounds was set in advance (three rounds), therefore we did not conduct analyses to assess the stability of the results and decide on when to terminate the study.²⁵

Results

Sample characteristics

In the first round, 20 employees and 14 experts were included. In the second round, 87 employees and 35 experts were included. In the third round, 53 employees and 9 experts were included. Experts were, among others, professors and researchers in the field of organizational and occupational psychology and burnout and occupational physicians. Fig. 1 shows a flowchart with the inclusion and participation of respondents. Table 1 shows the characteristics in terms of gender and age per round.

Characteristics of harmful and benign work stress

The first round yielded 51 characteristics of harmful and benign work stress, such as positive energy, enthusiasm, fear, malfunctioning, and increased heart rate. The top 20 characteristics of harmful stress, and the top 15 for benign stress, for which there were no more, were included in the third round. These characteristics are presented in Table 2. The factors on which consensus was reached were indicated by an IQD of 1 or smaller. *Factors that promote resilience in the case of work pressure.*

The study yielded information on factors that are considered resilience-promoting factors in employees experiencing work stress as shown in Table 3. The factors on which consensus was reached were indicated with an IQD of 1 or smaller. Factors were general positive personal factors such as optimism and ability to cope; work-related factors such as work pleasure, and team factors such as work guidance.

Discussion

In this study, seven characteristics of harmful stress that included several psychological symptoms such as anxiety, sleep problems, reduced job satisfaction, and general negative feelings, were identified. This supports previous findings which indicated that work-related stress can have psychological consequences and result in sleep disturbances.²⁶ Also, the Expertise Centre of the Labor inspection in the Netherlands assesses workload that relates to the items we included in the harmful stress section, e.g. negative feelings and avoidance.²⁷

Our study identified eight characteristics of benign work stress. The items categorized as "benign stress" appear to reflect responses to stress or indicators of resilience (e.g., good concentration, optimism, hope, cheerfulness). The finding regarding hope and optimism about the future is in line with previous work which pointed out that hope is an outcome of experiencing

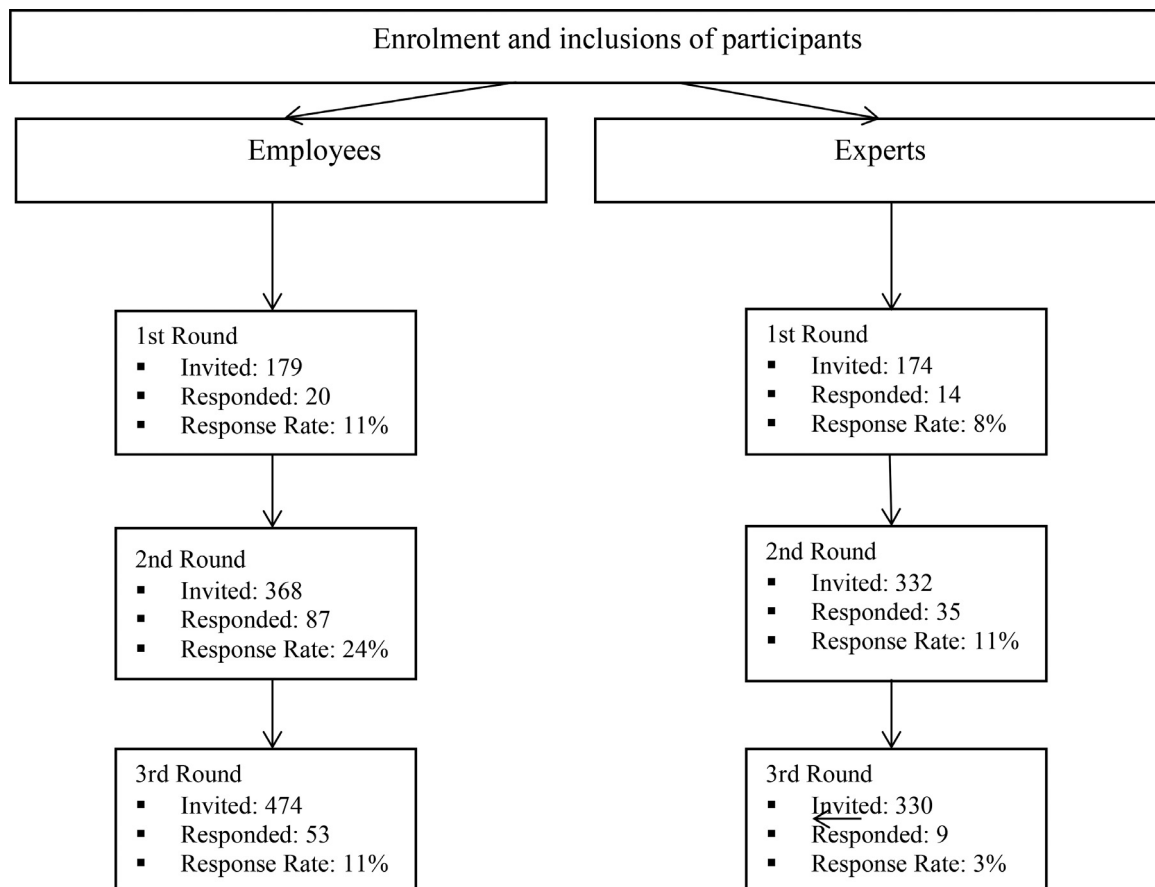


Fig. 1 Enrolment and inclusion of employees and experts in the three rounds of the study.

Table 1 Sample characteristics per round for employees and experts.

	Employees			Experts		
	R1 (N=20)	R2 (N=87)	R3 (N=53)	R1 (N=14)	R2 (N=35)	R3 (N=9)
Gender (female)	17 (85%)	69 (79,3)	43 (81.1%)	8 (57.1%)	19 (54,3%)	3 (33.3%)
Age (in years)	39 (14,18)	44 (12,97)	47 (10.51)	48 (7,95)	50 (11,82)	52 (14.26)

positive stress.^{28,29} Snyder's Hope Theory suggests that stressors are perceived as motivating challenges for reaching goals by people who have a high level of hope,³⁰ indicating that having hope may also result in perceiving stressors as positive. Healthy workload (being positively challenged), motivation, good concentration, hope, optimism about the future, being able to function well or better, cheerfulness and dedication were pointed out as characteristics of benign work stress.

There seems to be little research on most factors that were derived from the present study. This underlines the importance of assessing the characteristics of benign work stress from the perspective of employees themselves, especially in the mental health care setting where workload is experienced as high.

Many factors – such as good coping strategies - were identified as relating to resilience, and a striking finding was that a substantial amount of factors concerned resilience as experienced at the team level by the employee although there

was no specific attention to team factors in the questioning. The factors identified in this study - such as reduced job satisfaction as a characteristic of harmful stress and coping mechanism as a factor that promotes resilience - also relate to burn-out.³¹ Yet, effective systematic preventive measures for burn-out are still not available³¹ and this may have to do with issues to identify employees who systematically are at risk. The identification of harmful stress, benign stress, and resilience in the work setting may help us to provide tools to design preventive measures. The present study used the terms benign and harmful stress, while some other studies use eustress and distress, respectively. These terms were used because according to us distress in the workplace can be part of benign stress as a feeling, yet, it does not have to have a harmful effect. However, harmful stress in the workplace is thought to have particular consequences that do not always occur in distress. In other words, distress is a generally occurring feeling, and a subset of distress experienced in the workplace may be experienced as harmful.

Table 2 Consensus measurements on factors that are related to benign and harmful stress.

Please indicate - on a 7-point scale - whether you agree with the statement that the factor mentioned is especially a characteristic of

..... *positive work-related stress, and less negative stress*

	N	Mdn	IQD
Factors on which consensus was reached			
1. Motivation	61	6	0
2. Healthy workload	62	6	1
3. Good concentration	62	6	1
4. Optimism, including trust in good ending, hope	62	6	1
6. Good / better functioning	62	6	1
6. Cheerfulness	61	6	1
7. Commitment	62	6	1
Factors on which consensus was not reached			
8. Is short-term/has short-term effects	62	4	1.25
9. Positive energy	62	6	2
10. Enthusiasm	62	6	2
11. Sense of satisfaction	62	6	2
12. Feeling challenged	62	6	2
13. Having time to relax	62	5.5	2
14. Alertness	62	6	2
15. Arousal	61	5	2

..... *negative work-related stress, and less of positive stress*

	N	Mdn	IQD
Factors on which consensus was reached			
1. Reduced job satisfaction	62	6	1
2. Fear	62	6	1
3. General negativity	62	6	1
4. Hopelessness	61	5	1
5. Avoidance behaviour	61	6	1
6. Less/ decreased patience	62	5	1
7. Dependent behaviour	61	4	1
Factors on which consensus was not reached			
8. Concentration problems	62	5	1.25
9. Sleep problems	62	6	1.25
10. Hindering effects	60	6	1.75
11. Irritability / bad mood	62	6	2
12. Psychological complaints	62	5	2
13. Malfunctioning	62	6	2
14. Nausea	61	5	2
15. Sick leave/absenteeism	62	5	2
16. Slow information processing	61	5	2
17. Pain (e.g. headache, stomach ache)	62	5	2
18. Physical complaints (e.g. dermatological problems, pain, etc)	60	5	2
19. Forgetfulness	61	5	2
20. Trembling	61	5	3

Limitations

The main limitation of the study is that expert participation in the third round was low, with only nine experts (response rate: 3%) participating in the third round with experts. However, in the second round, 35 experts participated and results from both expert groups were merged to gain insight into the results of all participants. Another limitation of the study is the homogeneity of the sample of employee respondents, comprised of

mental health professionals who all work at the same institution. Hence the generalisability of the findings to other workplace settings is unknown.

Strengths

We can also identify some strengths in our survey. First, this is the first study introducing the concept of benign versus harmful work stress whilst specifically exploring aspects of both that might be relevant to include in a questionnaire. It

Table 3 Consensus measurements on factors that promote resilience in the case of work-related stress.

	N	Mdn	IQD
Factors on which consensus was reached			
Allowing yourself to make mistakes	122	6	0
Motivation	62	6	0.25
Perseverance	121	6	0.50
Optimism	60	6	1
Self-efficacy (trusting ability to overcome barriers)	60	6	1
Being assertive	62	6	1
Feeling safe	60	6	1
Being well-rested (not tired)	122	6	1
Good team spirit (including understanding, and good cooperation) *	122	6	1
Positive stress / challenge*	122	6	1
Good private-work balance	122	6	1
Humour*	122	6	1
Sufficient work guidance*	122	6	1
Sufficient time*	122	6	1
Appreciation*	122	6	1
Opportunity for asking for help	122	6	1
Being solution-focused	122	6	1
To have a sense of relativity	122	6	1
Sense of responsibility	122	6	1
Patience	122	6	1
Good coping strategies	122	6	1
Self-confidence	122	6	1
Setting limits	122	6	1
Being flexible	122	6	1
Having a sense of control	121	6	1
Work pleasure	122	7	1
Feeling well in general	122	6	1
Have enough sleep	122	6	1
Being healthy in general	122	6	1
Clarity and structure about tasks*	122	6	1
Working according to a plan	122	6	1
Having understanding of colleagues*	122	6	1
Factors on which consensus was not reached			
Hope	61	6	2
Perfectionism	60	4	2
Work engagement	62	6	2
Expectations from others	122	5	2
Feeling guilty	122	3	2

* These factors are team related.

is also a strength of the study that employees and experts reached a consensus on those aspects for a clear set of variables, which suggests that this may be a viable concept to work within the occupational setting. Another strength is the innovative exploration of resilience at work resulting in consensus about factors relevant both to individual and team resilience.

Practical implications

The items identified can be used to develop new questionnaires to discern benign from harmful work stress in working employees, to further foster the positive effects in the case that benign work stress is experienced and to intervene early when especially characteristics of harmful work stress are present.

Research implications

The factors identified will be used to develop a Work Stress Screener (WoSS) and a Work Resilience Screener (ReWoS). They should discern benign from harmful work stress, and assess workplace resilience at individual and at the team level. Future research will address the validation of the Work Stress Screener (WoSS) and the Work Resilience Screener (ReWoS).³² Furthermore, it would be of interest to assess the occurrence of benign and harmful work stress among employees to further gain insight into the consequences of both forms of stress. This might shed light on how burnout can develop, and the concept of burnout about benign and harmful work stress. A further step would then be to develop an intervention that can further foster the positive effects of benign work

stress and diminish the negative effects of harmful stress.

Author contributions

Iman Elfeddali (IE) and Christina van der Feltz-Cornelis (CFC) acquired funding for the study, IE as the main applicant. CFC facilitated and supervised the conduct of the study.

IE and CFC designed the study, the Delphi surveys, and the analysis. Evy Jacobs (EJ) participated in the larger Delphi project of which this study was part. IE and CFC approached experts for the study. IE and CFC analysed the Delphi survey results, EJ assembled the Tables. IE had contact with stakeholders for feedback. CFC and IE developed the Work Stress Screener (WoSS) and the Work Resilience Screener (ReWoS). IE wrote the first draft of the manuscript. IE, CFC, and EJ all contributed to the process of drafting and all approved the final version of the paper.

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Ethical considerations

Ethical approval is obtained from the Ethical Review Board of GGz Breburg (number: CWO2020-27), in the Netherlands. Moreover, The study was approved by the Board of directors and by the Works Council (a workforce of employees that discuss the needs of employees with the employer).

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Additional data

No additional data is available.

Conflict of interest

The authors have no conflicts of interest to declare.

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