Team strategies for coping with time pressure

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Abstract

Most employees experience at least some phases of time pressure in their daily work. However, nearly all previous research has focused on the individual strategies for coping with such pressure, and little is known about the joint strategies applied by teams. The present study addresses this research gap with a newly developed instrument designed to measure team strategies for coping with time pressure.

A qualitative pilot study explored which strategies teams apply in order to jointly cope with time pressure. Findings were used to develop a questionnaire that was tested in a quantitative study (N = 281). Results of explorative factor analyses and reliability analyses led to 12 scales for assessing joint team strategies for coping with time pressure. The two strategies *Clarifying demands* and *Setting priorities* had a buffering effect on the relation between time pressure and exhaustion. Pre-post measurements of a 2-hour pilot intervention in five teams (N = 45) indicated that such short interventions can contribute to a focused improvement in individual team strategies.

Keywords

Time pressure – stress – health – coping – joint strategies

1 Relevance of time pressure[1]

When reviewing research on chronic time pressure, Szollos (2009) concluded that a shortage of time is one of the most ubiquitous experiences in modern society with more and more people feeling rushed and harassed while claiming that they never have enough time to complete everything they need to do. Surveys reveal that the majority of employees in Europe report being subject to time pressure for at least one-quarter of their working hours (Lohmann-Haislah, 2012; van Veldhoven, 2014). Hence, time pressure is a widespread stressor indicating that not enough time is available to get through the existing workload and deliver a service of the quality expected. One cause of this is considered to be chronic understaffing in companies (Hudson & Shen, 2015).

Meta-analyses on the relations between time pressure and psychosomatic complaints confirm the relevance of time pressure to health with longitudinal studies suggesting a causal effect of time pressure on illness (Bowling, Alarcon, Bragg & Hartman, 2015; Nixon, Mazzola, Bauer, Krueger & Spector, 2011; Rau & Buyken, 2015; Rau & Henkel, 2013).

Such negative effects on health may emerge particularly when it is impossible to apply appropriate coping strategies for the given situation (Zapf & Semmer, 2004). If a stressor such as time pressure can be influenced, then problem-oriented or active strategies are the ones to be preferred (Carver, 2014; Dewe, O'Driscoll & Cooper, 2010). Employees should have the broadest possible range of strategies at their disposal that should not only enable optimal work performance in the short term but also consider the impact on the individual's health (Semmer, Grebner & Elfering, 2010; Skinner, Edge, Altman & Sherwood, 2003). Applying rigid and inflexible coping patterns in contrast is considered to increase the risk of stress and health disorders becoming chronic (Schulz, 2005).

[1] This article is based on a German-language article by Schwendener, Berset, and Krause (2017). We thank Hogrefe publishers for permission to translate this revised version.

1.1 From individual to joint coping strategies

Recent decades have seen a great deal of intensive research on coping with stress individually, and much important knowledge has been acquired. However, Folkman and Moskowitz (2004) consider that up to now, studies have only scratched the surface of the phenomenon. They maintain that coping with stress cannot be viewed in isolation: „It is embedded in a complex, dynamic stress process that involves the person, the environment, and the relationship between them“ (p. 748). This environment also includes the person's social world. Indeed, criticism of the focus on purely individual coping with stress has become increasingly widespread (Mickelson, Lyons, Sullivan & Coyne, 2001). It is becoming more and more evident that models of individualistic coping with stress allow only a limited view of the potentially very broad and multifaceted spectrum of coping strategies, and this is particularly revealing the need to focus on the *joint* strategies that people use to cope with stress (Hobfoll & Buchwald, 2004).

Peiró (2008) has criticized that analyses of stress in organizations pay insufficient attention to the complex interplay of stress phenomena across the various levels of an organization. Researchers frequently fail to consider stress-related phenomena on the department and team levels, such as how stress experiences are shared with other employees. Team members presumably experience similar emotions and also initiate joint strategies to cope with their stress-particularly in teams responsible for carrying out joint tasks (Busch, Deci & Laackmann, 2013; Pearsall, Ellis & Stein, 2009) whose members identify with their team and share a joint social identity (Schuh, van Dick, Wegge & Haslam, 2013). Hence, coping with stress should not just be viewed as an individual but also as a joint phenomenon (Peiró, 2008). In a study of how members of a team coped with stress at work together, Länsisalmi, Peiró, and Kivimäki (2000) found that work overload is experienced as a joint stressor and that the feeling of being harassed and rushed is shared. They found that this led team members to engage in fewer tension-relieving practices, such as informal conversations even after work. Moreover, the collective commitment and the resulting social pressure led team members to take hardly any more breaks out of fear of letting down their colleagues. The authors also found an increase in work at the weekend and a resulting lack of time for recuperation.

The available instruments for measuring joint coping strategies assess how people deal with private life events (e.g., Gmelch et al., 2008) or stress at work in general terms (e.g., Muhonen & Torkelson, 2008). Until now, no instrument has been available that could be used to assess the joint strategies that teams use to cope with the specific stressor of time pressure.

Our studies aimed to identify a broad range of joint strategies for coping with time pressure that are actually applied in everyday work (qualitative pilot study) and to use this information as the basis for developing an instrument to measure these strategies reliably (quantitative main study). We also wanted to clarify which strategies for coping with time pressure can be classified as being beneficial to health. Finally, we wanted to know whether a 2-hour intervention would promote changes in the application of team strategies (pilot intervention).

1.2 Identifying joint coping strategies in a qualitative pilot study

We used a combination of different approaches to identify strategies applied by teams: First, we inspected the protocols of workshops (document analysis) that had been run during projects in software and industrial companies (Krause, 2014; Krause & Deufel, 2011). During these workshops, we had collected information on which explicit activities and strategies teams had applied to cope with time pressure. Second, we searched for team strategies to cope with time pressure in empirical studies (e.g., Länsisalmi et al., 2000; Torkelson, Muhonen & Peiró, 2007). We then used Mayring's (2015) summarizing content analysis approach to group the strategies identified in the document analysis and literature search in terms of similarity of content, and we assigned an appropriate label to each resulting category. Finally, to further extend the list of strategies, we carried out two 90-minute, five-person group discussions and three individual 45-minute interviews based on Flanagan's (1954) critical incident technique (CIT). One of the groups contained employees in a telecommunication company; the other, individuals from different areas of the service industry sector. According to Dewe and Trenberth (2004), CIT can be used to identify which coping strategies people apply. After being introduced to the topic, participants were encouraged to describe a situation in which they and their colleagues were under time pressure at their workplace. They had to report why they had been under time pressure, in what ways they had noticed this, and what they had actually done together with other members of their team to enable them to reduce the time pressure (either in the current situation or for the future). By also asking participants about coping with the specific stressor of time pressure, we could also check the content validity of the activities and strategies found in the various approaches. We assigned the activities gathered in the document analysis, literature search, the CIT workshops, and the CIT interviews to 21 categories of team strategies for coping with time pressure. Examples are „*Refusing tasks*: refusing them

in order to avoid acute or future time pressure; clarifying whether this is allowed, and negotiating rules for refusal"; „*Work climate*: promoting a good work climate despite the stressful situation"; or „*Setting priorities*: determining together what is most important, for example, regarding deadlines for completing tasks or the sequence in which they are processed". The next step was to formulate items for these categories that would be closely oriented toward the concrete terminology found in, for example, the group discussions.

We derived a total of 116 items. These were formulated in „we" terms because we aimed to assess joint strategies (Klein, Buhl Conn, Smith & Speer Sorra, 2001; Pearsall et al., 2009; Requa-Brückner, 2010). We pretested their comprehensibility in cognitive interviews with four persons (Prüfer & Rexroth, 2005). This led to some items being deleted, others items being formulated more simply, and items on the frequency scales being supplemented with the response category „*does not apply*". This reduced the number of items from 116 to 89.[2]

1.3 Active and active self-endangering strategies

Although individuals applied both active (e.g., *Setting priorities*) and emotion-oriented strategies (e.g., *Relaxation exercises*) to cope with time pressure, the qualitative pilot study revealed a dominance of active strategies with teams clearly reporting almost exclusively active strategies for coping with time pressure. When classifying coping strategies, Skinner et al. (2003) recommended paying more attention to how far these active strategies have primarily positive or negative effects on actors. From the perspective of work and organizational psychology, this concerns the differentiation of potentially health-promoting versus health-impairing active strategies. Health-promoting active team strategies (such as *Clarifying tasks or orders*) aim to avoid or reduce time pressure while taking the limited resources of the team members into account. In contrast, health-impairing strategies (e.g., *Going without and shortening breaks* or *Reducing quality*), as an active way of reducing the workload and time pressure, do not consider and take account of the limited personal performance capacity of team members. Making a mutual team decision to go without breaks or to lower the quality of their work has both physical and psychological costs (Semmer et al., 2010). Dropping breaks reduces the time available for necessary regeneration and can contribute to an intensification of work (Rau, 2012). According to Semmer et al. (2010), reducing quality because of time constraints and insufficient working hours has major psychological costs, with lower quality being interpreted by both others (e.g., customers) and the employees themselves as a failure and a sign of incompetence. If health-impairing behaviors such as going without breaks are not ordered by management directly but are chosen by the employees themselves in order to cope with the pressure of a situation, this can be characterized as self-endangering behavior (Chevalier & Kaluza, 2015; Krause et al., 2015; Peters, 2011). Correspondingly, we distinguished between active (e.g., setting joint priorities and making long-term plans) and active-self-endangering (e.g., reducing quality and dropping breaks) team strategies.

2 Quantitative main study

2.1 Research question and hypotheses

As well as testing our newly developed questionnaire in the main study, we also wanted to know whether the strategies applied by teams influence the relation between time pressure and exhaustion. Therefore, we tested the following hypotheses:

> ***Hypothesis 1:*** *Higher time pressure will be accompanied by higher exhaustion.*
>
> ***Hypothesis 2:*** *Active strategies will buffer the relation between time pressure and exhaustion.*
>
> ***Hypothesis 3:*** *Active-self-endangering strategies will reinforce the effect of time pressure on exhaustion.*

2.2 Method

Sample

Data were gathered with an online questionnaire sent to German-speaking associations and networks (e.g., BGMnetzwerk.ch) asking them to forward it to their members. It was also distributed across several groups (e.g., human resources professionals) in the German-language Xing network in order to access persons from different branches and companies. Cases with missing values (103 cases and less than 30 % of the sample) were dropped from the dataset (Wirtz, 2004). This left data from 281 persons for the statistical analyses. Members of the sample came from different branches with the strongest representation for health and social services (36 %) followed by banking and insurance

[2] The complete list of items is available from the authors on request.

(11 %) and public administration (11 %). Women were overrepresented at 58 %. The mean age of respondents was just below 43 years. The average team size was 8.4 persons but the range was very broad (2-40). According to their work contracts, respondents reported working an average of 37 hours per week. The workload ranged from very low (11 hours) to very high (65 hours).

Assessment instruments

Demographics. We asked respondents to report their age, gender, and workload (in hours per week).

Team strategies. We assessed team strategies for coping with time pressure with the 89 newly formulated items. Answers were given on 5-point scales assessing either agreement, ranging from *does not apply at all* (1) to *applies in full* (5); or *frequency*, ranging from *hardly ever / never* (1) to *very often / continuously* (5). The scale instructions or the items themselves emphasized that respondents should report what they had done to cope with time pressure during the last 6 months. A sample item for the strategy *Setting priorities* is „Please recall the phases during the last 6 months when you had to face a lot of time pressure. During these phases, did you and your team jointly reach a clear decision on prioritizing the concerns of the customers / clients / patients?"

Time pressure. This was assessed with five items taken from the long version of the quantitative demands scale in the German-language adaptation of the Copenhagen Burnout Inventory (CBI; Kristensen, Hannerz, Høgh & Borg, 2005; German adaptation: Nübling, Stössel, Hasselhorn, Michaelis & Hofmann, 2005). Cronbach's α was .83. Here as well, responses were given on 5-point scales ranging from *hardly ever / never* (1) to *always* (5).

Exhaustion. This was assessed with four items taken from the personal burnout scale in the German-language adaptation of the Copenhagen Burnout Inventory (CBI; Kristensen et al., 2005; German adaptation: Nübling et al., 2005). Cronbach's α was .89. Responses were given on 5-point scales ranging from *hardly ever / never* (1) to *always* (5).

Team meetings. Finally, we also asked whether the team holds regular meetings, and if so, how frequent these are. Responses were given on a 5-point scale with the points *daily*, *weekly*, *every two weeks*, *monthly*, and *less frequently.*

Analysis methods

All statistical analyses were performed with SPSS 21.

Explorative factor analysis. Because this was a newly developed scale, we assessed its construct validity by examining the factor structure with an explorative factor analysis. We performed a principal-axis factor analysis because we wanted to explain the correlations between items with as few factors as possible. We determined the optimal number of factors to extract with the minimum average partial (MAP) test (O'Connor, 2000), and performed the factor analysis accordingly. We applied a direct oblimin rotation method (Field, 2009). Preconditions for the analysis were a Kaiser-Meyer-Olkin (KMO) coefficient > .50 and a significant Bartlett test of sphericity (Bühner, 2011). When selecting items, we focused initially on the communalities. We excluded items with communalities < .40 (Bühner, 2011) one by one, retaining only two items with values just below .40 because we rated their content as being highly significant for the team strategy being assessed. We also checked the factor loadings and eliminated items with loadings < .40.

In addition, we performed descriptive analyses (means and standard deviations) and reliability analyses. We took item-total correlations > .30 (Weiber & Mühlhaus, 2010) and Cronbach's $\alpha \geq .70$ (Nunnally & Bernstein, 1994) as sufficient.

Moderated regressions. We calculated interactions with hierarchically moderated regressions. In a first step, we introduced time pressure and one strategy at a time as predictors (main effects); and, in a second step, their product (interaction). Both predictors were centered on their means (Dawson, 2014).

2.3 Results

Scale analysis

The final factor loadings from the explorative factor analysis are reported in Table 1. Table 2 presents descriptive statistics, reliabilities, and item-total correlations. Our instrument to assess team strategies for coping with time pressure contained 12 scales[5] (Table 2) with 41 items (see Appendix 1). Of these 12 scales, 9 were characterized as active team strategies and the 3 scales at the bottom of Table 2 as active-self-endangering team strategies.

[5] Seven scales ascertained in the factor analysis corresponded exactly with seven of the original categories in the qualitative pilot study. Five scales resulted from new classifications. For example, the original category of Emotional support was divided into Tolerating mistakes and Receiving back up from superior.

Table 1: Result of explorative factor analysis: Factor loadings > .40 for the remaining items on the strategy scales.

	1	2	3	4	5	6	7	8	9	10	11	12
LTP1	.57											
LTP2	.61											
LTP3	.87											
LTP4	.80											
LTP5	.72											
RQ1		.56										
RQ2		.66										
RQ3		.87										
RQ4		.77										
GWB1			.93									
GWB2			.75									
GWB3			.59									
IW1				.77								
IW2				.82								
IW3				.67								
RBS1					.88							
RBS2					.86							
RBS3					.43							
IE1						.72						
IE2						.83						
IE3						.69						
IE4						.63						
HM1							.74					
HM2							.72					
HM3							.69					
HM4							.59					
HM5							.58					
RT1								.88				
RT2								.87				
TM1									.95			
TM2									.80			
SP1										.66		
SP2										.87		
SP3										.79		
HD1											.43	
HD2											.96	
HD3											.85	
CD1												.70
CD2												.63
CD3												.72
CD4												.66

Notes: LTP = Long-term planning; RQ = Reducing quality; GWB = Going without and shortening breaks; IW = Intensifying work; RBS = Receiving back up from superior; IE = Increasing efficiency; HM = Handling meetings; RT = Refusing tasks; TM = Tolerating mistakes; SP = Setting priorities; HD = Handling deadlines; CD = Clarifying demands.

Table 2: Descriptive statistics and reliabilities for the strategy scales after factor analysis and item selection.

Scale	Number of items	M (SD)	α	r_{it}
Active strategies				
Clarifying demands (CD)	4	3.01 (0.98)	.84	.59-.74
Refusing tasks (RT)	2	2.18 (1.04)	.90	.81
Increasing efficiency (IE)	4	2.84 (1.02)	.87	.69-.74
Long-term planning (LTP)	5	3.15 (1.05)	.88	.63-.78
Setting priorities (SP)	3	3.34 (1.06)	.89	.72-.86
Receiving back up from superior (RBS)	3	2.95 (1.02)	.83	.53-.77
Tolerating mistakes (TM)	2	2.87 (0.95)	.87	.76
Handling deadlines (HD)	3	2.73 (0.86)	.81	.49-.78
Handling meetings (HM)	5	3.76 (0.82)	.82	.56-.65
Active self-endangering strategies				
Intensifying work (IW)	3	3.88 (0.84)	.80	.43-.61
Reducing quality (RQ)	4	2.28 (0.81)	.80	.52-.70
Going without and shortening breaks (GWB)	3	2.96 (1.04)	.78	.53-.73

Notes: N = 222-281 (variations in scales with frequency responses because the response option does not apply was entered as missing value); 5-point Likert scale from does not apply at all (1) to applies in full (5) or hardly ever / never (1) to very often / continuously (5); r_{it} = item–total correlation.

Scale reliabilities (Cronbach's α) ranged from .78 to .90 (see Table 2). With the exception of Item HD3 (*Handling deadlines* scale) and Item RQ1 (*Reducing quality* scale), all items had communalities ≥ .40, factor loadings ≥ .40 (see Table 1), and item-total correlations ≥ .40 (see Table 2).

Relations between time pressure, team strategies, and exhaustion

As expected, we could confirm Hypothesis 1: There was a clear relation between time pressure and exhaustion ($r = .4$, $p \leq .01$). This main effect was also statistically significant in the regression analyses (Table 3).

Table 4 reports the scale intercorrelations. Time pressure related positively with the three active-self-endangering strategies and negatively with *Clarifying demands*. Exhaustion related negatively with six of the nine active strategies and positively with all three active-self-endangering strategies. These relations between team strategies and exhaustion were independent from the frequency of team meetings.

Interactions

The moderated hierarchic regression analyses only partially confirmed Hypothesis 2 and did not confirm Hypothesis 3. Only the two strategies *Clarifying demands* and *Setting priorities* had a moderating function (see Table 3 and Figures 1 and 2). Both strategies buffered the negative effect of time pressure on exhaustion (Figures 1 and 2).

Table 3: Intercorrelations between strategies and correlations with exhaustion and time pressure.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Clarifying demands	1												
2. Refusing tasks	.04	1											
3. Increasing efficiency	.52**	.12*	1										
4. Long-term planning	.40**	.23**	.44**	1									
5. Setting priorities	.43**	.16**	.43**	.48**	1								
6. Receiving back up from superior	.36**	.21**	.27**	.32**	.33**	1							
7. Tolerating mistakes	.17**	.10	.16**	.15*	.18**	.28**	1						
8. Handling deadlines	.17**	.37**	.12*	.22**	.24**	.36**	.16*	1					
9. Handling meetings	.36**	.05	.29**	.39**	.28**	.18**	.03	.06	1				
10. Intensifying work	-.04	-.02	-.19**	-.11	-.20**	-.06	-.03	-.02	-.08	1			
11. Reducing quality	-.07	.17**	-.11	-.05	-.11	.00	.19**	.18**	.13*	.06	1		
12. Going without/ shortening breaks	-.09	.04	-.13*	-.13*	-.09	-.11	-.13	.03	-.04	.13*	.11	1	
13. Exhaustion	-.18**	-.01	-.20**	-.19**	-.19**	-.22**	.01	-.01	-.23**	.20**	.24**	.21**	1
14. Time pressure	-.18**	.03	-.08	-.06	-.09	-.03	.11	.05	-0.5	.26**	.19**	.19**	.40**

*Notes: N = 205-281 (pairwise deletion); Pearson product-moment correlations; *p ≤ .05, **p ≤ .01 (two-tailed).*

Table 4: Results of the moderated regression analyses with the strategies Clarifying demands and Setting priorities as moderators and exhaustion as dependent variable.

		B	SE B	β	R^2/Δ R^2
1	Time pressure	.46	.08	.36**	
	Clarifying demands	-.10	.05	-.12*	.15**
2	Time pressure	.50	.07	.36**	
	Clarifying demands	-.10	.05	-.12	
	Time pressure x Clarifying demands	-.16	.06	-.14*	.02*
1	Time pressure	.48	.07	.38**	
	Setting priorities	-.13	.04	-.16**	.18**
2	Time pressure	.49	.07	.39**	
	Setting priorities	-.12	.04	-.16**	
	Time pressure x Setting priorities	-.20	.06	-.18**	.03**

*Notes: Time pressure and Clarifying demands were centered on their means; β = standardized regression coefficient; N = 258 (Clarifying demands); N = 280 (Setting priorities); *p ≤ .05, **p ≤ .01 (two-tailed).*

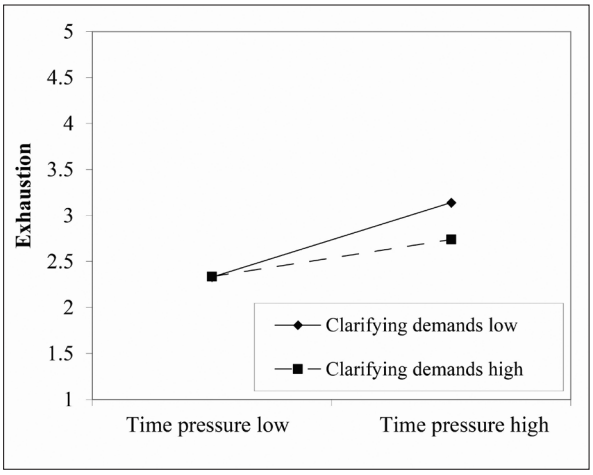

Figure 1: The significant interaction effect from Table 3 with the strategy Clarifying demands as moderator and exhaustion as dependent variable.

Notes: N = 280; exhaustion scale ranging from hardly ever / never (1) to always (5); Clarifying demands scale ranging from hardly ever / never (1) to very often / continuously (5); time pressure high or low = - / + 1 SD.

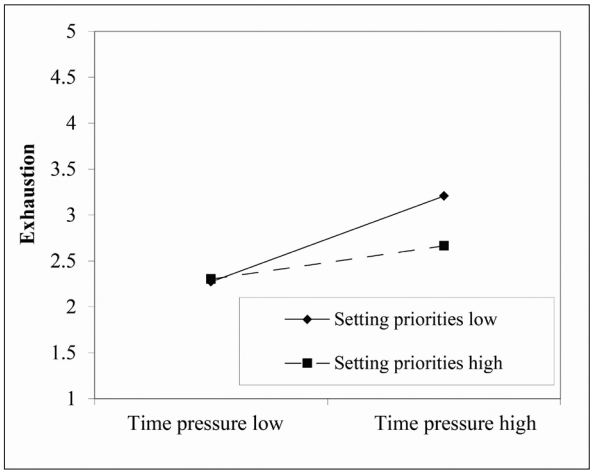

Figure 2: The significant interaction effect from Table 3 with the strategy Setting priorities as moderator and exhaustion as dependent variable.

Notes: N = 258; exhaustion scale ranging from hardly ever / never (1) to always (5); Setting priorities scale ranging from hardly ever / never (1) to very often / continuously (5); time pressure high or low = - / + 1SD.

3 Pilot intervention

3.1 Hypothesis

The pilot intervention explored how far a 2-hour team workshop would suffice to initiate changes in team strategies.

Hypothesis 4: A team intervention will improve the application of those team strategies that have been selected and worked on during the intervention.

Five teams working at one branch of a company within the financial services sector participated in an intervention designed specifically to promote team strategies. The intervention was structured as follows: First, an online stocktaking was performed on which joint strategies the teams were applying already. Thanks to the online procedure, all team members could participate independently from each other. Second, we gave feedback on the results of this stocktaking so that teams could select single strategies to work on during a 2-hour workshop and decide which measures they wanted to go on to apply by themselves in the following weeks. We gave this feedback on a poster presenting an overview on all team strategies and showing how frequently each strategy was applied by the team (x-axis) and how far the team diverged from a benchmark sample (y-axis). Team members discussed this and named concrete behaviors from their everyday work that they then classified to the given strategies. In the next step, we used two key questions to develop ideas for measures: (1) Which of the strategies that we are already applying have the potential to enable our team to cope with time pressure better in the future? (2) Which new methods would enable us to cope with time pressure better in the future? The ideas were ranked in order of priority and an action plan was drawn up for at least one selected idea.

3.2 Method

Research design

The five teams were surveyed in their branch office in the fall of 2016. They were posttested on the further development of team strategies 2 months after attending the 2-hour workshop. Because of the low number of groups, we did not use a control group design.

Sample

The five teams contained a total of 45 members (29 women and 16 men). The five male team leaders also participated in both the surveys and the workshops. Teams contained 6 to 15 members. At the first survey before the pilot intervention, the response rate was 100 % in all teams. In Teams 1-3, all members took part in the intervention; in Team 4, one member was missing; and in Team 5, 5 out of 15 members did not take part. In the second survey after the pilot intervention, the response rate was 86 % in Team 1, 83 % in Team 2, 100 % in Teams 3 and 4, but only

40 % in Team 5. Although all members of Teams 1 and 2 took part, the data from one person in each team were dropped for reporting consistently extreme values. Classification of the two measurement times was only possible on the team level, because we were not allowed to use a code for individual allocations.

Instrument

We applied the 12 newly developed team strategy scales while also assessing time pressure and exhaustion in exactly the same way as in the main study. To test whether important team strategies had been lost through the methodologically rigorous approach taken in the main study, we added a further five scales or team strategies that had been named in the qualitative pilot study and attained good reliabilities (Cronbach's α) in the main study, but had been excluded in the factor analysis by the MAP test. These were: *Taking the pressure off each other*, *Handling e-mails, Handling information, Dropping tasks,* and *Compensating overtime* (see Appendix 2).

Intervention

Table 5 reports which concrete measures were chosen by the teams. This resulted in one to three measures per team that were, in turn (together with the team), assigned to between two and four strategies. Hence, single measures could exert effects on several team strategies.

3.3 Results

For the inferential statistics, we carried out separate nonparametric Mann-Whitney *U* tests for each single team.[4] We examined whether the team strategies addressed in the workshop actually were applied more often in each team. Table 5 reports the means at the two measurement times.

There were significant improvements in team strategies in Teams 2, 3, and 5. All these teams showed a significant improvement in the strategy *Handling e-mails*. This strategy was also addressed in Team 4, but differences in this team just failed to attain significance ($p = .065$). In Team 1, *Clarifying demands* was also marginally significant ($p = .051$). An analysis of effect sizes showed that all the significant effects found were strong (Cohen, 1992). The other team strategies showed no significant improvements following the pilot intervention. Hence, Hypothesis 4 was confirmed only partially. However, it should be noted that due to the small sample sizes, descriptively marked improvements in the team strategies *Tolerating mistakes* (Team 1), *Taking the pressure off each other* (Team 2), *Handling deadlines* (Team 3), and *Increasing efficiency* (Team 5) did not attain statistical significance. Because of the small sample sizes, only strong effects could be confirmed as significant differences.

4 Discussion

Time pressure is a significant stressor in the today's working world and many employees are organized in teams. Nonetheless, up to now, research has concentrated almost exclusively on individual strategies for coping with this stressor. Our goal was to identify which strategies teams use to cope with time pressure and to develop a questionnaire with which to assess them. We first carried out a qualitative pilot study to collect those behaviors that teams reported and used to cope with time pressure in their work environments. We then classified these behaviors to 21 strategies that the results of the quantitative main study reduced to 12. From these 12 strategies, 9 were characterized as active and 3 as active-self-endangering.

Active strategies aim to reduce and avoid time pressure. By recognizing that team members have limited resources, they can potentially protect health. Active strategies include, for example, jointly organizing work in optimal ways or reducing the number of tasks and consequently avoiding excessive strain on individuals. The present study indicates that time pressure does not lead to teams applying more active strategies per se. Nonetheless, applying active team strategies is accompanied by lower levels of individual exhaustion. The interaction analyses showed that the joint strategies of *Setting priorities* and *Clarifying demands* buffer the effect of time pressure on exhaustion. Further interactions did not attain significance. Hence, results on active strategies indicate that these are not necessarily applied when a team is facing time pressure. However, it seems that they tend to relate positively to health, and two of the strategies studied can even ameliorate the effects of time pressure on health.

Active-self-endangering strategies are applied to achieve team goals and fulfil team tasks in the face of time pressure. However, these can increase the strain on the personal ability of team members to perform. Correlations indicate that teams facing time pressure tend to apply more active-self-endangering strategies. The three strategies *Intensifying work*, *Reducing quality*, and *Going without or shortening breaks* are accompanied by higher exhaustion scores. This is compre-

[4] Due to the small sample sizes, we decided to report Mann-Whitney U tests instead of t tests. The analyses with t tests led to the same results with two exceptions: Two more mean comparisons attained statistical significance.

Table 5: Team-specific measures, classification to team strategies, pre and posttest means, and results of U test.

Team	Description of measure	Strategy classification	Mt1	Mt2	U, p	Effect size
1	„Quality of work“: Complex tasks are checked according to the principle of dual control. Information is exchanged briefly when the task is handed over from worker to controller. It is noted where exactly uncertainties emerged along with the degree of time pressure when doing the work.	Clarifying demands	3.35 (n = 7)	3.83 (n = 6)	U = 7.5, p = 051	r = .542
		Increasing efficiency	3.00 (n = 7)	3.67 (n = 6)	U = 8.5, p = .073	r = .500
		Tolerating mistakes	1.64 (n = 7)	2.50 (n = 6)	U = 12, p = .234	r = .362
2	„Workload of individual employee“: A brief team meeting is held at 8:30 every morning. Each member of the team rates her or his workload for the day on a scale from 1 to 10 ranging from no overload (1) to high overload (10). This information makes the workload visible so that tasks can be assigned in line with resources. Attention should be paid to ensuring that each employee delivers correct information and states this as briefly and comprehensibly as possible.	Taking the pressure off each other	2.75 (n = 6)	3.40 (n = 5)	U = 6.5, p = .126	r = .513
2	„E-mail rules“: (1) Every e-mail received is acknowledged or replied to within 24 hours. (2) Research enquiries can be forwarded to an assistant. (3) Stock market orders arriving from customers by mail are to be processed within 24 hours. During this period, the customer is to be kept informed about the constant stock market fluctuations.	Handling e-mails	1.42 (n = 6)	2.50 (n = 5)	U = 2, p = .017	r = .682
3	„Meeting protocol“: After every meeting, the team jointly determines which of the points discussed will be documented in writing so that they can be inspected at a later time.	Handling meetings	4.02 (n = 9)	4.29 (n = 9)	U = 25, p = .190	r = .329
3	„Creating time“: When a customer order arrives, the data and time are registered, Optimally, a timeframe for processing the order will be agreed with the customer and the urgency of the order will be ascertained. Standards and deadlines will be worked out jointly in the team and defined consistently.	Handling e-mails	1.28 (n = 9)	2.94 (n = 9)	U = 6.5, p = .001	r = .725
		Handling deadlines	2.37 (n = 9)	3.00 (n = 9)	U = 23.5, p = .136	r = .361

4	„Task clarification“: When an order arrives, the target will be determined and the necessary steps to attain it will be discussed in detail. The task will be distributed according to the resources available in the team. This measure ensures clear communication and the best possible customer service right from the start.	Clarifying demands	3.75 (n = 8)	3.44 (n = 8)	U = 26.5, p = .574	r = .146
4	„Structure of the mail inbox“: Individual distributions and classification systems are presented at the team meeting. The team agrees on a uniform system. As a result, customer mail is forwarded even in default situations and processed reliably and conscientiously.	Taking the pressure off each other	4.19 (n = 8)	3.56 (n = 8)	U = 20, p = .234	r = .327
		Handling e-mails	1.69 (n = 8)	2.75 (n = 8)	U = 14.5, p = .065	r = .468
4	„Breaks“: The team sets fixed mandatory break times (10:00 and 15:15). The advantage is that breaks are spent together.	Going without and shortening breaks	2.75 (n = 8)	2.67 (n = 8)	U = 24.5, p = .442	r = .200
5	„Mail orders“: All team members are assigned substitutes who will deal with their mail when they are not present.	Handling e-mails	1.7 (n = 15)	2.83 (n = 6)	U = 15.5, p = .018	r = .523
5	„Making appointments“: Special customers require appointments for personal meetings. These are determined in the team and times are fixed. To better coordinate passing customers, a suitable time window will be set up for smaller orders.	Clarifying demands	3.8 (n = 15)	4.29 (n = 6)	U = 26, p = .154	r = .327
5	„Telephone“: The telephones in the front office will be redirected to the back office during counter service.	Increasing efficiency	3.32 (n = 15)	4.00 (n = 6)	U = 27, p = .178	r = .308

hensible, because *Intensifying work* may well involve having to make extra effort, doing overtime, and consequently reducing the time for recuperation. *Going without or shortening breaks* also reduces the time available for necessary regeneration (Rau, 2012). In our introduction, we already pointed out that the framing conditions for reducing work quality also have major psychological costs, because lower quality is perceived as a sign of failure and incompetence by both clients and the employees themselves. However, we could not confirm our assumption that applying these strategies in combination with high time pressure could reinforce the negative effect of the latter. Nonetheless, we find clear differences between active and active-self-endangering strategies: Active strategies tend to be accompanied by less exhaustion, whereas active-self-endangering strategies correlate positively with exhaustion. Moreover, it is conspicuous that active-self-endangering strategies are applied more frequently under time pressure, whereas applying active strategies depends on other features of the team and of the framing conditions; and these strategies are not applied more frequently under time pressure per se.

All correlations between the strategies and exhaustion were rather low. This is not surprising in light of the numerous further influences on exhaustion such as the individual life situation and individual coping strategies. Future studies should test how far team coping strategies have an additional or an incremental explanatory power going beyond individual coping strategies alone, and how individual and joint strategies interact (Stewart, Courtright & Manz, 2011).

For 10 strategies, we found no moderating effect; and three scales also did not correlate with exhaustion. Nonetheless, we recommend waiting for the results of further studies before starting to exclude any single strategies. Instead, the results of the pilot intervention indicate that the 12 team strategies do not yet cover the full range of practically significant strategies for coping with time pressure. The pilot intervention has shown that one strategy that failed to attain significance in the factor analysis in the main study (*Handling e-mails*) would seem to be a promising source of concrete team measures. Many people view e-mails as a growing stressor in their work context (Barley, Meyerson & Grodal, 2011). Four teams learned to apply the strategy of *Handling e-mails* in markedly improved ways. Hence, even a short intervention leads to improvement here. The pilot intervention indicates that at least some single team strategies can already be improved within 2 hours. This is promising and requires further study. Nonetheless, 2 hours do not suffice to achieve long-term change in the team, indicating the need to discuss and further develop joint strategies in coping with pressure repeatedly at team meetings. A further problem in the company participating in the pilot intervention was that it announced a reorganization after the end of the workshop that led to changed team compositions and tasks immediately after the posttest measurement.

4.1 Limitations and outlook

To examine the relevance of team strategies for health, the main study tested moderators between time pressure and exhaustion. However, the team strategies should not just be understood as a product of teams reacting to acute time pressure. When, for example, teams draw up annual plans together in advance, one of their main concerns is to prevent time pressure emerging. Hence, team strategies also serve preventively to avoid future phases of time pressure. We suspect that the health-promoting effect of team strategies may develop particularly through this effort to avoid time pressure. However, testing such effects calls for longitudinal designs. Further scales for assessing health that go beyond exhaustion will be needed to gain a more precise understanding of the significance of joint coping strategies for health. This will lead to more differentiated analyses of which strategies can predict which health indicators.

Some scales in the current version contain only two items, and this number will need to be extended in the future. A follow-up study could also test the factors obtained with confirmatory factor analysis. It would also seem worth testing how far nonlinear relations are to be found between time pressure, coping strategies, and health. Such curvilinear relations are already known from research on time pressure and performance (Ohly, Sonnentag & Pluntke, 2006). It is also necessary to clarify the significance of the „we“ feeling, the social identity (van Dick, 2015), in the development of the strategies for coping with time pressure presented in this article. Earlier studies have suggested, for example, that sharing a core task and, as a result, possessing a joint task orientation increases the probability of developing health-promoting team strategies (Busch et al., 2013).

Because the pilot intervention was carried out in the field and the measures were a product of the ideas of the participating teams, not all measures show an exact fit with the contents of the items on team strategies. For example, those participating in the intervention on *Handling meetings* (Team 3) decided to draw up a joint protocol of their meetings. The aspect „protocol“ was not covered by the items in the *Handling meetings* scale. As a result, it is not surprising that no change could be found. To improve the strategy *Handling e-mails*, Team 2 agreed on deadlines for replying to e-mails in their measures. One item in the scale on *Handling e-mails* assessed precisely whether e-mails

need to be answered as soon as they arrive. We can more readily expect a change in the team strategy across time when the content of the measure is close to the content of the items on team strategies – and this is also what we found. Further intervention studies should focus on a fit between items and the strategies applied.

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Appendix 1: Scales and items retained following factor analysis and item selection.

Clarifying demands FS

In the last six months, how often did you do the following to reduce or avoid time pressure?
CD1. Before starting work on a task, we defined exactly what the result should look like.
CD2. Before starting work on a task, we defined exactly how it should be carried out.
CD3. We jointly discussed the quality level we wish to achieve on a task/order.
CD4. We agreed together to do only what our customers/clients/patients, etc. expect.

Refusing tasks AS

RT1. To avoid time pressure in the future, we refused to take on new tasks.
RT2. To reduce acute time pressure, we refused to take on new tasks.

Increasing efficiency AS

During the last six months, we have
IE1. defined our procedures more precisely.
IE2. simplified our procedures.
IE3. discussed how routine tasks could be processed particularly efficiently.
IE4. laid down standards for routine tasks.

Long-term planning AS

LTP1. We draw up an annual plan of all the tasks we know about in advance.
LTP2. We always examine which tasks are pending several months in advance so that we can avoid time pressure.
LTP3. To avoid time pressure, we always jointly negotiate the goals for the coming year or several months in advance so that we know what we shall have to face as a team in the future.
LTP4. To avoid time pressure, we check whether our team goals really are realistic.
LTP5. To avoid time pressure, team leaders and employees work together to ensure that we really can attain the agreed goals.

Setting priorities AS

Please think about phases with time pressure in the last six months.
SP1. During these phases, did you and your team jointly reach a clear decision on which concerns of customers/clients/patients need to be prioritized?
SP2. During these phases, did you and your team jointly adjust priority settings when new tasks emerged?
SP3. During these phases, did you and your team jointly adjust priority settings when unexpected difficulties arose?

Receiving back up from superior FS

When we were under time pressure during the last six months,
RBS1. our superior or another person responsible backed us up when we refused a task.
RBS2. our superior or another person responsible backed us up when we failed to complete certain tasks.
RBS3. our superior or another person responsible encouraged team members to refuse additional tasks when they already had too much to do.

Tolerating mistakes FS

When we were under time pressure during the last six months, we often told each other that,
TM2. it's normal for a mistake to occur.
TM1. it's normal for something to be forgotten.

Handling deadlines FS

During the last six months, please tell us how often you took the following approach (when completing tasks or orders) in order to reduce or avoid time pressure.
HD1. We negotiated an extended deadline with the person responsible.
HD2. After consulting with the person responsible, we extended the deadline for completing the task / order.
HD3. After joint consultations, we have deferred the target dates.

Handling meetings FS

Please think back over the last six months.
To reduce or avoid time pressure, we
HM1. made sure that meetings start punctually.
HM2. made sure that meetings end punctually.
HM3. held meetings without deviating from the set topics.
HM4. set a clear agenda or goals for our meetings.
HM5. kept discussions brief at meetings.

Intensifying work FS

Please think back over the last six months.
IW1. We simply carried on working to overcome the mountain of things to do.
IW2. We simply carried out the work that we were expected to do.
IW3. We simply carried on as before.

Reducing quality FS

In the last six months, how often did you do the following to reduce or avoid time pressure?
RQ1. We reached a joint agreement to say that we are satisfied with work outcomes of a lower quality.
RQ3. We completed our tasks less diligently.
RQ2. We spent less time on our tasks.
RQ4. We reduced the quality of the work and accepted that this might have negative consequences.

Going without and shortening breaks FS

How often during the last six months have you done the following?
When we were under time pressure, we
GWB1. went without joint breaks during a working day / shift.
GWB2. shortened joint breaks.
GWB3. made sure that everybody can take enough breaks during a working day/shift despite time pressure.*

*Notes: FS = Frequency scale: 1 = hardly ever / never, 2 = occasionally, 3 = sometimes, 4 = often, 5 = very often / continuously; AS = Agreement scale: 1 = does not apply at all, 2 = hardly applies, 3 = sometimes applies, 4 = mostly applies, 5 = applies in full; * = This item had to be recoded before the statistical analysis.*

Appendix 2: Additional scales used in the pilot intervention.

Handling information
HI1. We made sure that the same information is not disseminated to the team over several channels (e.g., both verbally and by e-mail).
HI2. We structured our files well (either electronically or in paper form) so that we can find information quickly.
HI3. We have regularly updated important written information (e.g., instruction manuals, information sheets).
Handling e-mails
HE1. We agreed on clear rules to reduce the number of e-mails.
HE2. We made a clear agreement that e-mails do not have to be answered as soon as they arrive.
Dropping tasks
DT1. To reduce time pressure, we jointly decided no longer to perform those administrative tasks that we consider unnecessary.
DT2. To reduce time pressure, we no longer perform tasks that may be interesting but do not belong to the main task of our team.
DT3. To reduce time pressure, we jointly decided to drop tasks that are not very important.
Taking the pressure off each other
TP1. To reduce time pressure, team members who were particularly affected delegated tasks to others who had time for them.
TP2. To reduce time pressure, we offered to take over other's tasks on a temporary basis.
Compensating overtime
CO1. We worked out a plan together regarding when individual team members can take time off for accrued overtime.
CO2. We reached an agreement with our superior or another person responsible regarding how to compensate overtime by taking full days off work.
CO3. We reached an agreement with our superior or another person responsible that we take time off for accrued overtime immediately after a work phase with high time pressure.

Notes: Response format: 1 = does not apply at all, 2 = hardly applies, 3 = sometimes applies, 4 = mostly applies, 5 = applies in full.