RESEARCH PAPER

The Life Tasks Test: Psychometric evaluation in clinical samples of office workers and rescue workers

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Abstract

Background: Life tasks are the pillars of daily private life that underlie personal well-being and health. Bakker et al. (2019) developed the Life Tasks Test (LTT) to assess the perceived effectiveness in life task functioning and found evidence for its psychometric properties (e.g., factorial structure and criterion validity) in a rescue worker sample.

Aims: This paper aims (1) to verify Bakker et al.'s (2019) findings by replicating the study design and (2) assessing the generalisability to an office worker sample.

Method: Cross-sectional data on rescue workers ($n = 412$) and office workers ($n = 726$) were used to confirm reliability, convergent validity, factorial structure, and criterion validity of the LTT.

Results: The reliability estimates are shown to be acceptable in both samples. The hypothesised factor structure is shown to have adequate fit on the data, after adjustment of the initial 20-item model. Perceived life tasks functioning accounted for substantial variance ($r = \sim.30$) in negative affect. In rescue workers significant differences in life tasks scores were found for gender- and age-based subgroups. In office workers, significant differences were substantiated according to occupation.

Limitations: The sample of rescue workers wholly consists of police officers and, therefore, represents only part of the rescue worker population. Furthermore, it is yet to be shown if the results are replicable for healthy populations.

Conclusions: The present findings confirm that most of Bakker et al.'s (2019) original findings are replicable in a new clinical sample of rescue workers and generalisable to a clinical sample of office workers. This study contributes to the growing body of research on positive health self-management and its measurement.

Keywords: *life tasks, rescue workers, office workers, test, validity*

Life tasks are at the centre of human behaviour concerning the response to the challenges of daily life; from doing what is necessary for basic societal participation, to reaching an optimal level of well-being. The concept of life tasks was introduced by Alfred Adler (1929/1997), who regarded effectiveness in life tasks as key factors of individual well-being in society. More recently, Cantor et al. (1991) defined life tasks as the daily tasks that an individual considers important according to their particular life situation. Huber et al. (2011, 2016) consider adequate social and societal participation as aspects of well-being, mentioning such tasks as forming connections with others and doing meaningful work. Building on the concept of life tasks, Bakker et al. (2019) developed the Life Tasks Test (LTT) and tested its

Table 1:
The Life Tasks Test (LTT)

Subscale	Subscale Items
Social Life	• I can maintain friendships • I can give support and sympathy in my friendships • I can receive support and sympathy in my friendships • I can maintain my social network
Maintaining Mental Health	• I can deal with my emotions effectively • I can deal with stress effectively • I can deal with adversity effectively • I can deal with shocking events • I am effective in searching for sources of relaxation and energy
Household and Finance	• I can manage money effectively • I can build a stable romantic relationship • I can run the household chores effectively • I can manage the financial administration effectively
Giving Meaning	• I can pursue an education or a course with success • I believe that my work is of significance in a larger whole • I try to learn from the things that I experience in life • I contribute in improving difficult situations • I feel relevant in my life
Maintaining Positivity	• The disturbing incidents I experience at work make it hard to stay positive [a] • The disturbing incidents I experience at work make it hard to stay vibrant and hopeful in life [a]

Note. The LTT was developed with rescue workers in mind.   [a] For office workers 'disturbing incidents' was replaced with 'problems'

psychometric properties, initially with the goal of contributing to research on functioning in rescue workers. Through their jobs that are characterised by exposure to critical incidents (e.g., being physically injured), rescue workers (e.g., police officers, firefighters, and paramedics) are vulnerable to developing psychological symptoms (Benedek et al., 2007; Gershon et al., 2009), which are shown to negatively impact life task functioning (aan het Rot et al., 2012; Quilty et al., 2003). However, other types of workers can also develop psychological symptoms, caused by work-related stress in their jobs, in a process that is well-explained by the job demands-resources model (Schaufeli & Bakker, 2004). Typically, in such work-related stress research life tasks functioning is not measured. Outcome measures very often are restricted to more common measures of strain (energy, fatigue) and health symptoms on the one hand, and motivation (engagement, commitment, job satisfaction) and job performance on the other hand (Bakker & Demerouti, 2017). More research on how jobs impact life functioning is necessary for further

development in the field of occupational health research. Therefore, evaluation of the LTT in other working populations is warranted, to potentially facilitate further understanding of workers' daily private functioning, diagnosis of problem areas, developing preventive and curative support, measurement of treatment effects, and the ability to make group comparisons.

The present study will evaluate the replicability of Bakker et al.'s (2019) findings in a new clinical sample of rescue workers, as well as examine its generalisability to a clinical sample of office workers. The term office workers is used here to refer to workers that work in business, education, or health care in an office environment.

Life Tasks

The importance of effective life tasks functioning for individual well-being has been a central theme of recent theories on well-being, for instance in Bandura's (2004) social cognitive theory, and Deci and Ryan's (2000) self-determination theory.

Accordingly, effective life tasks functioning facilitates positive spillover from private life to work-related areas (ten Brummelhuis & Bakker, 2012). The LTT measures five life task domains eponymous to its subscales: (a) Social Life, (b) Maintaining Mental Health, (c) Household and Finance, (d) Giving Meaning, and (e) Maintaining Positivity (see Table 1). The associations between the five life task domains and well-being in rescue workers have been described in the replicated study (viz., Bakker et al., 2019). The following paragraphs will focus specifically on how life functioning might be affected by jobs in office workers, before going further into the objectives, details and results of the present study.

Social Life. The beneficial effects of social support on well-being have been well documented, for example through the social support resources theory (Hobfoll et al., 1990), and the direct effects and buffering hypotheses (Cohen & Wills, 1985). More recently, Craig and Kuykendall (2019) found positive effects of social support on well-being in office workers that are unique to friendships. With regard to social life functioning, perceived social effectiveness is found to be associated with well-being and general life tasks functioning, with the association partly mediated by positive relationships with others (Segrin & Taylor, 2007). Conversely, a lack of perceived social effectiveness and positive relationships were associated with depression (Segrin & Reynes, 2009).

Maintaining Mental Health. A person's effectiveness in maintaining their mental health is dependent on their self-efficacy. Self-efficacy is a concept introduced by Bandura (1982) that involves a person's capability to regulate emotional states and arousal to facilitate adequate self-navigation, learning, and functioning. For example, self-efficacy is linked to a tendency to use an active, problem-solving approach in response to stressful experiences (Karademas, 2007). Low self-efficacy, on the other hand, is related to neuroticism and symptoms of anxiety and depression (Muris, 2002). Office workers benefit from self-efficacy by being able to ameliorate adverse effects of work-related stress and prevent sickness. Effectiveness in managing negative work-related affective states protects office workers against burnout (Alessandri et al., 2018). Furthermore, emotion regulation training is shown to increase self-efficacy of office workers (Too & Butterworth, 2018).

Household and Finance. Recent studies showed relationships between financial problems on the one hand, and the emergence of symptoms of mental disorder (Meltzer et al., 2013) and

work-family conflict (Odle-Dusseau et al., 2018) on the other. Moreover, domestic work strain and dissatisfaction in the cohabiting or spousal relationship both negatively impact office workers' perceived health (Staland-Nyman et al., 2008). Notably, the impact of household task responsibility on stress levels is significantly more pronounced in lower incomes compared to middle incomes and did not exist among high incomes (Thurston et al., 2011). Above findings suggest that interventions aimed at improving financial literacy and householding effectiveness might positively impact well-being and work-family life.

Giving Meaning. The life task of giving meaning pertains to personal growth and the feeling of contributing positively to society or a greater whole. Meaning and engagement are found to considerably account for subjective well-being (Vella-Broderick et al., 2009), while a lack thereof is associated with dissatisfaction (Peterson et al., 2005). Moreover, according to self-determination theory, effectiveness in giving meaning underlies well-being and other positive outcomes (Deci & Ryan, 2000). For example, office workers who successfully follow their vocation experience better life, job and health related outcomes than those who do not (Gazica & Spector, 2015). Effectiveness in giving meaning might be facilitated through organisational interventions, resulting in higher employee well-being, and reduced health risks and sickness absence (Clausen & Borg, 2011). The positive impact of giving meaning is also well-documented in research on eudaimonic well-being (Ryan & Deci, 2001).

Maintaining Positivity. Effectiveness in maintaining positivity entails being able to experience positive affect in spite of misfortune and distress, a personal attitude ascribed to hardiness and resilience. Hardiness was introduced by Kobasa (1979) as a personality aspect enabling workers to effectively cope with stress but has since expanded into an umbrella concept encompassing multiple similar determinants of well-being (Maddi, 2002). Studies on hardiness show a negative relationship with burnout and work-related sickness absence (Hystad et al., 2011; Garrosa et al., 2008). On a similar note, research on psychological resilience generally implies a certain flexibility to adapt to stress and ameliorate adverse impact (Britt et al., 2016), and is also positively associated with positive health and performance outcomes. Improving resilience in office workers is shown to aid in recovery from burnout (Steensma et al., 2006), and improve mental health, psychosocial functioning, and work performance (Robertson et al., 2015).

Table 2:
Rescue Worker and Office Worker Sample Characteristics

	Rescue workers [a] (n = 412)	Office workers (n = 726)
Mean age in years (*SD*; range)	46.2 (10.7; 22-68)	45.0 (10.8; 21-65)
Sex %		
Male	61.2	40.2
Female	38.8	59.8
Married/cohabitant %	46.4	65.6
Children %	75.5	62.8
Mean tenure in years (*SD*; range)	20.1 (11.8; 0-46)	16.4 (10.8; 0-47)
Education level %		
High school or less	8.3	7.8
Vocational	72.3	26.3
Higher vocational	17.7	41.7
Higher academic	1.7	24.2
Job sector %		
Government	-	32.1
Corporate	-	25.1
Mental health care	-	14.9
Regular health care	-	10.7
Education	-	8.7
Industry	-	7.3
Other	-	1.2

[a] The rescue worker sample consisted of police personnel that worked or had worked on the front-lines.

Objectives of the Present Study

The above literature review supports the notion that the LTT has potential value for office workers. It is uncertain whether findings as to the positive psychometric characteristics of the LTT are generalisable to office workers. In addition, it has yet to be shown if the results from Bakker et al.'s (2019) original study are replicable in a new, independently sampled group of rescue workers, e.g., a group that was not used to develop the test in the first place. Therefore, the objectives of the present study are twofold: (a) to verify validity of the LTT for rescue workers by means of replication, and (b) to explore generalisability to office workers. Based on the replicated study on rescue workers (Bakker et al., 2019), the pilot analysis on office workers (Bakker et al., 2020), and the current analytical strategy, we set the following hypotheses regarding the psychometric properties and factorial validity of the LTT in both samples:

H1.a We expect to find subscale reliability estimates of $\alpha \geq .60$ in the rescue worker sample. Bakker et al.'s (2019) study indicates adequate reliability ($\alpha \geq .70$) in four out of five subscales, with a range of $\alpha = .75$ to .92. However, the office worker pilot test (Bakker et al., 2020) found poor reliability in the Household and Finance subscale ($\alpha = .58$).

H1.b We hypothesise that all items but one, namely "I can build a stable romantic relationship", will show adequate item-rest correlations ($r > .30$) in both samples, supporting convergent validity within subscales.

H1.c We expect that the validity of the proposed 5-factor structure will be supported. However, items with poor factor loading ($< .40$) and item-rest correlation might have to be removed to achieve adequate goodness-of-fit on the data.

Concurrent validity of the LTT subscales will be assessed by examining associations with the Dutch Shortened Version of the MMPI (NVM) and the Questionnaire on Organisational Stress-D (VOS-D). The NVM Negativism and Somatisation subscales measure the extent in which a person experiences negative affect and somatic complaints, respectively. Bradley et al. (2011) have found that negative affect is related to lower functioning in global adaptive behaviour (i.e., life skills). Low scores on MMPI-2 somatisation scales were associated with lower

occurrence of positive health behaviours (Kremyar et al., 2020). The VOS-D measures the extent in which workers experience various workplace-related stressors. Workload (Grzywacz & Marks, 2000), rumination about work (Sonnentag et al., 2010), lack of supervisor support (Väänänen et al., 2003), lack of colleague support (Ferguson, 2012), and lack of meaningfulness in work (Allan et al., 2015) are associated with diminished functioning in private life. We set the following hypotheses regarding concurrent validity:

> *H2.a* We hypothesise that lower functioning on LTT subscales (meaning higher scores) will be associated with higher scores on the NVM subscales of negativism and somatic complaints.
>
> *H2.b* We hypothesise that lower functioning on LTT subscales will be associated with higher scores on the VOS-D subscales that measure comparable constructs. For example, we expect LTT Social Life to correlate significantly with VOS-D Lack of Colleague Support, but not necessarily with VOS-D Rumination About Work.

METHOD

Procedure and Participants

Cross-sectional data were collected from 2016 to 2020 as part of the diagnostic procedure in a mental health care facility for working adults that experience mental health problems and sickness absence. The data were collected by administering online self-report questionnaires and informed consent was obtained from all participants. Job type determined allocation to the rescue worker (n_{rw} = 412) or office worker (n_{ow} = 726) group. Further description of sample characteristics is shown in Table 2.

Instruments

LTT. The LTT was developed by Bakker et al. (2019) and includes 20 items covering five subscales. The Maintaining Positivity items were adjusted for office workers to better correspond with their job environment (see Table 1). Participants indicated to what extent a statement applied to themselves on a 5-point Likert scale (1 = *very good* to 5 = *very bad*). The subscale scores were obtained by averaging the item scores.

NVM. The NVM (Luteijn & Kok, 1985) originally includes 83 items covering five subscales, of which we incorporated two in the present study. Negativism (22 items; α = .79) contains

feelings of frustration, insecurity and lack (e.g., "At times I feel like smashing things"), while Somatisation (20 items; α = .85) includes items that relate to vague physical ailments (e.g., "I am bothered by an upset stomach several times a week"). The scores were assessed on a 3-point Likert scale (0 = *incorrect*, 1 = '?', 2 = *correct*) and summed to obtain subscale indices.

VOS-D. The VOS-D (Bergers et al., 1986) contains 14 subscales, of which we incorporated five in the present study: Workload (e.g., "Do you sometimes not have enough time to finish your work?"; 9 items; α = .77), Lack of Supervisor Support (e.g., "How often do conflicts arise between you and your supervisor(s)?"; 5 items; α = .83), Lack of Colleague Support (e.g., "How often do conflicts arise between you and your colleagues?"; 5 items; α = .75), Rumination About Work (e.g., "Do you sometimes worry about the future of your company?"; 4 items; α = .58), and Lack of Meaningfulness in Work (e.g., "Do you feel engaged in your work?"; 3 items; α = .68). The subscales contained answers on a 4-point or 5-point Likert scale. Subscale scores were obtained by averaging the item scores.

Data Analysis

The data analysis was executed with the Statistical Package for Social Sciences software (SPSS v.26.0). Reliability was assessed by using Cronbach's α. Additionally, convergent/divergent validity between subscales was determined by using bivariate correlation analysis. Furthermore, item-rest correlations and mean inter-item correlations were computed to test for convergent validity of subscale items. According to Clark and Watson (1995), a low inter-item correlation (r = .15–.20) was desirable when measuring broader, general constructs, while a high inter-item correlation (r = .40–.50) was required for measuring narrow, specific constructs. Cases in which Cronbach's α would improve if the item would be removed were reported. Moreover, confirmatory factor analysis (CFA) was conducted with the Analysis of Moment Structures (AMOS v.22.0) software package to test for factorial validity of the hypothesised model (see Figure 1). We used maximum likelihood to estimate parameter values and subsequently tested multiple adjustments to the model based on factor loadings and item-rest correlations. In reporting fit indices and their criteria, we followed the recommendations by Hu and Bentler (1999). We reported the traditional χ^2 goodness-of-fit index, root mean square error of approximation (RMSEA; including 90% confidence interval [CI]), and standardized mean square residual (SRMR). RMSEA values

Figure 1:

Hypothesized 20-item CFA Model of the Factorial Structure of the LTT
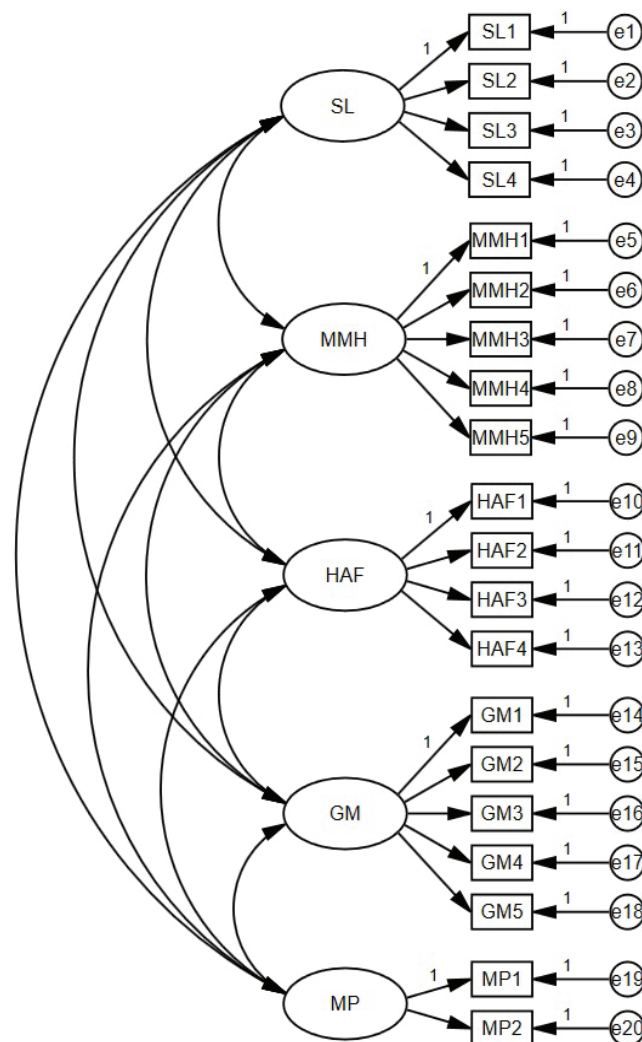
Note. SL = Social Life; MMH = Maintaining Mental Health; HAF = Household and Finance; GM = Giving Meaning; MP = Maintaining Positivity. Items are numbered in the order presented in Table 1. Error terms associated with each item are labelled e1–e20.

of $\leq$ ~.06 and SRMR values of $\leq$ ~.08 were considered adequate fit. Furthermore, the relative fit indices Tucker-Lewis Index (TLI) and comparative fit index (CFI) were reported. Relative fit indices compare the hypothesised model with a restrictive baseline model that is assumed to have poor fit on the data. Initially TLI and CFI values of > .90 were considered adequate fit, but more recently values of $\geq$ ~.95 are determined to reflect model fit more properly (Hu & Bentler, 1999).

To assess concurrent validity, Pearson's correlation coefficients were computed. Correlations of r > .30 were required between the LTT and NVM, corresponding with a medium effect size (ES; Cohen, 1988). Between the LTT and VOS-D lower correlations (r > .20) were accepted, because their constructs had less commonalities. When cut-off was neared, 95% CIs computed with 1,000 bootstrap replications were included in the results.

Note that the present study contained small methodical modifications compared to Bakker et al.'s (2019) study, including larger sample sizes (n_{rw} = 412, n_{ow} = 726, vs. $n_{rw\text{-}previous}$ = 108). The resulting increase in statistical power was counteracted by adhering to stricter p-values for significance testing and additionally reporting CI and TLI statistics.

RESULTS

Reliability

Subscale reliability estimates are provided in Table 3. The Cronbach's alpha coefficients ranged from .61 to .88 in the rescue worker sample, indicating acceptable to good reliability across subscales. In the office worker sample, alpha coefficients ranged from .58 to .87, indicating poor to good reliability. The single poor estimate (α_{ow} = .58) belonged to the Household and Finance subscale.

Convergent Validity

Pearson correlation coefficients denoting convergent validity within the subscales are shown in Table 3. Two items were found to reduce convergent validity of their scale. The Giving Meaning item "I can pursue an education or a course with success" showed weak item-rest correlation (r_{rw} = .29; r_{ow} = .28), but removal would negatively impact subscale reliability. Additionally, the Household and Finance item "I can build a stable romantic relationship" showed poor item-rest correlation (r_{rw} = .21; r_{ow} = .20). After removing this item, subscale reliability improved considerably

Table 3:

Means, Standard Deviations, Cronbach's Alphas and Inter-Item Correlations of the LTT Subscales Arranged by Worker Sample

Subscale	Sample	M	SD	Cronbach's α	Inter-item correlation (mean)	Item-rest correlation (range)
SL	R	2.30	0.53	.72	.38	.33–.65
	O	2.25	0.54	.72	.39	.37–.67
MMH	R	2.79	0.66	.78	.41	.33–.68
	O	2.85	0.59	.74	.36	.30–.59
HAF	R	2.14	0.57	.64	.31	.21–.54
	O	2.12	0.56	.58	.27	.20–.50
GM	R	2.09	0.47	.61	.26	.29–.54
	O	2.11	0.48	.60	.24	.28–.42
MP	R	2.90	1.11	.88	.78	.78 [a]
	O	3.10	1.05	.87	.77	.77 [a]

Note. R = Rescue worker sample (*n* = 412); O = Office worker sample (*n* = 726). SL = Social Life; MMH = Maintaining Mental Health; HAF = Household and Finance; GM = Giving Meaning; MP = Maintaining Positivity.

[a] Lacks item-rest correlation range, because the subscale only counts two items.

Table 4:

Intercorrelation Matrix of the LTT Subscales Sorted by Worker Sample

Subscale	1	2	3	4	5
1. Social Life	-	.20**	.21**	.34**	.10**
2. Maintaining Mental Health	.36**	-	.24**	.41**	.21**
3. Household and Finance	.27**	.34**	-	.26**	.02
4. Giving Meaning	.34**	.47**	.31**	-	.19**
5. Maintaining Positivity	.13**	.20**	.06	.09	-

Note. The results for the rescue worker sample (*n* = 412) are shown below the diagonal. The results for the office worker sample (*n* = 726) are shown above the diagonal and in italics. The differences of *p*-values in similar sized correlation estimates between samples can be explained by differences in the sample size and, consequently, sample power.

***p* < .01.

Table 5:

Summary of Goodness-Of-Fit Indices for Hypothesised and Alternative CFA Models of the LTT

Model	χ^2 (*df*)	*p*	MD$\Delta\chi^2$ (MDΔ*df*)	RMSEA [90% CI]	SRMR	TLI	CFI
			Rescue workers				
20-item	375.82 (160)	.000	-	.057 [.050, .065]	.067	.89	.90
19-item [a]	309.11 (142)	.000	66.72 (18)***	.053 [.045, .062]	.060	.91	.92
18-item [b]	261.78 (125)	.000	37.33 (17)**	.052 [.043, .060]	.058	.92	.94
17-item [c]	216.58 (109)	.000	45.20 (16)***	.049 [.039, .059]	.054	.95	.93
			Office workers				
20-item	569.53 (160)	.000	-	.059 [.054, .065]	.065	.86	.89
19-item [a]	462.00 (142)	.000	107.43 (18)***	.056 [.050, .061]	.059	.89	.91
18-item [b]	403.01 (125)	.000	58.99 (17)***	.055 [.049, .061]	.055	.90	.92
17-item [c]	312.44 (109)	.000	90.57 (16)***	.051 [.044, .057]	.051	.92	.94

Note. Rescue workers (*n* = 412); Office workers (*n* = 726). MD = mean difference; RMSEA = root mean square error of approximation; CI = confidence interval; SRMS = standardized mean square residual; TLI = Tucker-Lewis index; CFI = comparative fit index.

[a] Removes item "I can build a stable romantic relationship" from the 20-item model.   [b] Removes item "I can receive support and sympathy in my friendships" from the 19-item model.   [c] Removes item "I am effective in searching for sources of relaxation and energy" from the 18-item model.

**p <.01. ***p < .001

in both samples (α_{rw} = .64 to .72; α_{ow} = .58 to .66). Moreover, the intercorrelation matrix in Table 4 presents the convergent/divergent validity estimates between LTT subscales. The outcomes indicated the absence of a higher order latent variable.

Confirmatory Factor Analysis

CFA was conducted to determine factor validity of the five-factor structure. The results are presented in Table 5. Goodness-of-fit of the 20-item model proved to be acceptable to adequate in the rescue worker sample according to all standardized fit indices except the TLI, χ^2_{rw} = 375.82, *df* = 160, *p* < .001, RMSEA = .057 (90% CI [.050, .065]), SRMR = .067, TLI = .89, CFI = .90. However, the 20-item model was found to fit less well on the office worker data, χ^2_{ow} = 569.53, *df* = 160, *p* < .001, RMSEA = .059 [.054, .065], SRMR = .065, TLI = .86, CFI = .89. Examination of the model revealed weak factor loadings (FL$_{rw}$ = .24; FL$_{ow}$ = .19) of the item "I can build a stable romantic relationship", as expected based on its undermining of convergent validity. The item was removed to refine the model into a 19-item model, which resulted in acceptable fit on all fit indices on the rescue worker sample,

as shown in Table 5. However, in the office worker sample the TLI estimate remained below cut-off (TLI$_{ow-19item}$ = .89) even after deletion of this item. Thus, subsequent CFAs were conducted after removing other items with poor factor loadings, namely "I can receive support and sympathy in my friendships" (FL$_{rw}$ = .35; FL$_{ow}$ = .41) and "I am effective in searching for sources of relaxation and energy" (FL$_{rw}$ = .38; FL$_{ow}$ = .36). The 17-item models showed adequate overall goodness-of-fit on the data, as can be seen in Table 5. However, taking content validity into account, we retain the 19-item model for the concurrent validity analyses.

Concurrent Validity

Proceeding with the 19-item model, Pearson's correlations were computed between the LTT and the NVM and VOS-D to determine concurrent validity (see Table 6). The correlation coefficients showed support for concurrent validity between Maintaining Mental Health and Negativism (r_{rw} = .35; r_{ow} = .31) and Somatisation (r_{rw} = .38; r_{ow} = .38). Adequate correlations, albeit just below the cut-off value, were also found between Household and Finance and Negativism (r_{rw} = .31; r_{ow} = .29) and Giving

Table 6:

Pearson Correlation Coefficients Relating the LTT Subscales to Subscales of the Dutch Shortened Version of the MMPI (NVM) and the Questionnaire on Organisational Stress (VOS-D)

Scale	M	SD	1	2	3 [a]	4	5
			NVM				
Rescue Workers							
Negativism	21.48	7.53	.26**	.35**	.31**	.29**	.18**
Somatisation	18.31	9.25	.09	.38**	.15**	.17**	.11
Office Workers							
Negativism	21.17	7.57	.28**	.31**	.29**	.29**	.16**
Somatisation	17.73	8.82	.08	.38**	.14**	.13**	.10**
			VOS-D				
Rescue Workers							
WL	3.11	0.61	.06	.09	.00	-.03	.07
LOSS	2.07	0.64	.06	.10	.03	.10	.06
LOCS	2.18	0.40	.19**	.21**	.13**	.17**	.01
LOMIW	1.68	0.49	.12	.10	.06	.34**	.00
RUAW	2.00	0.60	.17**	.26**	.10	.15**	.15**
Office Workers							
WL	3.41	0.64	.00	.00	-.02	-.11**	.12**
LOSS	1.92	0.59	.06	.04	-.01	.09	.30**
LOCS	2.20	0.37	.18**	.16**	.06	.23**	.17**
LOMIW	1.72	0.49	.17**	.06	.08	.39**	.10**
RUAW	2.12	0.59	.06	.15**	.05	.01	.33**

Note. Rescue workers ($n = 412$); Office workers ($n = 726$). The numerals 1-5 in the column heading represent the five LTT subscales, as in Table 4. WL = Workload; LOSS = Lack of Supervisor Support; LOCS = Lack of Colleague Support; LOMIW = Lack of Meaningfulness in Work; RUAW = Rumination About Work.

[a] Without item "I can build a stable romantic relationship".

**p < .01.

Meaning and Negativism (r_{rw} = .29; r_{ow} = .29). The relationship between Social Life and Negativism showed insufficient strength when taken at face value, but the upper limit of the confidence interval did surpass cut-off value, r_{rw} = .26, 95% CI [.16, .35], df = 410; r_{ow} = .28 [.22, .35], df = 724. Remarkably, we found insignificant correlations between Maintaining Positivity and Negativism (r_{rw} = .18 [.07, .27]; r_{ow} = .16 [.09, .23]) and Somatisation (r_{rw} = .11 [.02, .21]; r_{ow} = .10 [.03, .18]). Given the conceptual similarity between those subscales, we expected

at least adequate support for concurrent validity. Also, the replicated study (Bakker et al., 2019) did find adequate support for concurrent validity between Maintaining Positivity and Negativism ($r_{rw\text{-previous}}$ = .31) and Somatisation ($r_{rw\text{-previous}}$ = .40).

Pearson's correlation coefficients between LTT and VOS-D subscales were also presented in Table 6. As hypothesized, the outcomes generally indicated weaker associations. Giving Meaning and Lack of Meaningfulness in Work were adequately associated with each other in both samples (r_{rw} = .34; r_{ow} = .39),

as was expected. Support was found as well for a relationship between Giving Meaning and Lack of Colleague Support in the office worker data (r_{ow} = .23, 95% CI [.15, .30], df = 724), and to a lesser extent in the rescue worker data (r_{rw} = .17 [.06, .29], df = 410). Furthermore, an association between Social Life and Lack of Colleague Support (r_{rw} = .19 [.05, .30]; r_{ow} = .18 [.11, 26]) was somewhat supported, although a stronger relationship was expected. Interestingly, the results also showed differences between rescue workers and office workers in specific correlation patterns, for instance in the relationship between Social Life and Rumination About Work (r_{rw} = .17 [.06, .26]; r_{ow} = .06 [-.02, .13]). Furthermore, acceptable associations were found between Maintaining Mental Health and Lack of Colleague Support (r_{rw} = .21) and Rumination About Work (r_{rw} = .26) in the rescue worker data, but less so in the office worker data (r_{ow} = .16 [.08, .23]; r_{ow} = .15 [.07, .22], respectively). Household and Finance did not seem to be notably associated with any VOS-D subscale, although the replicated study (Bakker et al., 2019) did find evidence for a relationship with Lack of Colleague Support ($r_{rw-previous}$ = .26), where the present study did only find marginal correlations (r_{rw} = .13 [.02, .23]). Lastly, Maintaining Positivity was associated with Lack of Supervisor Support (r_{ow} = .30), Lack of Colleague Support (r_{ow} = .17 [.10, .25]), and Rumination About Work (r_{ow} = .33) in the office worker, but, remarkably, not in the rescue worker data (r_{rw} = .06, .01, and .15, respectively). These outcomes contrast with findings from the replicated study.

Exploratory Analyses
Office Worker Sample
Average Life Task Test Score. In the subsample of office workers, the influence of demographic characteristics on the average Life Task Test (LTT) score was investigated through multiple One-way ANOVA analyses. Whilst no significant difference was found between age groups or female and male office workers, the mean LTT score differed significantly between various occupations in the field (see Appendix, Table 1; $F(4, 721)$ = 5.15, p = < .001, η^2 = .03). A function within Support and Administration consists of assistance and administrative responsibilities. They give service and support to the functioning of professionals or supervisors. Regular Employees are professionals who follow task-instructions from higher ranking individuals. Task Coordinators manage the progression and completion of tasks or projects, while Supervisors are in charge of personnel and management of a department or group. Directors are responsible for the company. Individuals having a function within Support and Administration (M = 2.60, SD = .41) presented a higher average score in comparison to Employees (M = 2.49, SD = .39; MD =.12, SE = .04), Task Coordinators (M = 2.42, SD = .36; MD = .19, SE = .05), or Supervisors (M = 2.40, SD = .35; MD = .20, SE = .06).

Separate Life Task Test Scores. The influence of demographic characteristics on separate Life Task Test (LTT) scores was also analyzed (See Appendix, Table 2). When conducting separate MANOVA analyses, a significant difference was found between age groups ($F(20, 2880)$ = 2.40, p = < .001, $p\eta^2$ = .02), female and male office workers ($F(5, 720)$ = 9.14, p = < .001, $p\eta^2$ = .06), as well as individuals within different occupations ($F(20, 2880)$ = 3.34, p = < .001, $p\eta^2$ = .02).

Age Group Differences. The LTT sub-scores "Maintaining Mental Health", "Household and Finance" and "Maintaining Positivity" varied substantially between age categories (See Appendix, Table 3.1). In a post-hoc comparison, 21- to 30-year-old office workers scored higher for "Household and Finance" as respective 51- to 60-year-old, and 61- to 65-year-old workers (MD = .23, SE = .07; MD = .31, SE = .07).

Gender Differences. Regarding gender, the sub-scores "Social Life", "Mental Health", "Give Meaning", "Maintaining Positivity" differed significantly (See Appendix, Table 3.2). In comparison to their female counterparts, male office workers scored higher for all LTT scores, except for "Mental Health" (See Appendix, Table 3.3).

Occupation Differences. Lastly, office workers within different functions scored differently on "Mental Health", "Household and Finance", "Give Meaning" (See Appendix, Table 3.4). Again, a post-hoc comparison was conducted. Regarding "Mental Health", individuals working in Support or Administration scored significantly higher than Task Coordinators (MD = .27, SE = .07), and Supervisors (MD = .24, SE = .08). Employees also exceeded Task Coordinators (MD = .19, SE = .06). For "Household and Finance", the occupations Support or Administration and Employees scored significantly higher than Supervisors (MD = .23, SE = .08; MD = .23, SE = .07). Lastly, individuals within Support or Administration reported higher scores for "Give Meaning" in comparison to Employees (MD = .20, SE = .05), Task Coordinators (MD = .28, SE = .06), Supervisors (MD = .31, SE = .07), and Directors (MD = .50, SE = .17).

Rescue Worker Sample

Average Life Task Test Score. As for office workers, the influence of demographic characteristics on the average Life Task Test (LTT) score was investigated in the sample of rescue workers. Again, multiple One-way ANOVA analyses were conducted. No significant difference was found between age groups, female and male rescue workers, between various occupations in the field.

Separate Life Task Test Scores. For separate Life Task Test (LTT) scores the influence of demographic variables in the rescue work sample was also analyzed through multiple MANOVA analyses (See Appendix, Table 4). A significant difference was found between age groups (F(20, 1624) = 1.79, p = < .05, pη^2 = .02). Also, overall the scores of female and male rescue workers varied significantly (F(5, 406) = 5.67, p = < .001, pη^2 = .07). No significant difference was found between different rescue-work occupations.

Age Group Differences. Between age categories, only "Household and Finance" differed substantially (See Appendix, Table 5.1). In a post-hoc comparison, 31 to 40-year-old and 41 to 50-year-old rescue workers scored higher than respective 51- to 60-year-old workers (*MD* = .29*, SE* = .08; *MD* = .22*, SE* = .07).

Gender Differences. Regarding gender, the sub-scores "Social Life", "Mental Health", "Household and Finance" differed significantly (See Appendix, Table 5.2). In comparison to their male counterparts, female rescue workers scored higher for all LTT scores, except for "Social Life" (See Appendix, Table 5.3).

DISCUSSION

The LTT is developed to measure perceived effectiveness in life tasks functioning of rescue workers (Bakker et al., 2019). The objectives of the present study are to replicate and to determine the generalisability of Bakker et al.'s (2019) findings in clinical samples of rescue workers and office workers, respectively. The findings of the present study confirm that most of Bakker et al.'s original findings are replicable in a new clinical sample of rescue workers and generalisable to a clinical sample of office workers. However, concurrent validity findings of the LTT in relation to the VOS-D subscales could not be replicated. These results are discussed in the following subsections.

Psychometric Properties. Firstly, the reliability estimates of all LTT subscales are shown to be within an acceptable range, exceeding α = .60 in both samples, after adjusting the 20-item model to the 19-item model. The removed Household and Finance item is not related strongly enough to any of the subscales to warrant further inclusion. Secondly, the Giving Meaning reliability estimates are relatively low and could not be increased by removal of an item. This seems to be a reflection of the broadness of the construct (i.e., eudaimonia) being measured (see Hammell, 2004). However, a higher Cronbach's alpha is not desirable per se, as long as the subscale outcomes are easily interpretable (Taber, 2018).

Furthermore, present results suggest adequate validity of perceived effectiveness in LTT domains in relation to negative affect. Additionally, perceived effectiveness in Maintaining Mental Health was shown to be related with somatic complaints. However, validity was overall poorly supported between LTT and VOS-D subscales in the present study, which mainly found low effect sizes, whereas the associations found in the replicated study were substantially stronger. As the mean questionnaire scores were quite similar between samples, rather the difference in sample size might have accounted for the discrepancies, with the present study reflecting the true population value more accurately due to better statistical power. In support of the present results, Clark et al. (2012) found that workplace stressors and private life stressors both account for mental health problems but do so independently.

Model Fit. The present model fit index estimates in both samples showed remarkably better fit on the data compared to the replicated study (Bakker et al., 2019). The previous, smaller sample size might have resulted in underestimation of model fit (see Wolf et al., 2013). Presently, the 17-item model shows the best fit. However, the 19-item model is retained for content validity. Moreover, the tested models were found to fit slightly less well on the office worker data, suggesting slight heterogeneity between the populations in regard to life task domains.

Implications

The LTT can be used in a multiplicity of workplace settings, both relating to rescue workers and office workers, for the purpose of identifying problem areas and strengths of a worker's life task functioning. In practice, the LTT can contribute to psychological interventions aimed at improving resourcefulness and well-being of workers. In research, the LTT enables examination of relationships between aspects of life task functioning and other variables of interest like fatigue, satisfaction, health symptoms, and job performance, as well as measurement of treatment effects regarding life task domains. Further research in this matter could

provide new insights regarding different focal points required for optimal treatment of diminished daily private and/or work functioning in each population. In prevention, application of the LTT might serve to improve awareness on the risk of losing effectivity in life tasks. This study shows that a highly demanding job can lower the perceived effectiveness in private life tasks, especially at an older age and at a higher job level. Whereas maintaining effectiveness in life tasks is relevant to all workers, in rescue work and in office jobs, these results may point towards more specific attention and monitoring being needed in mentioned subgroups.

Limitations

While the present study provides validity evidence for the LTT, there are also several limitations. First, the office worker sample consists of all kinds of participants that are not rescue workers (i.e., not working in life-threatening situations). There may, however, be differences between job sectors with regard to life tasks that are not accounted for in the present study. Second,

the rescue worker sample wholly consists of police personnel, as in Bakker et al.'s (2019) study, and might, therefore, not be representative of the total rescue worker population. Therefore, there is a need for follow-up research into possible differences between police personnel, paramedics, firefighters, and military personnel. Third, both samples consist of workers that were eligible for treatment for psychological complaints, often in combination with sickness absence from work. The present findings might, therefore, only be representative of the clinical populations and not of the healthy or general populations. A final limitation concerns that we were not yet able to study the concurrent validity of the LTT scales in relation to existing, validated subscales measuring similar constructs as are intended to be covered by the five life task domains in the LTT. This might provide further evidence of construct validity of the LTT subscales across the five domains. Nonetheless, the present paper underscores the importance of the effectiveness in private life tasks functioning of workers in regards to their psychological wellbeing. ∎

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References

Bakker, H., Van Veldhoven, M., Gaillard, T., & Hertogs, R. (2020). Which rescue workers benefit from preventive training in self-management to improve mental health? *International Journal of Stress Prevention and Well-Being, 4*(2), ISSN 2397-7698. https://www.nationalwellbeingservice.com/Journals

aan het Rot, M., Hogenelst, K., & Schoevers, R. A. (2012). Mood disorders in everyday life: A systematic review of experience sampling and ecological momentary assessment studies. *Clinical Psychology Review, 32*(6), 510-523. https://doi.org/10.1016/j.cpr.2012.05.007

Adler, A. (1997). *Understanding life* (C. Brett, Ed.). Oneworld Publications. (First published as *The Science of Living* in 1929.)

Alessandri, G., Perinelli, E., De Longis, E., Schaufeli, W. B., Theodorou, A., Borgogni, L., Capara, G. V., & Cinque, L. (2018). Job burnout: The contribution of emotional stability and emotional self-efficacy beliefs. *Journal of Occupational and Organizational Psychology, 91*(4), 823-851. https://doi.org/10.1111/joop.12225

Allan, B. A., Duffy, R. D., & Douglass, R. (2015). Meaning in life and work: A developmental perspective. *Journal of Positive Psychology, 10*(4), 323-331. https://doi.org/10.1080/17439760.2014.950180

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of occupational health psychology, 22*(3), 273-285. http://doi.org/10.1037/ocp0000056

Bakker, A. H. M., Van Veldhoven, M. J. P. M., Gaillard, A. W. K., & Feenstra, M. (2019). The impact of critical Incidents and workload on functioning in the private life of police officers: Does weakened mental health act as a mediator? *Policing: A Journal of Policy and Practice, 15*(2), 817-831. https://doi.org/10.1093/police/paz051

Bakker, H., van Veldhoven, M., Gaillard, T., Hertogs, R., & Feenstra, M. (2019). "The functioning of rescue workers in life tasks: development of a test", *International Journal of Emergency Services, 9*(1), 34-46. https://doi.org/10.1108/IJES-03-2019-0014

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147. https://doi.org/10.1037/0003-066X.37.2.122

Bandura, A. (2004). Health promotion by social cognitive means. *Health Education and Behavior, 31*(2), 143-164. https://doi.org/10.1177/1090198104263660

Benedek, D. M., Fullerton, C., & Ursano, R. J. (2007). First responders: Mental health consequences of natural and human-made disasters for public health and public safety workers. *Annual Review of Public Health, 28*(1), 55-68. https://doi.org/10.1146/annurev.publhealth.28.021406.144037

Bergers, G. P. A., Marcelissen, F. H. G., & De Wolff, C. J. (1986). *Vragenlijst organisatiestress-Doetinchem: Handleiding* [Organisational stress questionnaire-Doetinchem] [Testing manual]. Radboud Universiteit Nijmegen

Britt, T. W., Shen, W., Sinclair, R. R., Grossman, M. R., & Klieger, D. M. (2016). How much do we really know about employee resilience? *Industrial and Organizational Psychology, 9*(2), 378-404. https://doi.org/10.1017/iop.2015.107

Bradley, B., DeFife, J. A., Guarnaccia, C., Phifer, J., Fani, N., Ressler, K. J., & Westen, D. (2011). Emotion dysregulation and negative affect: Association with psychiatric symptoms. *Journal of Clinical Psychiatry, 72*(5), 685-691. https://doi.org/10.4088/JCP.10m06409blu

Cantor, N., Norem, J., Langston, C., Zirkel, S., Fleeson, W., & Cook-Flannagan, C. (1991). Life tasks and daily life experience. *Journal of Personality, 59*(3), 425-451. https://doi.org/10.1111/j.1467-6494.1991.tb00255.x

Clark, C., Pike, C., McManus, S., Harris, J., Bebbington, P., Brugha, T., Jenkins, R., Meltzer, H., Weich, S., & Stansfeld, S. (2012). The contribution of work and non-work stressors to common mental disorders in the 2007 Adult Psychiatric Morbidity Survey. *Psychological Medicine, 42*(4), 829-842. https://doi.org/10.1017/s0033291711001759

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309-319. https://doi.org/10.1037/1040-3590.7.3.309

Clausen, T., & Borg, V. (2011). Job demands, job resources and meaning at work. *Journal of Managerial Psychology, 26*(8), 665-681. https://doi.org/10.1108/02683941111181761

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310-357. https://doi.org/10.1037/0033-2909.98.2.310

Craig, L., & Kuykendall, L. (2019). Examining the role of friendship for employee well-being. *Journal of Vocational Behavior, 115*. https://doi.org/10.1016/j.jvb.2019.06.001

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01

Ferguson, M. (2012). You cannot leave it at the office: Spillover and crossover of coworker incivility. *Journal of Organizational Behavior, 33*(4), 571-588. https://doi.org/10.1002/job.774

Garrosa, E., Moreno-Jiménez, B., Liang, Y., & González, J. L. (2008). The relationship between socio-demographic variables, job stressors, burnout, and hardy personality in nurses: An exploratory study. *International Journal of Nursing Studies, 45*(3), 418-427. https://doi.org/10.1016/j.ijnurstu.2006.09.003

Gazica, M. W., & Spector, P. E. (2015). A comparison of individuals with unanswered callings to those with no calling at all. *Journal of Vocational Behavior, 91*, 1-10. https://doi.org/10.1016/j.jvb.2015.08.008

Gershon, R. R. M., Barocas, B., Canton, A. N., Xianbin Li, & Vlahov, D. (2009). Mental, physical, and behavioral outcomes associated with perceived work stress in police officers. *Criminal Justice and Behavior, 36*(3), 275-289. https://doi.org/10.1177/0093854808330015

Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work–family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5*(1), 111-126. https://doi.org/10.1037/1076-8998.5.1.111

Hammell, K. W. (2004). Dimensions of meaning in the occupations of daily life. *Canadian Journal of Occupational Therapy, 71*(5), 296-305. https://doi.org/10.1177/000841740407100509

Hobfoll, S. E., Freedy, J., Lane, C., & Geller, P. (1990). Conservation of social resources: Social support resource theory. *Journal of Social and Personal Relationships, 7*(4), 465-478. https://doi.org/10.1177/0265407590074004

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Huber, M., André Knottnerus, J., Green, L., van der Horst, H., Jadad, A. R., Kromhout, D., Leonard, B., Lorig, K., Loureiro, M. I., van der Meer, J. W. M., Schnabel, R., van Weel, C., & Smid, H. (2011). How should we define health? *BMJ , 343*, Article d4163. https://doi.org/10.1136/bmj.d4163

Huber, M., van Vliet, M., Giezenberg, M., Winkens, B., Heerkens, Y., Dagnelie, P. C., & Knottnerus, J. A. (2016). Towards a 'patient-centred' operationalisation of the new dynamic concept of health: A mixed methods study. *BMJ Open, 6*, Article e010091. https://doi.org/10.1136/bmjopen-2015-010091

Hystad, S. W., Eid, J., & Brevik, J. I. (2011). Effects of psychological hardiness, job demands, and job control on sickness absence: A prospective study. *Journal of Occupational Health Psychology, 16*(3), 265-278. https://doi.org/10.1037/a0022904

Karademas, E. C. (2007). Positive and negative aspects of well-being: Common and specific predictors. *Personality and Individual Differences, 43*(2), 277-287. https://doi.org/10.1016/j.paid.2006.11.031

Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology, 37*(1), 1-11. https://doi.org/10.1037/0022-3514.37.1.1

Kremyar, A. J., Lee, T. T. C., Ajayi, W., Friedhoff, L. A., & Graham, J. R. (2020). Measuring positive health behaviors and outcomes with low scores on MMPI–2–RF somatic scales. *Journal of Personality Assessment, 102*(1), 36-44. https://doi.org/10.1080/00223891.2018.1514311

Luteijn, F., & Kok, A. R. (1985). *NVM Nederlandse verkorte MMPI* [Dutch shortened version of the MMPI] (Rev. ed.) [Testing manual]. Swets & Zeitlinger.

Maddi, S. R. (2002). The story of hardiness: Twenty years of theorizing, research, and practice. *Consulting Psychology Journal: Practice and Research, 54*(3), 173-185. https://doi.org/10.1037/1061-4087.54.3.173

Meltzer, H., Bebbington, P., Brugha, T., Farrell, M., & Jenkins, R. (2013). The relationship between personal debt and specific common mental disorders. *European Journal of Public Health, 23*(1), 108-113. https://doi.org/10.1093/eurpub/cks021

Muris, P. (2002). Relationships between self-efficacy and symptoms of anxiety disorders and depression in a normal adolescent sample. *Personality and Individual Differences, 32*(2), 337-348. https://doi.org/10.1016/S0191-8869(01)00027-7

Odle-Dusseau, H. N., Matthews, R. A., & Wayne, J. H. (2018). Employees' financial insecurity and health: The underlying role of stress and work–family conflict appraisals. *Journal of Occupational and Organizational Psychology, 91*(3), 546-568. https://doi.org/10.1111/joop.12216

Peterson, C., Park, N., & Seligman, M. E. P. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies, 6*(1), 25-41. https://doi.org/10.1007/s10902-004-1278-z

Quilty, L. C., van Ameringen, M., Mancini, C., Oakman, J., & Farvolden, P. (2003). Quality of life and the anxiety disorders. *Journal of Anxiety Disorders, 17*(4), 405-426. https://doi.org/10.1016/s0887-6185(02)00225-6

Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2015). Resilience training in the workplace from 2003 to 2014: A systematic review. *Journal of Occupational and Organizational Psychology, 88*(3), 533-562. https://doi.org/10.1111/joop.12120

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*(1), 141-166. https://doi.org/10.1146/annurev.psych.52.1.141

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*(3), 293-315. https://doi.org/10.1002/job.248

Segrin, C., & Rynes, K. N. (2009). The mediating role of positive relations with others in associations between depressive symptoms, social skills, and perceived stress. *Journal of Research in Personality, 43*(6), 962-971. https://doi.org/10.1016/j.jrp.2009.05.012

Segrin, C., & Taylor, M. (2007). Positive interpersonal relationships mediate the association between social skills and psychological well-being. *Personality and Individual Differences, 43*(4), 637-646. https://doi.org/10.1016/j.paid.2007.01.017

Sonnentag, S., Kuttler, I., & Fritz, C. (2010). Job stressors, emotional exhaustion, and need for recovery: A multi-source study on the benefits of psychological detachment. *Journal of Vocational Behavior, 76*(3), 355-365. https://doi.org/10.1016/j.jvb.2009.06.005

Staland-Nyman, C., Hensing, G., & Alexanderson, K. (2008). Associations between strain in domestic work and self-rated health: A study of employed women in Sweden. *Scandinavian Journal of Public Health, 36*(1), 21-27. https://doi.org/10.1177/1403494807085307

Steensma, H., den Heijer, M., & Stallen, V. (2006). Research note: Effects of resilience training on the reduction of stress and depression among Dutch workers. *International Quarterly of Community Health Education, 27*(2), 145-159. https://doi.org/10.2190/IQ.27.2.e

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*(6), 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

ten Brummelhuis, L. L., & Bakker, A. B. (2012). A resource perspective on the work-home interface: The work-home resources model. *American Psychologist, 67*(7), 545-556. https://doi.org/10.1037/a0027974

Thurston, R. C., Sherwood, A., Matthews, K. A., & Blumenthal, J. A. (2011). Household responsibilities, income, and ambulatory blood pressure among working men and women. *Psychosomatic Medicine, 73*(2), 200-205. https://doi.org/10.1097/PSY.0b013e3182080e1a

Too, L. S., & Butterworth, P. (2018). Psychosocial job stressors and mental health: The potential moderating role of emotion regulation. *Journal of Occupational and Environmental Medicine, 60*(10), e518-e524. https://doi.org/10.1097/JOM.0000000000001416

Väänänen, A., Toppinen-Tanner, S., Kalimo, R., Mutanen, P., Vahtera, J., & Peiró, J. M. (2003). Job characteristics, physical and psychological symptoms, and social support as antecedents of sickness absence among men and women in the private industrial sector. *Social Science and Medicine, 57*(5), 807-824. https://doi.org/10.1016/S0277-9536(02)00450-1

van den Broeck, A., Vansteenkiste, M., de Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress, 22*(3), 277-294. https://doi.org/10.1080/02678370802393672

Vella-Brodrick, D. A., Park, N., & Peterson, C. (2009). Three ways to be happy: Pleasure, engagement, and meaning – Findings from Australian and US samples. *Social Indicators Research, 90*(2), 165-179. https://doi.org/10.1007/s11205-008-9251-6

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement, 73*(6), 913-934. https://doi.org/10.1177/0013164413495237