Tool-Box

Standardized Tool-Box for the assessment of the stress-physiological consequences of digitalization for medical practitioners

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stress-physiological consequences of digitalization for medical practitioners

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Abstract

A valid assessment of digitization-associated stress appears to be crucial for the successful and health-promoting design of digitization processes in the healthcare sector. The present Tool-Box aims to contribute to this goal by providing an overview of central methods for assessing stress and associated constructs in the context of digitization processes, as well as their advantages and disadvantages. The methods included in the Tool-Box were selected based on an extensive review of existing literature on assessment of stress and associated constructs in the context of digitalization processes and beyond. In addition, we conducted expert interviews and pilot studies for the final selection and shaping of the Tool-Box.

The target groups of our Tool-Box are researchers as well as all individuals which are involved in the design and implementation of digital innovations within the health care sector: monitoring digitalization-associated stress throughout the entire implementation process with methodologically sound tools might be one of the key factors for successful digital transformations.

Preface

When I started doing research on digitalization-associated stress, I was surprised on how little is known about this, from my perspective, very important topic. One of the first things I noticed was the large variety of different measures used to operationalize stress and stress-associated constructs. This was how I got the idea of creating a Tool-Box which systemizes existing methods and present them in a concise and easily understood manner. I hope that the present version of the Tool-Box can meet these expectations. My idea is that this version of the Tool-Box forms a basic structure which is constantly refined and complemented to ensure that future developments within the field are reflected within the Tool-Box.

Indeed, such a large project can hardly be realized without rich and manifold support. First of all, I would like to thank the Else Kröner Fresenius Center for Digital Health at the Faculty of Medicine Carl Gustav Carus, TU Dresden for their financial, substantive and logistical support.

Next, I would like to thank Dr. med. Felix v. Bechtolsheim for his clinical supervision. Beyond, I would like to thank Prof. Dr. med. Jürgen Weitz and Prof. Dr. Clemens Kirschbaum for their supervision. Last but not least I would like to thank my research group, above all (in alphabetical order) Jessica Ewerhardy, Nora Gienger, Josi Harzbecker, and Nicole Mager.

1. Introduction

Digitization processes have long been part of everyday life for clinical staff. So far, however, it is unclear how this increasing digitization affects the health of users. One particularly relevant factor here is chronic stress. Initial studies indicate that digitization processes can influence the stress experience of users. These digitization-associated changes in stress perception have a very high relevance. On the one hand, hospital staff is already one of the occupational groups most affected by chronic stress. On the other hand, chronic stress has a strong impact on physical and mental health. Last but not least, there are indications that an increased stress level is associated with a lower use of digital innovations. Therefore, a better understanding of the effects of digitalization on the stress levels of clinical staff seems crucial for a health-promoting, successful digital transformation of the healthcare system.

In order to be able to make well-founded statements about digitization-associated changes in the stress level of medical personnel, a standardized, methodical-valid and comprehensive procedure is required. However, this has not yet been established. On the contrary, the majority of the few previously conducted studies used self-designed and thus psychometrically not-validated procedures. This approach severely limits the validity of these studies. A possible reason for methodological weaknesses of previous studies could be a lack of transparency about valid psychological methods for the assessment of acute and chronic stress, as well as associated constructs. This Tool-Box aims to address this shortcoming by providing a clear presentation of the most widely used methods. In addition to the original sources of these procedures, further central information is given, which is meant to enable the researcher to select the most suitable methodology for her/him.

Key information selected included the reliability of the method, the presence of a norm sample, as well as the application of this method in the context of research on digitization, stress, and/or clinical staff.

The Tool-Box does not claim to be exhaustive, but I hope that it will contribute to the successful and health-promoting design of digitization processes. Suggestions regarding possible additions as well as general suggestions are very welcome (magdalena.wekenborg@tu-dresden.de).

2. Tool-Box

2.1 Detailed description of the methods

2.1.1 Stress

2.1.2 Burnout

2.1.3 Depression

2.1.4 Anxiety

2.1.5 General Health

2.1.6 Work and Digitalization

Perceived Stress Scale

(PSS-10; Cohen, S., Karmack, T. & Mermelstein, R., 1983)

Description:

The „Perceived Stress Scale“ (PSS-10) is a self-report scale that measures perceived stress by S. Cohen, T. Karmack and R. Mermelstein (1983).

Details:

Languages	English, German
Items	10
Subscales	2 (Perceived Helplessness, Perceived Self-Efficacy)
Answering format	5-point Likert-Scale
Example Item	„In the last month, how often have you been upset because of something that happened unexpectedly?“
Reliability (Cronbach's Alpha)	0.70-0.80
Other Versions	Short version: Perceived Stress Scale 4 (PSS-4)

Sources:

Original Paper: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of Perceived Stress. *Journal of Health and Social Behavior*, 24, 385-396.

Validation Paper: Lee, E.-H. (2012). Review of the Psychometric Evidence of the Perceived Stress Scale. *Asian Nursing Research*, 6(4), 121-127.

Application Paper: Ghahramani, N., Lendel, I., Haque, R., & Sawruk, K. (2009). User Satisfaction with Computerized Order Entry System and Its Effect on Workplace Level of Stress. *Journal of Medical Systems*, 33(3), 199-205.

Single-item Measure of Stress Symptoms

(Salminen, S., Kouvonen, A., Koskinen, A., Joensuu, M. & Väänänen, A., 2014)

Description:

The „Single-item Measure of Stress Symptoms” is a concise measure to screen stress at work by S. Salminen, A. Kouvonen, A. Koskinen, M. Joensuu and A. Väänänen (2014).

Details:

Languages	English
Items	1
Subscales	/
Answering format	5-point Likert-Scale
Example Item	„Stress refers to a situation where a person feels tense, restless, nervous, or anxious, or is unable to sleep at night because his /her mind is troubled all the time. Do you feel that kind of stress these days?”
Reliability (Cronbach’s Alpha)	/
Other Versions	/

Sources:

Original Paper: Salminen, S., Kouvonen, A., Koskinen, A., Joensuu, M., & Väänänen, A. (2014). Is a single item stress measure independently associated with subsequent severe injury: a prospective cohort study of 16,385 forest industry employees. *BMC Public Health*, 14(1), 1-7.

Validation Paper: Elo, A.-L., Leppänen, A., & Jahkola, A. (2003). Validity of a single-item measure of stress symptoms. *Scandinavian Journal of Work, Environment & Health*, 29(6), 444-451.

Application Paper: Chesley, N. (2014). Information and communication technology use, work intensification and employee strain and distress. *Work, employment and society*, 28(4), 589-610.

Trier Inventory for Chronic Stress

(TICS; Petrowski, K., Kliem, S., Sadler, M., Meuret, A. E., Ritz, T. & Brähler, E., 2018)

Description:

The „Trier Inventory for Chronic Stress“ (TICS) is an instrument to measure chronic stress by K. Petrowski, S. Kliem, M. Sadler, A. E. Meuret, T. Ritz and E. Brähler (2018).

Details:

Languages	English, German
Items	57
Subscales	9 (Work Overload, Social Overload, Pressure to Perform, Work Dicontent, Excessive Demands at Work, Lack of Social Recognition, Social Tensions, Social Isolation, Chronic Worrying)
Answering format	5-point Likert-Scale
Example Item	„I feel that my performance is not recognized enough.“
Reliability (Cronbach's Alpha)	0.80-0.90
Other Versions	/

Sources:

Original Paper: Petrowski, K., Kliem, S., Sadler, M., Meuret, A. E., Ritz, T., & Brähler, E. (2018). Factor structure and psychometric properties of the english version of the trier inventory for chronic stress (TICS-E). *BMC Medical Research Methodology*, 18(1), 1-8.

Validation Paper: Petrowski, K., Kliem, S., Sadler, M., Meuret, A. E., Ritz, T., & Brähler, E. (2018). Factor structure and psychometric properties of the english version of the trier inventory for chronic stress (TICS-E). *BMC Medical Research Methodology*, 18(1), 1-8.

Application Paper: Nienhaus, K., Hagemann, W., & Kraus, T. (2008). Diagnostik zu arbeitsbedingtem Stress und Stressfolgen bei Ärzten. *Arbeitsmedizin Sozialmedizin Umweltmedizin*, 43(5), 273-276.

Dundee Stress State Questionnaire

(DSSQ; Matthews, G., Joyner, L., Gilliland, K., Campbell, S., Falconer, S. & Huggins, J., 1999)

Description:

The „Dundee Stress State Questionnaire“ (DSSQ) is a measure to determine acute task-induced stress by G. Matthews, L. Joyner, K. Gilliland, S. Campbell, S. Falconer and J. Huggins (1999).

Details:

Languages	English
Items	76
Subscales	10 (Energetic Arousal, Tense Arousal, Hedonic Tone, Intrinsic Motivation, Self-focus of Attention, Self-Esteem, Confidence and Control, Concentration, Cognitive interference task related, Cognitive interference task irrelevant)
Answering format	5-point Likert-Scale
Example Item	„I was determined to succeed on the task.“
Reliability (Cronbach's Alpha)	0.80-0.90
Other Versions	/

Sources:

Original Paper: Matthews, G., Joyner, L., Gilliland, K., Campbell, S., Falconer, S., & Huggins, J. (1999). Validation of a comprehensive stress state questionnaire: Towards a state big three. *Personality Psychology in Europe*, 7, 335-350.

Validation Paper: Matthews, G., Joyner, L., Gilliland, K., Campbell, S., Falconer, S., & Huggins, J. (1999). Validation of a comprehensive stress state questionnaire: Towards a state big three. *Personality Psychology in Europe*, 7, 335-350.

Application Paper: Klein, M. I., Mouraviev, V., Craig, C., Salamone, L., Plerhoples, T. A., & Wren, S. M. (2014). Mental stress experienced by first-year residents and expert surgeons with robotic and laparoscopic surgery interfaces. *Journal of Robotic Surgery*, 8(2), 149-155.

Perceived Stress Questionnaire

(PSQ-30; Levenstein, S., Prantera, C., Varvo, V., Scribano, M. L., Berto, E., Luzi, C. & Andreoli, A., 1993)

Description:

The „Perceived Stress Questionnaire“ (PSQ-30) is an instrument to measure current subjective strain by S. Levenstein, C. Prantera, V. Varvo, M. L. Scribano, E. Berto, C. Luzi and A. Andreoli (1993).

Details:

Languages	English, German
Items	30
Subscales	7 (Harassment, Overload, Irritability, Lack of Joy, Fatigue, Worries, Tension)
Answering format	4-point Likert-Scale
Example Item	„You are irritable and grouchy.“
Reliability (Cronbach's Alpha)	0.80-0.90
Other Versions	/

Sources:

Original Paper: Levenstein, S., Prantera, C., Varvo, V., Scribano, M. L., Berto, E., Luzi, C., & Andreoli, A. (1993). Development of the Perceived Stress Questionnaire: A new tool for psychosomatic research. *Journal of Psychosomatic Research*, 37(1), 19-32.

Validation Paper: Kocalevent, R.-D., Levenstein, S., Fliege, H., Schmid, G., Hinz, A., Brähler, E., & Klapp, B. F. (2007). Contribution to the construct validity of the Perceived Stress Questionnaire from a population-based survey. *Journal of Psychosomatic Research*, 63(1), 71-81.

Application Paper: Mache, S. (2012). Coping with job stress by hospital doctors: a comparative study. *Wiener Medizinische Wochenschrift*, 162(19), 440-447.

Stanford Acute Stress Reaction Questionnaire

(SASRQ; Cardeña, E., Koopman, C., Classen, C., Waelde, L. C. & Spiegel, D., 2000)

Description:

The „Stanford Acute Stress Reaction Questionnaire“ (SASRQ) is a measure of acute stress by E. Cardeña, C. Koopman, C. Classen, L. Waelde and D. Spiegel (2000).

Details:

Languages	English
Items	30
Subscales	5 (Dissociation, Reexperiencing of Trauma, Avoidance, Anxiety and Hyperarousal, Impairment in Functioning)
Answering format	6-point Likert-Scale
Example Item	„I felt restless.“
Reliability (Cronbach's Alpha)	0.64-0.98
Other Versions	/

Sources:

Original Paper: Cardeña, E., Koopman, C., Classen, C., Waelde, L. C., & Spiegel, D. (2000).

Psychometric properties of the Stanford Acute Stress Reaction Questionnaire (SASRQ): A valid and reliable measure of acute stress. *Journal of Traumatic Stress*, 13(4), 719–734.

Validation Paper: Cardeña, E., Koopman, C., Classen, C., Waelde, L. C., & Spiegel, D. (2000).

Psychometric properties of the Stanford Acute Stress Reaction Questionnaire (SASRQ): A valid and reliable measure of acute stress. *Journal of Traumatic Stress*, 13(4), 719–734.

Application Paper: Liao, C., Guo, L., Zhang, C., Zhang, M., Jiang, W., Zhong, Y., Lin, Q., & Liu, Y.

(2021). Emergency stress management among nurses: A lesson from the COVID-19 outbreak in China-a cross-sectional study. *Journal of Clinical Nursing*, 30(3–4), 433–442.

Stress and Coping Inventory

(SCI; Satow, L., 2012)

Description:

The „Stress and Coping Inventory“ (SCI) is a questionnaire to measure current stress load and symptoms by L. Satow (2012). It also determines the use of coping strategies.

Details:

Languages	English, German
Items	54
Subscales	5 (Positive Thinking, Active Stress Coping, Social Support, Support in Faith, Alcohol and Cigarette Consumption)
Answering format	4-point Likert-Scale
Example Item	„Inwieweit haben Sie sich in den letzten drei Monaten durch folgende Unsicherheiten belastet gefühlt?“
Reliability (Cronbach's Alpha)	0.69-0.88
Other Versions	/

Sources:

Original Paper: Satow, L. (2012). SCI - Stress- und Coping-Inventar [Fragebogen mit Beispielen und Skalendokumentation]. In Leibniz-Zentrum für Psychologische Information und Dokumentation (ZPID) (Hrsg.), Elektronisches Testarchiv (PSYNDEX Tests-Nr. 9006508). Trier: ZPID.

Validation Paper: O'Rourke, T., Budimir, S., Pieh, C., & Probst, T. (2021). Psychometric qualities of the English Coping Scales of the Stress and Coping Inventory in a representative UK sample. *BMC Psychology*, 9(1), 1-11.

Primary-Secondary Appraisal Scale

(PASA; Gaab, J., Rohleder, N., Nater, U. M. & Ehlert, U., 2005)

Description:

The „Primary-Secondary Appraisal Scale“ (PASA) is a measure to assess cognitive appraisal by J. Gaab, N. Rohleder, U. M. Nater and U. Ehlert (2005).

Details:

Languages	English, German
Items	16
Subscales	1 (Consumption)
Answering format	6-point Likert-Scale
Example Item	„The situation is important for me.“
Reliability (Cronbach's Alpha)	0.63-0.83
Other Versions	/

Sources:

Original Paper: Gaab, J., Rohleder, N., Nater, U. M., & Ehlert, U. (2005). Psychological determinants of the cortisol stress response: The role of anticipatory cognitive appraisal.

Psychoneuroendocrinology, 30, 599–610.

Validation Paper: Gaab, J., Rohleder, N., Nater, U. M., & Ehlert, U. (2005). Psychological determinants of the cortisol stress response: The role of anticipatory cognitive appraisal.

Psychoneuroendocrinology, 30, 599–610.

Beliefs About Stress Scale

(BASS; Laferton, J. A. C., Stenzel, N. M. & Fischer, S., 2018)

Description:

The „Beliefs About Stress Scale“ (BASS) is an instrument to determine beliefs about stress by J. A. C. Laferton, N. M. Stenzel and S. Fischer (2018).

Details:

Languages	English, German
Items	24
Subscales	3 (Negative Believes About Stress, Controllability, Positive Believes About Stress)
Answering format	4-point Likert-Scale
Example Item	„Being stressed is not problematic for me to deal with.“
Reliability (Cronbach's Alpha)	0.73-0.87
Other Versions	/

Sources:

Original Paper: Laferton, J. A. C., Stenzel, N. M., & Fischer, S. (2018). The Beliefs About Stress Scale (BASS): Development, Reliability, and Validity. *International Journal of Stress Management*, 25(1), 72–89.

Validation Paper: Laferton, J. A. C., Stenzel, N. M., & Fischer, S. (2018). The Beliefs About Stress Scale (BASS): Development, Reliability, and Validity. *International Journal of Stress Management*, 25(1), 72–89.

Stress-Reaktivitäts-Skala

(SRS; Schulz, P., Jansen, L. J. & Schlotz, W., 2005)

Description:

The „Stress-Reaktivitäts-Skala“ (SRS) is a German questionnaire that measures general and strain-specific stress reactivation by P. Schulz, L. J. Jansen and W. Schlotz (2005).

Details:

Languages	German
Items	29
Subscales	6 (bei Arbeitsüberlastung, bei sozialen Konflikten, bei sozialer Bewertung, bei Misserfolg, in der Vorbereitungsphase, in der Post-Stress-Phase)
Answering format	3-point Likert-Scale
Example Item	„Wenn ich etwas vorhabe, das für mich sehr wichtig ist, ...“
Reliability (Cronbach's Alpha)	0.71-0.82
Other Versions	/

Sources:

Original Paper: Schulz, P., Jansen, L. J., & Schlotz, W. (2005). Stressreaktivität: Theoretisches Konzept und Messung. *Diagnostica*, 51(3), 124–133.

Validation Paper: Schulz, P., Jansen, L. J., & Schlotz, W. (2005). Stressreaktivität: Theoretisches Konzept und Messung. *Diagnostica*, 51(3), 124–133.

Stressverarbeitungsfragebogen

(SVF; Janke, W., Erdmann, G., Kallus, K. W. & Boucsein, W., 1997)

Description:

The „Stressverarbeitungsfragebogen“ (SVF) is a German instrument to measure coping strategies in incriminatory situations by W. Janke, G. Erdmann, K. W. Kallus and W. Boucsein (1997).

Details:

Languages	German
Items	120
Subscales	2 (Positive Coping, Negative Coping)
Answering format	5-point Likert-Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.65
Other Versions	/

Sources:

Original Paper: Janke, W., Erdmann, G. , Kallus, K. W., & Boucsein, W. (1997).

Stressverarbeitungsfragebogen (SVF 120). Göttingen: Hogrefe.

Validation Paper: Janke, W., Erdmann, G. , Kallus, K. W., & Boucsein, W. (1997).

Stressverarbeitungsfragebogen (SVF 120). Göttingen: Hogrefe.

Stress and Coping Process Questionnaire

(UBV; Reicherts, M. & Perrez, M., 1994)

Description:

The „Stress and Coping Process Questionnaire“ (UBV) is a questionnaire to assess stress and coping behavior by M. Reicherts and M. Perrez (1994).

Details:

Languages	English, German
Items	79
Subscales	7 (Emotional Stress Reaction, Situation Appraisal, Intention to Cope, Self-related Coping, Environment-related Coping, Causal Attributions, Palliation-Inventory)
Answering format	4-point Likert-Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.90
Other Versions	/

Sources:

Original Paper: Reicherts, M., & Perrez, M. (1994). Questionnaire on coping with current stress. *Zeitschrift für klinische Psychologie, Psychopathologie und Psychotherapie*, 42(3), 230-240.

Brief COPE

(Carver, C. S., 1997)

Description:

The „Brief COPE“ is a self-report measure to determine coping strategies by C. S. Carver (1997).

Details:

Languages	English, German
Items	28
Subscales	4 (Substance Use, Religion, Humor, Behavioral Disengagement)
Answering format	4-point Likert-Scale
Example Item	<i>"I've been making fun of the situation."</i>
Reliability (Cronbach's Alpha)	0.50-0.90
Other Versions	/

Sources:

Original Paper: Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief. *International Journal of Behavioral Medicine*, 4(1), 92–100.

Validation Paper: Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief. *International Journal of Behavioral Medicine*, 4(1), 92–100.

Application Paper: Knoll, N., Rieckmann, N., & Schwarzer, R. (2005). Coping as a mediator between personality and stress outcomes: a longitudinal study with cataract surgery patients. *European Journal of Personality*, 19(3), 229-247.

4 Items by Motowidlo

(Motowidlo, S. J., Packard, J. S. & Manning, M. R., 1986)

Description:

The „4 Items by Motowidlo“ is a questionnaire to measure chronic stress by S. J. Motowidlo, J. S. Packard and M. R. Manning (1986).

Details:

Languages	English
Items	4
Subscales	/
Answering format	5-point Likert-Scale
Example Item	<i>“I feel a great deal of stress because of my job.”</i>
Reliability (Cronbach’s Alpha)	/
Other Versions	/

Sources:

Original Paper: Motowidlo, S. J., Packard, J. S., & Manning, M. R. (1986). Occupational stress: its causes and consequences for job performance. *Journal of Applied Psychology*, 71(4), 618-629.

Application Paper: Kroth, P. J., Morioka-Douglas, N., Veres, S., Babbott, S., Poplau, S., Qeadan, F., Parshall, C., Corrigan, K., & Linzer, M. (2019). Association of electronic health record design and use factors with clinician stress and burnout. *JAMA Network Open*, 2(8), e199609-e199609.

Arbeitsbezogene Verhaltens- und Erlebensmuster

(AVEM; Schaarschmidt, U. & Fischer, A., 2008)

Description:

The „Arbeitsbezogene Verhaltens- und Erlebensmuster“ (AVEM) is a German multi-dimensional method to measure behavioral and experiential attributes by U. Schaarschmidt and A. Fischer (2008).

Details:

Languages	German
Items	66
Subscales	3 (Arbeitsengagement, Widerstandskraft gegenüber beruflichen Belastungen, Berufsausübung begleitende Emotionen)
Answering format	5-point Likert-Scale
Example Item	„Die Arbeit ist für mich der wichtigste Lebensinhalt.“
Reliability (Cronbach's Alpha)	0.79-0.87
Other Versions	/

Sources:

Original Paper: Schaarschmidt, U. & Fischer, A. (2008). *Arbeitsbezogenes Verhaltens- und Erlebensmuster. Handanweisung* (3. Aufl.). Dr. G. Schuhfried, Frankfurt/M.

Validation Paper: Schaarschmidt, U. & Fischer, A. (2008). *Arbeitsbezogenes Verhaltens- und Erlebensmuster. Handanweisung* (3. Aufl.). Dr. G. Schuhfried, Frankfurt/M.

Stressbezogene Arbeitsanalyse für Klinikärzt*innen

(ISAK; Keller, M., Bamberg, E., Kersten, M. & Nienhaus, A., 2013)

Description:

The „Stressbezogene Arbeitsanalyse für Klinikärzt*innen“ (ISAK) is a German measure to identify areas of concern in the medical work area by M. Keller, E. Bamberg, M. Kersten and A. Nienhaus (2013).

Details:

Languages	German
Items	84
Subscales	11 (Zeitdruck, Unsicherheit, Frustration übergreifender Motive, Probleme mit Mitarbeitenden, Probleme mit anderen Berufsgruppen, Arbeitszeiten und Dienste, Soziale Stressoren mit Patienten, Emotionale Dissonanz, Behandlung von Patienten mit schwierigen Krankheitsverläufen, Gefahr von Übergriffen durch Patienten)
Answering format	5-point Likert-Scale
Example Item	„Wie häufig stehen Sie unter Zeitdruck?“
Reliability (Cronbach's Alpha)	0.68-0.90
Other Versions	/

Sources:

Original Paper: Keller, M., Bamberg, E., Kersten, M., & Nienhaus, A. (2013). Validierung des Instruments zur stressbezogenen Arbeitsanalyse für Klinikärztinnen und -ärzte (ISAK). *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, 57(1), 3–21.

Validation Paper: Keller, M., Bamberg, E., Kersten, M., & Nienhaus, A. (2013). Validierung des Instruments zur stressbezogenen Arbeitsanalyse für Klinikärztinnen und -ärzte (ISAK). *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, 57(1), 3–21.

Irritation Scale

(IS; Mohr, G., Rigotti, T. & Muller, A., 2005)

Description:

The „Irritation Scale“ (IS) is an instrument that measures work strain by G. Mohr, T. Rigotti and A. Muller (2005).

Details:

Languages	English, German
Items	8
Subscales	2 (Emotional Irritation, Cognitive Irritation)
Answering format	7-point Likert-Scale
Example Item	<i>“I have difficulty relaxing after work.”</i>
Reliability (Cronbach's Alpha)	0.85-0.93
Other Versions	/

Sources:

Original Paper: Mohr, G., Rigotti, T., & Muller, A. (2005). Irritation-An instrument assessing mental strain in working contexts. Scale and item parameters from 15 studies. *Zeitschrift für Arbeits- und Organisationspsychologie*, 49(1), 44-48.

Validation Paper: Mohr, G., Rigotti, T., & Muller, A. (2005). Irritation-An instrument assessing mental strain in working contexts. Scale and item parameters from 15 studies. *Zeitschrift für Arbeits- und Organisationspsychologie*, 49(1), 44-48.

Application Paper: Fendel, J.C., Aeschbach, V.M., Göritz, A.S. et al. (2020). A mindfulness program to improve resident physicians' personal and work-related well-being: a feasibility study. *Mindfulness*, 11(6), 1511–1519.

Leipziger Ereignis- und Belastungsinventar

(LEBI; Schulz, A., 2013)

Description:

The „Leipziger Ereignis- und Belastungsinventar“ (LEBI) is a structured interview method to determine critical life events and psychosocial strain by A. Schulz (2013).

Details:

Languages	English, German
Items	/
Subscales	/
Answering format	3-point Likert-Scale
Example Item	<i>„Ich schaffe den Abschluss eines/r Studiums oder Berufsausbildung nicht.“</i>
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Schulz, A. (2013). *Leipziger Ereignis und Belastungsinventar (LEBI)*. GRIN Verlag.

Validation Paper: Ramsenthaler, C., & Fuchs, R. (2020). Evaluation und Assessmentverfahren in der stressbezogenen Prävention und Gesundheitsförderung. In M. Tiemann & M. Mohokum (eds.), *Prävention und Gesundheitsförderung. Springer Reference Pflege – Therapie – Gesundheit* (pp. 1169-1190). Berlin, Heidelberg: Springer.

Application Paper: Ramsenthaler, C., & Fuchs, R. (2020). Evaluation und Assessmentverfahren in der stressbezogenen Prävention und Gesundheitsförderung. In M. Tiemann & M. Mohokum (eds.), *Prävention und Gesundheitsförderung. Springer Reference Pflege – Therapie – Gesundheit* (pp. 1169-1190). Berlin, Heidelberg: Springer.

Social Readjustment Rating Scale

(SRRS; Holmes, T. H. & Rahe, R. H., 1967)

Description:

The „Social Readjustment Rating Scale“ (SRRS) is a questionnaire that measures critical life events by T. H. Holmes and R. H. Rahe (1967).

Details:

Languages	English, German
Items	43
Subscales	/
Answering format	Scale from 0-100
Example Item	“Troubles with the boss.”
Reliability (Cronbach’s Alpha)	0.71-0.79
Other Versions	/

Sources:

Original Paper: Holmes, T. H. & Rahe, R. H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*, 11(2), 213–218.

Validation Paper: Holmes, T. H. & Rahe, R. H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*, 11(2), 213–218.

Application Paper: Smith, C.K., Cullison, S.W., Polis, E., & Holmes, T.H. (1978). Life change and illness onset: importance of concepts for family physicians. *The Journal of Family Practice*, 7(5), 975-981.

Standard Stress Scale

(SSS; Gross, C. & Seebaß, K., 2016)

Description:

The „Standard Stress Scale“ (SSS) is an instrument to assess both chronic and acute stress by C. Gross and K. Seebaß (2016).

Details:

Languages	English, German
Items	11
Subscales	5 (Overcommitment, Enjoyment of Work, Social Distress, Recreational Capacities, Anxiety)
Answering format	5-point Likert-Scale
Example Item	“After a normal day I am exhausted.”
Reliability (Cronbach’s Alpha)	0.58-0.66
Other Versions	/

Sources:

Original Paper: Gross, C. & Seebaß, K. (2016). The standard stress scale (SSS): Measuring stress in the life course. In Blossfeld HP., von Maurice J., Bayer M., Skopek J. (eds.) *Methodological Issues of Longitudinal Surveys* (pp. 233-249). Springer VS, Wiesbaden.

Validation Paper: Gross, C. & Seebaß, K. (2016). The standard stress scale (SSS): Measuring stress in the life course. In Blossfeld HP., von Maurice J., Bayer M., Skopek J. (eds.) *Methodological Issues of Longitudinal Surveys* (pp. 233-249). Springer VS, Wiesbaden.

Maslach Burnout Inventory

(MBI; Maslach, C., Jackson, S. E., & Leiter, M. P., 1996)

Description:

The „Maslach Burnout Inventory“ (MBI) is a self assessment questionnaire that determines burnout symptoms in the working area „human service/client related“ by C. Maslach, M. Leiter und S. Jackson (1996).

Details:

Languages	English, German
Items	22
Subscales	3 (Emotional Exhaustion, Depersonalisation, Personal Accomplishment)
Answering format	7-point Likert-Scale
Example Item	„I feel burnt out from my work.“
Reliability (Cronbach's Alpha)	0.71-0.90
Other Versions	MBI-General Survey (MBI-GS)

Sources:

Original Paper: Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Validation Paper: Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Application Paper: Brown, R., Duck, J., & Jimmieson, N. (2014). E-mail in the workplace: The role of stress appraisals and normative response pressure in the relationship between e-mail stressors and employee strain. *International Journal of Stress Management*, 21(4), 325–347.

Mini-Z Survey

(Mini-Z; Linzer, M., Poplau, S., Abbot, S., Collins, T., Guzman-Corrales, L., Menk, J., ... & Ovington, K., 2016)

Description:

The "Mini-Z Survey" (Mini-Z) is a single-item measure, which assesses satisfaction, stress, burnout, work control, clinic environment chaos and teamwork by M. Linzer, M. Poplau, S. Babbott et al. (2016).

Details:

Languages	English
Items	10
Subscales	0
Answering format	5-point Likert Scale
Example Item	<i>„Overall, I am satisfied with my current job.“</i>
Reliability (Cronbach's Alpha)	0.8
Other Versions	/

Sources:

Original Paper: Linzer, M., Poplau, S., Babbott, S., Collins, T., Guzman-Corrales, L., Menk, J., ... & Ovington, K. (2016). Worklife and wellness in academic general internal medicine: results from a national survey. *Journal of General Internal Medicine*, 31(9), 1004-1010.

Validation Paper: Shimotsu, S., Poplau, S., & Linzer, M. (2015). Validation of a brief clinician survey to reduce clinician burnout. *J Gen Intern Med*, 30(2 suppl), 79-80.

Application Paper: Olson, K., Sinsky, C., Rinne, S. T., Long, T., Vender, R., Mukherjee, S., Bennick, M. & Linzer, M. (2019). Cross-sectional survey of workplace stressors associated with physician burnout measured by the Mini-Z and the Maslach Burnout Inventory. *Stress and Health*, 35(2), 157-175.

Hamburg Burnout Inventory

(HBI; Burisch, M., 2020)

Description:

The “Hamburg Burnout Inventory” (HBI) was developed by Matthias Burisch (2020), which is a 40-item self-rating instrument measuring ten components of burnout.

Details:

Languages	English, German
Items	40
Subscales	10 (Emotional Exhaustion, Personal Accomplishment; Distance, Depressive Reaction to Stress, Helplessness, Inner Void, Tedium, Inability to Unwind, Overtaxing Oneself, Aggressive Reaction to Stress)
Answering format	7-point Likert Scale
Example Item	„I am in a crisis right now and cannot find a way out.“
Reliability (Cronbach’s Alpha)	0.61-0.93
Other Versions	Short version: HBI21

Sources:

Original Paper: Burisch, M. (2020). *HBI-Hamburger Burnout-Inventar: Manual*. Springer Berlin Heidelberg.

Validation Paper: Burisch, M. (2020). *HBI-Hamburger Burnout-Inventar: Manual*. Springer Berlin Heidelberg.

Copenhagen Burnout Inventory

(CBI; Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B., 2005)

Description:

The "Copenhagen Burnout Inventory" (CBI) from T.S. Kristensen, M. Borritz et al. (2005) is a questionnaire with three sub-dimensions: Personal, work-related and client related burnout.

Details:

Languages	English
Items	19
Subscales	3 (Personal Burnout, Work-related Burnout, Client-related Burnout)
Answering format	5-point Likert Scale
Example Item	„How often do you feel tired?“
Reliability (Cronbach's Alpha)	0.85-0.87
Other Versions	/

Sources:

Original Paper: Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192-207.

Validation Paper: Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192-207.

Application Paper: Fadare, O. O., Andreski, M., & Witry, M. J. (2021). Validation of the Copenhagen Burnout Inventory in Pharmacists. *INNOVATIONS in Pharmacy*, 12(2), 4-4.

Oldenburg Burnout Inventory

(OLBI; Demerouti, E., & Bakker, A. B., 2008)

Description:

The "Oldenburg Burnout Inventory" (OLBI) by Demerouti et al. (2001) is a self-report five-point rating scale with eight questions within each of the two dimensions, disengagement and exhaustion.

Details:

Languages	German
Items	16
Subscales	2 (Exhaustion, Disengagement (from Work))
Answering format	4-point Likert Scale
Example Item	<i>„I always find new and interesting aspects in my work.“</i>
Reliability (Cronbach's Alpha)	0.81-0.87
Other Versions	/

Sources:

Original Paper: Demerouti, E., & Bakker, A. B. (2008). The Oldenburg Burnout Inventory: A good alternative to measure burnout and engagement. *Handbook of Stress and Burnout in Health Care*, 65, 78.

Validation Paper: Reis, D., Xanthopoulou, D., & Tsaousis, I. (2015). Measuring job and academic burnout with the Oldenburg Burnout Inventory (OLBI): Factorial invariance across samples and countries. *Burnout Research*, 2(1), 8-18.

Burnout-Screening-Skalen

(BOSS (I-III); Geuenich, K., & Hagemann, W., 2014)

Description:

The "Burnout-Screening-Skalen" (BOSS (I-III)) by K. Geuenich & W. Hagemann (2014) are self-assessment procedures that are used for people who are suspected of having a burnout problem. The first and the second questionnaire are used to record subscales that typically occur in the context of burnout syndrome. BOSS III is taken to record satisfaction and resources in four areas of life.

Details:

Languages	German
Items	I: 30; II: 30; III: 20
Subscales	I: 4; II: 3; III: 4 (I: Beschwerden in den Lebensbereichen Beruf, Eigene Person, Familie, Freunde; II: Körperliche Beschwerden; Kognitive Beschwerden, Emotionale Beschwerden; III: Zufriedenheit und Ressourcen in den Lebensbereichen Beruf, Eigene Person, Familie, Freunde)
Answering format	6-point Likert Scale
Example Item	<i>„I: Ich befinde mich in ständiger Sorge und Anspannung, dass ich meinen Job nicht bewältige. II: Mich quälen heftige Kopfschmerzen. III: Mein Team schätzt mich.“</i>
Reliability (Cronbach's Alpha)	I: 0.75-0.87; II: 0.80-0.91; III: 0.71-0.88
Other Versions	/

Sources:

Original Paper: Geuenich, K., & Hagemann, W. (2014). *Burnout Screening Skalen* (2., überarb. und erw. Aufl.). Göttingen: Hogrefe.

Validation Paper: Geuenich, K., & Hagemann, W. (2014). *Burnout Screening Skalen* (2., überarb. und erw. Aufl.). Göttingen: Hogrefe.

Possnigg Burnout Selbsttest

(PBS; Possnigg, 2007)

Description:

The "Possnigg Burnout Selbsttest" (PBS) is a self-test with 21 items in a 5-point Likert scale by Günter Possnigg (2007) about subjective quality of work.

Details:

Languages	Deutsch
Items	21
Subscales	0
Answering format	5-point Likert Scale
Example Item	„Ich habe allgemein zuviel Stress in meinem Leben.“
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Application Paper: Pfeffer, M. M., Paletta, A., & Suchar, G. (2018). New perspectives on Burnout: A controlled study on movement analysis of Burnout patients. *Frontiers in psychology*, 9, 1150.

Tedium Scale

(TM/BM; Malakh-Pines, A., Aronson, E., & Kafry, D., 1981)

Description:

The "Tedium Scale" (TM/BM) by A. Malakh-Pines et al. (1981) is an instrument consisting of 21 questions, measuring physical, emotional and mental exhaustion, scored on a seven-point Likert scale. It was translated to several languages, and it is being used in Germany, France, the Netherlands, and Spain.

Details:

Languages	English, German
Items	21
Subscales	3 (Physical Exhaustion, Emotional Exhaustion, Mental Exhaustion)
Answering format	7-point Likert Scale
Example Item	„Fühlen Sie sich niedergeschlagen?“
Reliability (Cronbach's Alpha)	0.91-0.93
Other Versions	/

Sources:

Original Paper: Malakh-Pines, A., Aronson, E., & Kafry, D. (1981). *Burnout: From tedium to personal growth*. New York: Free Press.

Validation Paper: Stout, J. K., & Williams, J. M. (1983). Comparison of two measures of burnout. *Psychological Reports*, 53(1), 283-289.

Application Paper: Schaufeli, W. B. (1995). The evaluation of a burnout workshop for community nurses. *Journal of Health and Human Services Administration*, 18(1), 11-30.

The Burnout Measure, Short Version

(BMS; Malach-Pines, A., 2005)

Description:

The "Burnout Measure, Short Version" (BMS; Malach-Pines, A., 2005) is a shorter Version of the Tedium Scale (Pines, A. & Kafry, D., 1981), but also has a lower reliability. The measured subscales are the same (physical, emotional and mental exhaustion).

Details:

Languages	English, German
Items	10
Subscales	3 (Physical Exhaustion, Emotional Exhaustion, Mental Exhaustion)
Answering format	7-point Likert Scale
Example Item	„When you think about your work overall, how often do you feel the following?“
Reliability (Cronbach's Alpha)	0.85-0.92
Other Versions	/

Sources:

Original Paper: Malach-Pines, A. (2005). The burnout measure, short version. *International Journal of Stress Management*, 12(1), 78-88.

Validation Paper: Malach-Pines, A. (2005). The burnout measure, short version. *International Journal of Stress Management*, 12(1), 78-88.

Patient Health Questionnaire-9

(PHQ-9; Kroenke, K., Spitzer, R. L., & Williams, J. B., 2001)

Description:

The "Patient Health Questionnaire-9" (PHQ-9) by K. Kroenke et al. (2001) is a screening instrument for detecting a major depressive disorder based on diagnostic criteria from the DSM-IV.

Details:

Languages	English, German
Items	10
Subscales	0
Answering format	4-point Likert Scale
Example Item	„Over the last 2 weeks, how often have you been bothered by any of the following problems?“
Reliability (Cronbach's Alpha)	0.88
Other Versions	/

Sources:

Original Paper: Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606-613.

Validation Paper: Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606-613.

Inventory for Depressive Symptomatology

(IDS; Rush, A. J., Giles, D. E., Schlessner, M. A., Fulton, C. L., Weissenburger, J., & Burns, C., 1986)

Description:

The "Inventory for Depressive Symptomatology" (IDS) by A. J. Rush et al. (1986) is a measure of depressive signs and symptoms on a 4-point Likert scale. There are two versions, a self-report and clinician-rated version.

Details:

Languages	English, German
Items	20
Subscales	0
Answering format	4-point Likert Scale
Example Item	„I never take longer than 30 minutes to fall asleep.“
Reliability (Cronbach's Alpha)	0.85
Other Versions	/

Sources:

Original Paper: Rush, A. J., Giles, D. E., Schlessner, M. A., Fulton, C. L., Weissenburger, J., & Burns, C. (1986). The inventory for depressive symptomatology (IDS): preliminary findings. *Psychiatry research*, 18(1), 65-87.

Inventory to Diagnose Depression

(IDD; Zimmerman, M., & Coryell, W., 1987)

Description:

The "Inventory to Diagnose Depression" (IDD) by M. Zimmermann & W Coryell (1987) is a 22-item self-report scale designed to diagnose major depressive disorder based on diagnostic criteria from the DSM-III criteria.

Details:

Languages	English, German
Items	22
Subscales	0
Answering format	5-point Likert Scale
Example Item	„My mood is not lower than normal.“
Reliability (Cronbach's Alpha)	0.92
Other Versions	/

Sources:

Original Paper: Zimmerman, M., & Coryell, W. (1987). The Inventory to Diagnose Depression (IDD): a self-report scale to diagnose major depressive disorder. *Journal of Consulting and Clinical Psychology*, 55(1), 55-59.

Becks Depression Inventory

(BDI; Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J., 1961)

Description:

The "Beck Depression Inventory" (BDI) by A.T. Beck (1961) is a validated, psychological test procedure that records the severity of depressive symptoms. This questionnaire on a 4-point Likert scale is for self-rating.

Details:

Languages	English, German
Items	21
Subscales	0
Answering format	4-point Likert Scale
Example Item	<i>„I have not lost interest in other people.“</i>
Reliability (Cronbach's Alpha)	0.9
Other Versions	/

Sources:

Original Paper: Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4(6), 561-571.

Validation Paper: Richter, P., Werner, J., Heerlein, A., Kraus, A., & Sauer, H. (1998). On the validity of the Beck Depression Inventory. *Psychopathology*, 31(3), 160-168.

Cognition Checklist Depression Scale

(CCL; Beck, A. T., Brown, G., Steer, R. A., Eidelson, J. I., & Riskind, J. H., 1987)

Description:

The "Cognition Checklist Depression Scale" (CCL) by A.T. Beck is a scale to measure the frequency of automatic thoughts relevant to anxiety and depression.

Details:

Languages	English, German
Items	14
Subscales	0
Answering format	5-point Likert Scale
Example Item	„I will never overcome my problems.“
Reliability (Cronbach's Alpha)	0.92
Other Versions	/

Sources:

Original Paper: Beck, A. T., Brown, G., Steer, R. A., Eidelson, J. I., & Riskind, J. H. (1987).

Differentiating anxiety and depression: a test of the cognitive content-specificity hypothesis.

Journal of Abnormal Psychology, 96(3), 179-183.

Validation Paper: Beck, A. T., Brown, G., Steer, R. A., Eidelson, J. I., & Riskind, J. H. (1987).

Differentiating anxiety and depression: a test of the cognitive content-specificity hypothesis.

Journal of Abnormal Psychology, 96(3), 179-183.

Hamilton Depression Rating Scale

(HAMD; Hamilton, M., 1986)

Description:

The "Hamilton Depression Rating Scale" (HAMD) by M. Hamilton (1986) is an often used interview measuring Severity and Anxiety.

Details:

Languages	English, German
Items	17
Subscales	2 (Severity, Anxiety)
Answering format	3 to 5 point Likert Scale
Example Item	<i>„For each item select the one "cue" which best characterizes the patient.“</i>
Reliability (Cronbach's Alpha)	0.73-0.88
Other Versions	/

Sources:

Original Paper: Hamilton, M. (1986). The Hamilton rating scale for depression. In Sartorius N., Ban T.A. (eds.), *Assessment of depression* (pp. 143-152). Springer, Berlin, Heidelberg.

Bech-Rafaelsen Melancholia Scale

(BRMS; Stieglitz, R. D., 1998)

Description:

The “Bech-Rafaelsen Melancholia Scale” (BRMS) by R. D. Stieglitz (1998) with its eleven items was developed for the diagnosis of depression.

Details:

Languages	English, German
Items	11
Subscales	0
Answering format	5-point Likert Scale
Example Item	„Severe degrees of lowered mood.“
Reliability (Cronbach’s Alpha)	0.70-0.91
Other Versions	

Sources:

Original Paper: Stieglitz, R. D. (1998). *Bech-Rafaelsen-Melancholie-Skala:(BRMS)*. Hogrefe, Verlag für Psychologie.

Validation Paper: Bech P. (2002). The Bech-Rafaelsen Melancholia Scale (MES) in clinical trials of therapies in depressive disorders: a 20-year review of its use as outcome measure. *Acta Psychiatrica Scandinavica*, 106(4), 252–264.

Cognition Checklist Scale

(CCL; Beck, A. T., Epstein, N., Brown, G., & Steer, R. A., 1988)

Description:

The "Cognition Checklist Scale" (CCL) by A. T. Beck (1988) is a scale to measure the frequency of automatic thoughts relevant to anxiety and depression.

Details:

Languages	English, German
Items	26
Subscales	2 (Anxiety Scale, Depression Scale)
Answering format	5-point Likert Scale
Example Item	„Something awful is going to happen.“
Reliability (Cronbach's Alpha)	0.89-0.92
Other Versions	/

Sources:

Original Paper: Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893–897.

Validation Paper: Taylor, S., Koch, W. J., Woody, S., & McLean, P. (1997). Reliability and validity of the Cognition Checklist with psychiatric outpatients. *Assessment*, 4(1), 9-16.

Hospital Anxiety and Depression Scale

(HADS-A; Zigmond, A. S., & Snaith, R. P., 1983)

Description:

The "Hospital Anxiety and Depression Scale" (HADS-A) by A. S. Zigmond (1983) is a self-assessment questionnaire for symptoms of depression and anxiety. It includes 14 questions on a 4-point Likert scale. The test is known as a screening procedure, which targets lighter forms of the disorder.

Details:

Languages	English, German
Items	14
Subscales	2 (Anxiety, Depression)
Answering format	4-point Likert Scale
Example Item	„I still enjoy the things I used to enjoy.“
Reliability (Cronbach's Alpha)	0.8
Other Versions	/

Sources:

Original Paper: Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67(6), 361-370.

Application Paper: Ott, M. (2009). *Machbarkeit und Akzeptanz Computer-gestützter Indikationsdiagnostik (CgID) mittels eines digitalisierten Kombinations-Screenings zur Identifizierung psychisch belasteter Patienten unter Radiotherapie* (Doctoral dissertation, Ludwig-Maximilian-Universität zu München).

Depression Anxiety Stress Scales

(DASS; Lovibond, P. F., & Lovibond, S. H., 1995)

Description:

The "Depression Anxiety Stress Scales" (DASS) by P.F. Lovibond is a 42-item self-reporting tool designed to measure the three interrelated negative emotional states of depression, anxiety, and stress.

Details:

Languages	English, German
Items	42
Subscales	3 (Anxiety, Depression, Stress)
Answering format	4-point Likert Scale
Example Item	„I felt I was pretty worthless.“
Reliability (Cronbach's Alpha)	0.9
Other Versions	/

Sources:

Original Paper: Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335-343.

Validation Paper: Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335-343.

Application Paper: Deo, P. K., Budhathoki, S., Raut, J., Adhikari, B., & Shrestha, J. (2020). Factors associated with perceived stress, anxiety, depression, insomnia during COVID-19 outbreak among nursing students. *International Journal of Science and Research*, 9(9), 23-29.

State-Trait Anxiety-Depression Inventory

(STADI; Laux, L., Hock, M., Bergner-Köther, R., Hodapp, V., & Renner, K. H., 2013)

Description:

The "State-Trait Anxiety-Depression Inventory" (STADI) by L. Laux (2013) is a psychological inventory based on a 4-point Likert scale consisting of 40 self-rated questions.

Details:

Languages	English, German
Items	40
Subscales	4 (State Anxiety, Trait Anxiety, State Depression, State Anxiety)
Answering format	4-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.87-0.93
Other Versions	/

Sources:

Original Paper: Laux, L., Hock, M., Bergner-Köther, R., Hodapp, V., & Renner, K. H. (2013). *Das State-Trait-Angst-Depressions-Inventar (STADI)*. Göttingen: Hogrefe.

Validation Paper: Renner, K. H., Hock, M., Bergner-Köther, R., & Laux, L. (2018). Differentiating anxiety and depression: The State-Trait Anxiety-Depression Inventory. *Cognition and Emotion*, 32(7), 1409-1423.

Hopkins Symptoms Checklist

(HSCL; Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L., 1974)

Description:

The "Hopkins Symptoms Checklist" (HSCL) by L. R. Derogatis (1974) is a symptom inventory for self-presentation. It consists of 58 items, which are representative of the symptom constellations in outpatients. It is rated according to five underlying symptom dimensions: sommatization, obsessive-compulsive disorder, interpersonal sensitivity, anxiety, and depression.

Details:

Languages	English, German
Items	58
Subscales	5 (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Anxiety, Depression)
Answering format	4-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.50-0.70
Other Versions	/

Sources:

Original Paper: Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, 19(1), 1-15.

Validation Paper: Walkey, F. H., Aghanwa, H. S., & Taylor, A. J. (2002). A psychometric evaluation and cross-cultural validation of the 21 item Hopkins Symptom Checklist. *Pacific Health Dialog*, 9(2), 214-218.

Hamilton Anxiety Rating Scale

(HAM-A; Hamilton M., 1959)

Description:

The "Hamilton Anxiety Rating Scale" (HAM-A) by M. Hamilton (1959) is a questionnaire that can be used to determine the severity of an anxiety disorder by assessing it from others. The questionnaire should not be used to make a diagnosis. It consists of 14 questions on different symptom groups, which are to be rated on a five-point Likert scale.

Details:

Languages	German
Items	14
Subscales	2 (Psychic Subscale, Somatic Subscale)
Answering format	5-point Likert Scale
Example Item	„Below is a list of phrases that describe certain feeling that people have. Rate the patients by finding the answer which best describes the extent to which he/she has these conditions.“
Reliability (Cronbach's Alpha)	0.77-0.92
Other Versions	/

Sources:

Original Paper: Hamilton M. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology*, 32(1), 50-55.

Validation Paper: Clark, D. B., & Donovan, J. E. (1994). Reliability and validity of the Hamilton Anxiety Rating Scale in an adolescent sample. *Journal of the American Academy of Child & Adolescent Psychiatry*, 33(3), 354-360.

State Trait Anxiety Inventory

(STAI; Spielberger, C. D., 1970)

Description:

The "State Trait Anxiety Inventory" (STAI) by C. D. Spielberger (1970) is a common measure of anxiety. It is used in the clinical setting to diagnose anxiety and differentiate from depressive syndromes.

Details:

Languages	English, German
Items	40
Subscales	2 (State Anxiety, Trait Anxiety)
Answering format	4-point Likert Scale
Example Item	„I feel blue.“
Reliability (Cronbach's Alpha)	0.88-0.94
Other Versions	/

Sources:

Original Paper: Spielberger, C. D. (1970). *Manual for the State-Trait Anxiety, Inventory*. Palo Alto, California, Consulting Psychologists' Press.

Validation Paper: McDowell, I. (2006). *Measuring Health: A guide to rating scales and questionnaires*. Oxford University Press, USA.

Application Paper: Frasure-Smith, N., & Lesperance, F. (1998). Depression and anxiety increase physician costs during the first post-MI year. *Psychosomatic Medicine*, 60(1), 99.

Beck Anxiety Inventory

(BAI; Beck, A. T., Epstein, N., Brown, G., & Steer, R. A., 1988)

Description:

The "Beck Anxiety Inventory" (BAI) is a self-assessment questionnaire by Beck et al. (1988) to determine the severity of anxiety disorders. No statements about specific fears are possible. The special thing about this questionnaire is that during the construction, care was taken to ensure that it does not agree much with the results of depression questionnaires.

Details:

Languages	English, German
Items	21
Subscales	0
Answering format	4-point Likert Scale
Example Item	„Indicate how much you have been bothered by that symptom during the past month.“
Reliability (Cronbach's Alpha)	0.91
Other Versions	/

Sources:

Original Paper: Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893-897.

Validation Paper: Bardhoshi, G., Duncan, K., & Erford, B. T. (2016). Psychometric meta-analysis of the English version of the Beck Anxiety Inventory. *Journal of Counseling & Development*, 94(3), 356-373.

Fear Questionnaire

(FQ; Marks, I. M. & Mathews, A. M., 1979)

Description:

The "Fear Questionnaire" (FQ) by I. M. Marks and A. M. Mathews (1979) is a questionnaire for self-assessment of anxiety symptoms. The S3 guideline for anxiety disorders recommends the questionnaire to determine the degree of severity of specific phobias.

Details:

Languages	English, German
Items	15
Subscales	3 (Agoraphobia, Social Phobia, Blood and Injury Phobia)
Answering format	9-point Likert Scale
Example Item	„Choose a number from the scale below to show how much you would avoid each of the situations listed below because of fear or other unpleasant feelings. Then write the number you choose in the space opposite each situation. “
Reliability (Cronbach's Alpha)	0.71-0.83
Other Versions	/

Sources:

Original Paper: Marks, I. M. & Mathews, A. M. (1979). Brief standard self-rating for phobic patients. *Behaviour Research and Therapy*, 17(3), 263-267.

Validation Paper: Oei, T. P., Moylan, A., & Evans, L. (1991). Validity and clinical utility of the Fear Questionnaire for anxiety-disorder patients. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3(3), 391-397.

Liebowitz Social Anxiety Scale

(LSAS; Liebowitz, M. R., 1987)

Description:

The "Liebowitz Social Anxiety Scale" (LSAS) by Liebowitz (1987) is a questionnaire for assessing the severity of a social phobia. In 24 questions on a 4-point Likert scale, the attempt is made to avoid the situation described in each case. The questionnaire was designed to cover a wide range of situations.

Details:

Languages	English, German
Items	24
Subscales	2 (Fear, Avoidance)
Answering format	4-point Likert Scale
Example Item	„Read each situation carefully and answer two questions about that situation.“
Reliability (Cronbach's Alpha)	0.94
Other Versions	/

Sources:

Original Paper: Liebowitz, M. R. (1987). Social phobia. *Modern Problems of Pharmacopsychiatry*, 22, 141–173.

Validation Paper: Heimberg, R. G., Horner, K. J., Juster, H. R., Safren, S. A., Brown, E. J., Schneier, F. R. & Liebowitz (1999). Psychometric properties of the Liebowitz Social Anxiety Scale. *Psychological Medicine*, 29(1), 199-212.

Social Phobia Inventory

(SPIN; Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E., 2000)

Description:

The "Social Phobia Inventory" (SPIN) is a questionnaire by K. M. Connor et al. (2000) which was developed for screening and measuring the severity of a social anxiety disorder. This self-assessment scale consists of 17 items covering the main spectrum of social phobia such as fear, avoidance and physiological symptoms.

Details:

Languages	English, German
Items	17
Subscales	3 (Fear, Avoidance, Physiological Symptoms)
Answering format	4- to 5-point Likert Scale
Example Item	„I am afraid of people in authority.“
Reliability (Cronbach's Alpha)	0.80-0.91
Other Versions	/

Sources:

Original Paper: Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E. (2000). Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. *The British Journal of Psychiatry*, 176(4), 379-386.

Validation Paper: Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E. (2000). Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. *The British Journal of Psychiatry*, 176(4), 379-386.

Penn State Worry Questionnaire

(PSWQ; Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D., 1990)

Description:

The "Penn State Worry Questionnaire" (PSWQ) by Meyer et al. (1990) is supposed to record excessive, unrealistic worry as a central cognitive syndrome accompanying a generalized anxiety disorder.

Details:

Languages	English, German
Items	16
Subscales	0
Answering format	5-point Likert Scale
Example Item	„My worries overwhelm me.“
Reliability (Cronbach's Alpha)	0.88-0.95
Other Versions	/

Sources:

Original Paper: Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the penn state worry questionnaire. *Behaviour Research and Therapy*, 28(6), 487-495.

Validation Paper: Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the penn state worry questionnaire. *Behaviour Research and Therapy*, 28(6), 487-495.

Coping Inventory for Medical Situations

(CIM; Sturmbauer, S. C., Hock, M., Rathner, E. M., & Schwerdtfeger, A. R., 2019)

Description:

The "Coping Inventory for Medical Situations" (CIM) by S. C. Sturmbauer (2019) is an inventory that was developed to measure habitual preferences for the use of cognitive avoidance and vigilance in potentially threatening medical contexts.

Details:

Languages	German
Items	32
Subscales	2 (Vigilance, Cognitive Avoidance)
Answering format	5-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.73-0.81
Other Versions	/

Sources:

Original Paper: Sturmbauer, S. C., Hock, M., Rathner, E. M., & Schwerdtfeger, A. R. (2019). Das Angstbewältigungsinventar für medizinische Situationen (ABI-MS). *Diagnostica*, 65(4), 253-265.

Validation Paper: Sturmbauer, S. C., Hock, M., Rathner, E. M., & Schwerdtfeger, A. R. (2019). Das Angstbewältigungsinventar für medizinische Situationen (ABI-MS). *Diagnostica*, 65(4), 253-265.

Anxiety Control Questionnaire

(AxCQ; Rapee, R. M., Craske, M. G., Brown, T. A., & Barlow, D. H., 1996)

Description:

The "Anxiety Control Questionnaire" (AxCQ) by R. M. Rapee et al. (1996) is a 30-point questionnaire that measures a person's compliance with a range of beliefs.

Details:

Languages	English, German
Items	30
Subscales	2 (Emotional Reactions, External Events)
Answering format	6-point Likert Scale
Example Item	„I am usually able to avoid threat quite easily. “
Reliability (Cronbach's Alpha)	0.82-0.89
Other Versions	/

Sources:

Original Paper: Rapee, R. M., Craske, M. G., Brown, T. A., & Barlow, D. H. (1996). Measurement of perceived control over anxiety-related events. *Behavior Therapy*, 27(2), 279-293.

Validation Paper: Rapee, R. M., Craske, M. G., Brown, T. A., & Barlow, D. H. (1996). Measurement of perceived control over anxiety-related events. *Behavior Therapy*, 27(2), 279-293.

Anxiety Sensitivity Index

(ASI; Peterson, R. A., & Heilbronner, R. L., 1987)

Description:

The "Anxiety Sensitivity Index" (ASI) by R. A. Peterson and R. L. Heilbronner (1987) is a 16-item measure that taps into the fear of feelings of fear, which is known as a risk factor for developing panic.

Details:

Languages	English, German
Items	16
Subscales	0
Answering format	5-point Likert Scale
Example Item	„It is important for me not to appear nervous.“
Reliability (Cronbach's Alpha)	0.88
Other Versions	/

Sources:

Original Paper: Peterson, R. A., & Heilbronner, R. L. (1987). The anxiety sensitivity index: Construct validity and factor analytic structure. *Journal of Anxiety Disorders*, 1(2), 117-121.

Validation Paper: Peterson, R. A., & Heilbronner, R. L. (1987). The anxiety sensitivity index: Construct validity and factor analytic structure. *Journal of Anxiety Disorders*, 1(2), 117-121.

Application Paper: Peterson, R. A., & Heilbronner, R. L. (1987). The anxiety sensitivity index: Construct validity and factor analytic structure. *Journal of Anxiety Disorders*, 1(2), 117-121.

Cognition Checklist Scale

(CCL; Beck, A. T., Epstein, N., Brown, G., & Steer, R. A., 1988)

Description:

The "Cognition Checklist Scale" (CCL) by A. T. Beck (1988) is a scale to measure the frequency of automatic thoughts relevant to anxiety and depression.

Details:

Languages	English, German
Items	26
Subscales	2 (Anxiety Scale, Depression Scale)
Answering format	5-point Likert Scale
Example Item	„Something awful is going to happen.“
Reliability (Cronbach's Alpha)	0.89-0.92
Other Versions	/

Sources:

Original Paper: Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893–897.

Validation Paper: Taylor, S., Koch, W. J., Woody, S., & McLean, P. (1997). Reliability and validity of the Cognition Checklist with psychiatric outpatients. *Assessment*, 4(1), 9-16.

Hospital Anxiety and Depression Scale

(HADS-A; Zigmond, A. S., & Snaith, R. P., 1983)

Description:

The "Hospital Anxiety and Depression Scale" (HADS-A) by A. S. Zigmond (1983) is a self-assessment questionnaire for symptoms of depression and anxiety. It includes 14 questions on a 4-point Likert scale. The test is known as a screening procedure, which targets lighter forms of the disorder.

Details:

Languages	English, German
Items	14
Subscales	2 (Anxiety, Depression)
Answering format	4-point Likert Scale
Example Item	<i>„I still enjoy the things I used to enjoy.“</i>
Reliability (Cronbach's Alpha)	0.8
Other Versions	/

Sources:

Original Paper: Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67(6), 361-370.

Application Paper: Ott, M. (2009). *Machbarkeit und Akzeptanz Computer-gestützter Indikationsdiagnostik (CgID) mittels eines digitalisierten Kombinations-Screenings zur Identifizierung psychisch belasteter Patienten unter Radiotherapie* (Doctoral dissertation, Ludwig-Maximilian-Universität zu München).

Depression Anxiety Stress Scales

(DASS; Lovibond, P. F., & Lovibond, S. H., 1995)

Description:

The "Depression Anxiety Stress Scales" (DASS) by P. F. Lovibond and S. H. Lovibond (1995) is a 42-item self-reporting tool designed to measure the three interrelated negative emotional states of depression, anxiety, and stress.

Details:

Languages	English, German
Items	42
Subscales	3 (Anxiety, Depression, Stress)
Answering format	4-point Likert Scale
Example Item	<i>"I felt I was pretty worthless."</i>
Reliability (Cronbach's Alpha)	0.9
Other Versions	/

Sources:

Original Paper: Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335-343.

Validation Paper: Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335-343.

Application Paper: Deo, P. K., Budhathoki, S., Raut, J., Adhikari, B., & Shrestha, J. (2020). Factors associated with perceived stress, anxiety, depression, insomnia during COVID-19 outbreak among nursing students. *International Journal of Science and Research*, 9(9), 23-29.

State-Trait Anxiety-Depression Inventory

(STADI; Laux, L., Hock, M., Bergner-Köther, R., Hodapp, V., & Renner, K. H., 2013)

Description:

The "State-Trait Anxiety-Depression Inventory" (STADI) by L. Laux et al. (2013) is a psychological inventory based on a 4-point Likert scale consisting of 40 self-rated questions.

Details:

Languages	English, German
Items	40
Subscales	4 (State Anxiety, Trait Anxiety, State Depression, State Anxiety)
Answering format	4-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.87-0.93
Other Versions	/

Sources:

Original Paper: Laux, L., Hock, M., Bergner-Köther, R., Hodapp, V., & Renner, K. H. (2013). *Das State-Trait-Angst-Depressions-Inventar (STADI)*. Göttingen: Hogrefe.

Validation Paper: Renner, K. H., Hock, M., Bergner-Köther, R., & Laux, L. (2018). Differentiating anxiety and depression: The State-Trait Anxiety-Depression Inventory. *Cognition and Emotion*, 32(7), 1409-1423.

Hopkins Symptoms Checklist

(HSCL; Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L., 1974)

Description:

The "Hopkins Symptoms Checklist" (HSCL) by L. R. Derogatis et al. (1974) is a symptom inventory for self-presentation. It consists of 58 items, which are representative of the symptom constellations in outpatients. It is rated according to five underlying symptom dimensions: somatisation, obsessive-compulsive disorder, interpersonal sensitivity, anxiety, and depression.

Details:

Languages	English, German
Items	58
Subscales	5 (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Anxiety, Depression)
Answering format	4-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.50-0.70
Other Versions	/

Sources:

Original Paper: Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, 19(1), 1-15.

Validation Paper: Walkey, F. H., Aghanwa, H. S., & Taylor, A. J. (2002). A psychometric evaluation and cross-cultural validation of the 21 item Hopkins Symptom Checklist. *Pacific Health Dialog*, 9(2), 214-218.

Hamilton Anxiety Rating Scale

(HAM-A; Hamilton M., 1959)

Description:

The "Hamilton Anxiety Rating Scale" (HAM-A) by M. Hamilton (1959) is a questionnaire that can be used to determine the severity of an anxiety disorder by assessing it from others. The questionnaire should not be used to make a diagnosis. It consists of 14 questions on different symptom groups, which are to be rated on a five-point Likert scale.

Details:

Languages	German
Items	14
Subscales	2 (Psychic Subscale, Somatic Subscale)
Answering format	5-point Likert Scale
Example Item	„Below is a list of phrases that describe certain feeling that people have. Rate the patients by finding the answer which best describes the extent to which he/she has these conditions.“
Reliability (Cronbach's Alpha)	0.77-0.92
Other Versions	/

Sources:

Original Paper: Hamilton M. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology*, 32(1), 50-55.

Validation Paper: Clark, D. B., & Donovan, J. E. (1994). Reliability and validity of the Hamilton Anxiety Rating Scale in an adolescent sample. *Journal of the American Academy of Child & Adolescent Psychiatry*, 33(3), 354-360.

Work Related Patterns of Behaviour and Experience Questionnaire

(AVEM; Schaarschmidt, U., & Fischer, A. (2006))

Description:

The „Work Related Patterns of Behaviour and Experience“ (AVEM) is a questionnaire that measures individual work related patterns of behaviour and experience by Schaarschmidt, U. and Fischer, A. (2006).

Details:

Languages	German
Items	66
Subscales	3 (Commitment to Work, Resistance to Stress, Emotional or Subjective Well-Being)
Answering format	5-point Likert Scale
Example Item	<i>“Work is the most important part of my life.”</i>
Reliability (Cronbach’s Alpha)	0.79-0.87
Other Versions	-

Sources:

Original Paper: Schaarschmidt, U. & Fischer, A. (2008). *Arbeitsbezogenes Verhaltens- und Erlebensmuster. Handanweisung* (3. Aufl.). Dr. G. Schuhfried, Frankfurt/M.

Validation Paper: Schaarschmidt, U. & Fischer, A. (2008). *Arbeitsbezogenes Verhaltens- und Erlebensmuster. Handanweisung* (3. Aufl.). Dr. G. Schuhfried, Frankfurt/M.

Positive Mental Health Scale

(PMH-Scale; Lukat, J., Margraf, J., Lutz, R., van der Veld, W.M., Becker, E.S. (2016)

Description:

The „Positive Mental Health Scale“ (PMH-Scale) is self-report on positive mental health which focuses on emotional, psychological and social aspects of wellbeing by Lukat, J., Margraf, J., Lutz, R., van der Veld, W. M. and Becker, E. S. (2016).

Details:

Languages	German
Items	9
Subscales	0
Answering format	4-point Likert Scale
Example Item	<i>“I enjoy my life.”</i>
Reliability (Cronbach’s Alpha)	0.82-0.93
Other Versions	/

Sources:

Original Paper: Lukat, J., Margraf, J., Lutz, R., van der Veld, W. M., & Becker, E. S. (2016).

Psychometric properties of the Positive Mental Health Scale (PMH-scale). *BMC Psychology*, 4(8), 1-14.

Validation Paper: Lukat, J., Margraf, J., Lutz, R., van der Veld, W. M., & Becker, E. S. (2016).

Psychometric properties of the Positive Mental Health Scale (PMH-scale). *BMC Psychology*, 4(8), 1-14.

Critical Incident Technique

(CIT; Flanagan, J. C., 1954)

Description:

The „Critical Incident Technique“ (CIT) is an interview technique to determine and judge critical incidents in a person's life by J. C. Flanagan (1954).

Details:

Languages	English, German
Items	10
Subscales	0
Answering format	Qualitative Format
Example Item	/
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4), 327-358.

Validation Paper: Andersson, B. E., & Nilsson, S. G. (1964). Studies in the reliability and validity of the critical incident technique. *Journal of Applied Psychology*, 48(6), 398-403.

Application Paper: Schluter, J., Seaton, P., & Chaboyer, W. (2008). Critical incident technique: a user's guide for nurse researchers. *Journal of Advanced Nursing*, 61(1), 107-114.

Subjective Mental Effort Questionnaire

(SMEQ/Rating Scale for Mental Effort; Zijlstra, F. R. H. & Van Doorn, L., 1985)

Description:

The „Subjective Mental Effort Questionnaire“ (SMEQ) is a questionnaire which determines mental effort by Zijlstra, F. R. H. & Van Doorn, L. (1985).

Details:

Languages	English, German
Items	1
Subscales	0
Answering format	Scale from 0-150
Example Item	/
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Zijlstra, F. R. H. & Van Doorn, L. (1985). *The construction of a scale to measure perceived effort*. Department of Philosophy and Social Sciences, Delft University of Technology.

Validation Paper: Sauro, J., & Dumas, J. S. (2009). Comparison of three one-question, post-task usability questionnaires. *In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1599-1608.

Application Paper: Grochola, L. F., Soll, C., Zehnder, A., Wyss, R., Herzog, P. & Breitenstein, S. (2019). Robot-assisted versus laparoscopic single-incision cholecystectomy: results of a randomized controlled trial. *Surgical Endoscopy*, 33(5), 1482–1490.

NASA Task-Load Index

(NASA TLX; Hart, S. G. & Staveland, L. E., 1988)

Description:

The „NASA Task-Load Index“ (NASA TLX) is a questionnaire which rates perceived workload by Hart, S. G. & Staveland, L. E. (1988).

Details:

Languages	English, German
Items	15
Subscales	6 (Mental Demand, Physical Demand, Temporal Demand, Frustration, Effort, Performance)
Answering format	21-point Likert Scale
Example Item	„Was the task easy or demanding?“
Reliability (Cronbach's Alpha)	0.72
Other Versions	/

Sources:

Original Paper: Hart, S. G. & Staveland, L. E. (1988). Development of NASA-TLX (Task Load Index): Results of empirical and theoretical research. *In Advances in Psychology*, 52, 139-183.

Validation Paper: Hoonakker, P., Carayon, P., Gurses, A. P., Brown, R., Khunlertkit, A., McGuire, K., & Walker, J. M. (2011). Measuring workload of ICU nurses with a questionnaire survey: the NASA Task Load Index (TLX). *IIE Transactions on Healthcare Systems Engineering*, 1(2), 131-143.

Application Paper: Hoonakker, P., Carayon, P., Gurses, A. P., Brown, R., Khunlertkit, A., McGuire, K., & Walker, J. M. (2011). Measuring workload of ICU nurses with a questionnaire survey: the NASA Task Load Index (TLX). *IIE Transactions on Healthcare Systems Engineering*, 1(2), 131-143.

Multiple Resources Questionnaire

(MRQ; Boles, D. B., Bursk, J. H., Phillips, J. B., & Perdelwitz, J. R., 2007)

Description:

The „Multiple Ressources Questionnaire“ (MRQ) is a questionnaire which measures subjective workload by Boles, D. B., Bursk, J. H., Phillips, J. B., & Perdelwitz, J. R. (2007)

Details:

Languages	English
Items	17
Subscales	0
Answering format	4-point Likert Scale
Example Item	<i>“Required recognition or judgment of shapes (figures), using the sense of touch.”</i>
Reliability (Cronbach’s Alpha)	/
Other Versions	/

Sources:

Original Paper: Boles, D. B., Bursk, J. H., Phillips, J. B., & Perdelwitz, J. R. (2007). Predicting dual-task performance with the Multiple Resources Questionnaire (MRQ). *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 49(1), 32–45.

Validation Paper: Boles, D. B., & Adair, L. P. (2001). Validity of the Multiple Resources Questionnaire (MRQ). *In Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 45(25), 1795-1799.

Application Paper: Kim, S., Kim, Y., & Jung, W. (2016). Operations strategy for workload balancing of crews in an advanced main control room. *Journal of Nuclear Science and Technology*, 53(8), 1097-1111.

Subjective Workload Assessment Technique

(SWAT; Reid, G. B. & Nygren, T. E., 1988)

Description:

The „Subjective Workload Assessment Technique“ (SWAT) is a questionnaire which measures perceived workload by Reid, G. B. & Nygren, T. E. (1988).

Details:

Languages	English
Items	27
Subscales	3 (Time Load, Mental Effort Load, Psychological Stress Load)
Answering format	3-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.80
Other Versions	/

Sources:

Original Paper: Reid, G. B. & Nygren, T. E. (1988). The subjective workload assessment technique: A scaling procedure for measuring mental workload. *In Advances in Psychology*, 52, 185-218.

Validation Paper: Nygren, T. E. (1991). Psychometric properties of subjective workload measurement techniques: Implications for their use in the assessment of perceived mental workload. *Human Factors*, 33(1), 17-33.

Questionnaire for Psychosocial Risk Assessment at Work

(FGBU, Dettmers, J. & Krause, A., 2020)

Description:

The „Questionnaire for Psychosocial Risk Assessment at Work“ (FGBU) by Dettmers, J. & Krause, A. (2020) is a questionnaire which measures work-relevant mental stress factors as listed by the GDA (Gemeinsame Deutsche Arbeitsschutzstrategie).

Details:

Languages	German
Items	76
Subscales	19
Answering format	4-point Likert Scale
Example Item	„Die Arbeitsaufgaben wechseln häufig bei meiner Arbeit.“
Reliability (Cronbach's Alpha)	0.59-0.70
Other Versions	/

Sources:

Original Paper: Dettmers, J. & Krause, A. (2020). Der Fragebogen zur Gefährdungsbeurteilung psychischer Belastungen (FGBU). *Zeitschrift für Arbeits- und Organisationspsychologie*, 64(2), 99–119.

Questionnaire on the Perceived Work Intensity and Activity Latitude

(FIT; Richter, P., Hemmann, E., Merboth, H., Fritz, S., Hänsen, C., & Rudolf, M., 2000)

Description:

The „Questionnaire on the Perceived Work Intensity and Activity Latitude“ (FIT) is a questionnaire which measures subjective work intensity and activity latitude by Richter, P., Hemmann, E., Merboth, H., Fritz, S., Hänsen, C., & Rudolf, M. (2000).

Details:

Languages	German
Items	13
Subscales	2 (Demands, Control)
Answering format	4-point Likert Scale
Example Item	„Meine Arbeit erfordert von mir vielfältige Fähigkeiten und Fertigkeiten.“
Reliability (Cronbach's Alpha)	0.48-0.73
Other Versions	/

Sources:

Original Paper: Richter, P., Hemmann, E., Merboth, H., Fritz, S., Hänsen, C., & Rudolf, M. (2000).

Das Erleben von Arbeitsintensität und Tätigkeitsspielraum—Entwicklung und Validierung eines Fragebogens zur orientierenden Analyse (FIT). *Zeitschrift für Arbeits- und Organisationspsychologie*, 44(3), 129–139.

Validation Paper: Richter, P., Hemmann, E., Merboth, H., Fritz, S., Hänsen, C., & Rudolf, M. (2000).

Das Erleben von Arbeitsintensität und Tätigkeitsspielraum—Entwicklung und Validierung eines Fragebogens zur orientierenden Analyse (FIT). *Zeitschrift für Arbeits- und Organisationspsychologie*, 44(3), 129–139.

Fragebogen zur Analyse belastungsrelevanter Anforderungsbewältigung

(FABA; Richter, P., Rotheiler, E., & Rudolf, M., 2015)

Description:

The „Fragebogen zur Analyse belastungsrelevanter Anforderungsbewältigung“ (FABA) is a questionnaire which measures noteworthy behaviour that might cause constant activation during stress by Richter, P., Rotheiler, E., & Rudolf, M. (2015).

Details:

Languages	German
Items	20
Subscales	4 (Erholungsunfähigkeit, Exzessive Planungsneigung, Ungeduld, Dominanzstreben)
Answering format	4-point Likert Scale
Example Item	„Auch im Urlaub muss ich häufig an Probleme meiner Arbeit denken.“
Reliability (Cronbach's Alpha)	0.59-0.78
Other Versions	/

Sources:

Original Paper: Richter, P., Rotheiler, E., & Rudolf, M. (2015). *FABA: Fragebogen zur Analyse belastungsrelevanter Anforderungen-Handbuch*. P & T, Wien.

Validation Paper: Schaarschmidt, U., & Fischer, A. (1997). AVEM - ein diagnostisches Instrument zur Differenzierung von Typen gesundheitsrelevanten Verhaltens und Erlebens gegenüber der Arbeit. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 18(3), 151–163.

Application Paper: Ghahramani, N., Lendel, I., Haque, R., & Sawruk, K. (2009). User Satisfaction with Computerized Order Entry System and Its Effect on Workplace Level of Stress. *Journal of Medical Systems*, 33(3), 199–205.

Work Design Questionnaire

(WDQ; Morgeson, F. P. & Humphrey, S. E., 2006)

Description:

The „Work Design Questionnaire“ (WDQ) is a questionnaire which measures subjective ratings of work design aspects by Morgeson, F. P. & Humphrey, S. E. (2006).

Details:

Languages	English, German
Items	77
Subscales	21
Answering format	5-point Likert Scale
Example Item	<i>“The workplace is free from excessive noise.”</i>
Reliability (Cronbach’s Alpha)	0.70-0.87
Other Versions	/

Sources:

Original Paper: Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, 91(6), 1321-1339.

Validation Paper: Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, 91(6), 1321-1339.

Warr-Cook-Wall Job Satisfaction Scale

(WCW; Warr, P., Cook, J., & Wall, T., 1979)

Description:

The „Warr-Cook-Wall Job Satisfaction Scale“ (WCW) is a questionnaire which measures work attitudes and other aspects of well-being by Warr, P., Cook, J., & Wall, T. (1979).

Details:

Languages	English, German
Items	10
Subscales	0
Answering format	7-point Likert Scale
Example Item	„How satisfied are you with your income?“
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Warr, P., Cook, J., & Wall, T. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, 52(2), 129-148.

Validation Paper: Goetz, K., Campbell, S. M., Steinhäuser, J., Broge, B., Willms, S., & Szecsenyi, J. (2011). Evaluation of job satisfaction of practice staff and general practitioners: an exploratory study. *BMC Family Practice*, 12(137), 1-6.

Application Paper: Werner, A. (2016). *Arbeitssituation und Ärztegesundheit im deutschsprachigen Raum: Ein systematischer Literaturüberblick* (Doctoral dissertation, Ludwig-Maximilians-Universität zu München).

Sense of Coherence Scale

(SOC-13; Antonovsky, A., 1993)

Description:

The „Sense of Coherence Scale“ (SOC-13) is a questionnaire which assesses a person's coping capacity to deal with life stresses and their view on life by Antonovsky, A. (1993)

Details:

Languages	English, German
Items	13
Subscales	3 (Comprehensibility, Manageability, Meaningfulness)
Answering format	7-point Likert Scale
Example Item	„Do you have the feeling that you don't really care about what goes on around you?“
Reliability (Cronbach's Alpha)	0.78-0.93
Other Versions	/

Sources:

Original Paper: Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science & Medicine*, 36(6), 725-733.

Validation Paper: Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science & Medicine*, 36(6), 725-733.

Application Paper: Buddeberg-Fischer, B., Stamm, M., Buddeberg, C. & Klaghofer, R. (2010). Chronic stress experience in young physicians: impact of person- and workplace-related factors. *International Archives of Occupational and Environmental Health*, 83(4), 373-379.

Utrecht Work Engagement Scale

(UWES; Schaufeli, W. B., & Bakker, A. B., 2003)

Description:

The „Utrecht Work Engagement Scale“ (UWES) is a self-reporting questionnaire measuring work engagement by Schaufeli, W. B., & Bakker, A. B. (2003).

Details:

Languages	English, German
Items	17
Subscales	3 (Vigor, Dedication, Absorption)
Answering format	7-point Likert Scale
Example Item	„At my work, I feel bursting with energy.“
Reliability (Cronbach's Alpha)	0.82-0.92
Other Versions	/

Sources:

Original Paper: Schaufeli, W. B., & Bakker, A. B. (2003). *The utrecht work engagement scale (UWES). Test manual*. Utrecht, The Netherlands: Department of Social & Organizational Psychology.

Validation Paper: Schaufeli, W., & Bakker, A. (2004). *UWES Utrecht Work Engagement Scale Preliminary Manual*. Occupational Health Psychology Unit Utrecht University, Utrecht.

Application Paper: Agarwal, G., Mosquera, M., Ring, M. & Victorson, D. (2020). Work engagement in medical students: An exploratory analysis of the relationship between engagement, burnout, perceived stress, lifestyle factors, and medical student attitudes. *Medical Teacher*, 42(3), 299–305.

Work Ability Index

(WAI; Tuomi, K., Ilmarinen, J., Jahkola, A., Katajarinne, L., & Tulkki, A., 1998)

Description:

The „Work Ability Index“ (WAI) is a questionnaire which measures a person's current and future ability to work by Tuomi, K., Ilmarinen, J., Jahkola, A., Katajarinne, L., & Tulkki, A. (1998).

Details:

Languages	English, German
Items	10
Subscales	7 (Current Work Ability Compared With Lifetime Best, Work Ability in Relation to The Demands of the Job, Number of Current Diseases Diagnosed by a Physician, Estimated Work Impairment Due to Diseases, Sick Leave During the Past 12 Months, Personal Prognosis of Work Ability 2 Years From Now, Mental Resources)
Answering format	3- to 11-point Likert Scale
Example Item	„Assuming that your work ability at its best has a value of 10 points how many points would you give your current work ability?“
Reliability (Cronbach's Alpha)	0.7
Other Versions	/

Sources:

Original Paper: Tuomi, K., Ilmarinen, J., Jahkola, A., Katajarinne, L., & Tulkki, A. (1998). *Work Ability Index* (2nd ed.). Helsinki: Finnish Institute of Occupational Health.

Validation Paper: Radkiewicz, P., Widerszal-Bazyl, M., & NEXT-Study Group. (2005). Psychometric properties of Work Ability Index in the light of comparative survey study. In *International congress series* (Vol. 1280, pp. 304-309). Elsevier.

Application Paper: Von Garrel, J., Kummer, R., & Bittner, P. (2016). Arbeitsfähig sein und bleiben!? Der Mensch in der digitalisierten Industrie. In GfA, Dortmund (eds.) *Arbeit in komplexen Systemen. Digital, vernetzt, human?! – A.1.6.*

Copenhagen Psychosocial Questionnaire

(COPSOQ; Kristensen, T.S., Hannerz, H., Høgh, A., & Borg, V., 2005)

Description:

The „Copenhagen Psychosocial Questionnaire“ (COPSOQ) is a questionnaire which measures psychological stress and demands by Kristensen, T.S., Hannerz, H., Høgh, A., & Borg, V., (2005).

Details:

Languages	English, German
Items	141
Subscales	3 (Demands at Work, Work Organization and Job Content, Interpersonal Relations and Leadership)
Answering format	5-point Likert Scale
Example Item	„Do you have enough time for your worktasks?“
Reliability (Cronbach's Alpha)	0.7-0.8
Other Versions	/

Sources:

Original Paper: Kristensen, T.S., Hannerz, H., Høgh, A., & Borg, V., (2005). The Copenhagen Psychosocial Questionnaire (COPSOQ) - a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work Environment and Health*, 31(6), 438-449.

Validation Paper: Kristensen, T.S., Hannerz, H., Høgh, A., Borg, V. (2005). The Copenhagen Psychosocial Questionnaire (COPSOQ) - a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work Environment and Health*, 31(6), 438-449.

Application Paper: Poethke, U., Klasmeier, K. N., Diebig, M., Hartmann, N., & Rowold, J. (2019). Entwicklung eines Fragebogens zur Erfassung zentraler Merkmale der Arbeit 4.0. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, 63(3), 129–151.

Doctors' Interpersonal Skills Questionnaire

(DISQ; Greco, M., Cavanagh, M., Brownlea, A., & McGovern, J., 1999)

Description:

The „Doctors' Interpersonal Skills Questionnaire“ (DISQ) is a questionnaire which measures a patient's view on medical personnel, focusing on interpersonal interactions, by Greco, M., Cavanagh, M., Brownlea, A., & McGovern, J. (1999).

Details:

Languages	English
Items	12
Subscales	0
Answering format	5-point Likert Scale
Example Item	<i>“My overall satisfaction with this doctor is (...)”</i>
Reliability (Cronbach's Alpha)	0.96
Other Versions	/

Sources:

Original Paper: Greco, M., Cavanagh, M., Brownlea, A., & McGovern, J. (1999). The doctor's interpersonal skills questionnaire (DISQ): A validated instrument for use in GP training. *Education for General Practice*, 10, 256-264.

Surgery Task Load Index

(SURG-TLX; Wilson, M. R., Poolton, J. M., Malhotra, N., Ngo, K., Bright, E., & Masters, R. S., 2011)

Description:

The „Surgery Task Load Index“ (SURG-TLX) is a questionnaire which measures cognitive load specifically in a surgical team by Wilson, M. R., Poolton, J. M., Malhotra, N., Ngo, K., Bright, E., & Masters, R. S. (2011).

Details:

Languages	English
Items	21
Subscales	6 (Mental Demands, Physical Demands, Temporal Demands, Task Complexity, Situational Stress, Distractions)
Answering format	20-point Likert Scale
Example Item	„How mentally fatiguing was the procedure?“
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Wilson, M. R., Poolton, J. M., Malhotra, N., Ngo, K., Bright, E., & Masters, R. S. (2011). Development and validation of a surgical workload measure: the surgery task load index (SURG-TLX). *World Journal of Surgery*, 35(9), 1961-1969.

Validation Paper: Wilson, M. R., Poolton, J. M., Malhotra, N., Ngo, K., Bright, E., & Masters, R. S. (2011). Development and validation of a surgical workload measure: the surgery task load index (SURG-TLX). *World Journal of Surgery*, 35(9), 1961-1969.

Application Paper: Kennedy-Metz, L. R., Wolfe, H. L., Dias, R. D., Yule, S. J., & Zenati, M. A. (2020). Surgery task load index in cardiac surgery: measuring cognitive load among teams. *Surgical Innovation*, 27(6), 602-607.

Tätigkeits- und Arbeitsanalyseverfahren für das Krankenhaus

(TAA-KH-S; Büssing, A., & Glaser, J., 2002)

Description:

The „Tätigkeits- und Arbeitsanalyseverfahren für das Krankenhaus“ (TAA-KH-S) by Büssing, A., & Glaser, J. (2002). is a questionnaire which allows rating and analysis of tasks, activities and organizational aspects specifically for a hospital.

Details:

Languages	German
Items	442
Subscales	3 (Organizational Analysis, Task Analysis, Activity Analysis)
Answering format	/
Example Item	/
Reliability (Cronbach's Alpha)	0.5-0.8
Other Versions	/

Sources:

Original Paper: Büssing, A., & Glaser, J. (2002). *Das Tätigkeits- und Arbeitsanalyseverfahren für das Krankenhaus-Selbstbeobachtungsversion (TAA-KH-S)*. Hogrefe.

Questionnaire for User Interface Satisfaction

(QUIS; Chin, J.P., Diehl, V.A. & Norman, K.L., 1988)

Description:

The „Questionnaire for User Interface Satisfaction“ (QUIS) is a self-reporting questionnaire measuring work engagement by Chin, J.P., Diehl, V.A. & Norman, K.L. (1988).

Details:

Languages	English, German
Items	90
Subscales	0
Answering format	10-point Likert Scale
Example Item	<i>“Overall reaction to the software.”</i>
Reliability (Cronbach’s Alpha)	0.95
Other Versions	/

Sources:

Original Paper: Chin, J.P., Diehl, V.A. & Norman, K.L. (1988). Development of an instrument measuring user satisfaction of the human-computer interface. In *CHI '88: Proceedings of SIGCHI Conference on Human Factors in Computing*, (pp. 213-218).

Validation Paper: Harper, B., Slaughter, L. & Norman, K. (1997). Questionnaire administration via the WWW: A validation & reliability study for a user satisfaction questionnaire. In *WebNet* (Vol. 97, pp. 1-4).

Application Paper: Ghahramani, N., Lendel, I., Haque, R., & Sawruk, K. (2009). User satisfaction with computerized order entry system and its effect on workplace level of stress. *Journal of Medical Systems*, 33(3), 199-205.

Software Usability Measurement Inventory

(SUMI; Kirakowski, J., 1996)

Description:

The „Software Usability Measurement Inventory“ (SUMI) is a method to determine software quality, measured by user experience by Kirakowski, J. (1996).

Details:

Languages	English, German
Items	50
Subscales	5 (Efficiency, Affect, Help and Support, Controllability, Learnability)
Answering format	3-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Kirakowski, J. (1996). The software usability measurement inventory: background and usage. *Usability Evaluation in Industry*, 169-178.

Validation Paper: Kirakowski, J., Porteous, M., & Corbett, M. (1992). How to use the software usability measurement inventory: the user's view of software quality. In *Proceedings of European Conference on Software Quality* (pp. 3-6).

User Experience Questionnaire

(UEQ; Laugwitz, B., Schrepp, M. & Held, T., 2006)

Description:

The „User Experience Questionnaire“ (UEQ) is a questionnaire which measures the user experience of a product by Laugwitz, B., Schrepp, M. & Held, T. (2006).

Details:

Languages	English, German
Items	26
Subscales	6 (Attractiveness, Simplicity of a Problem, Efficiency, Predictability, Stimulation, Authenticity)
Answering format	7-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.65-0.89
Other Versions	UEQ-S

Sources:

Original Paper: Laugwitz, B., Schrepp, M. & Held, T. (2006). Konstruktion eines Fragebogens zur Messung der User Experience von Softwareprodukten. In Heinecke, A.M. und Paul, H. (eds.), *Mensch & Computer 2006 – Mensch und Computer im Strukturwandel* (pp. 125-134). München: Oldenbourg Wissenschaftsverlag.

Validation Paper: Laugwitz, B., Schrepp, M. & Held, T. (2006). Konstruktion eines Fragebogens zur Messung der User Experience von Softwareprodukten. In Heinecke, A.M. und Paul, H. (eds.), *Mensch & Computer 2006 – Mensch und Computer im Strukturwandel* (pp. 125-134). München: Oldenbourg Wissenschaftsverlag.

Computer System Usability Questionnaire

(CSUQ; Lewis, J. R., 1995)

Description:

The „Computer System Usability Questionnaire“ (CSUQ) is a questionnaire which measures the usability of a system by Lewis, J. R. (1995).

Details:

Languages	English
Items	19
Subscales	0
Answering format	7-point Likert Scale
Example Item	<i>“Overall, I am satisfied with how easy it is to use this system.”</i>
Reliability (Cronbach’s Alpha)	0.90-0.96
Other Versions	/

Sources:

Original Paper: Lewis, J. R. (1995). IBM computer usability satisfaction questionnaires: psychometric evaluation and instructions for use. *International Journal of Human - Computer Interaction*, 7(1), 57-78.

Validation Paper: Lewis, J. R. (1995). IBM computer usability satisfaction questionnaires: psychometric evaluation and instructions for use. *International Journal of Human - Computer Interaction*, 7(1), 57-78.

System Usability Scale

(SUS; Brooke, J., 1996)

Description:

The „System Usability Scale“ (SUS) is a questionnaire which measures the usability of a system by Brooke, J. (1996).

Details:

Languages	English, German
Items	10
Subscales	0
Answering format	5-point Likert Scale
Example Item	„I found the system unnecessarily complex.“
Reliability (Cronbach's Alpha)	0.9
Other Versions	/

Sources:

Original Paper: Brooke, J. (1996). SUS-A quick and dirty usability scale. *Usability Evaluation in Industry*, 189(194), 4-7.

Validation Paper: Bangor, A., Kortum, P. T. und Miller, J. T. (2008). An Empirical Evaluation of the System Usability Scale. *International Journal of Human-Computer Interaction*, 24(6), 574-594.

ICT Demand Scale

(Day, A., Paquet, S., Scott, N., & Hambley, L., 2012)

Description:

The „ICT Demand Scale“ is a questionnaire which measures a person's ICT (information communication technology) demands by Day, A., Paquet, S., Scott, N., & Hambley, L. (2012).

Details:

Languages	English
Items	27
Subscales	8 (Response Expectations, Availability, Ineffective Communication, Lack of Control Over ICT, Hassles Using ICT, Employee Monitoring, ICT Learning Expectations, Workload)
Answering format	5-point Likert Scale
Example Item	„I am expected to respond to e-mail messages immediately.“
Reliability (Cronbach's Alpha)	0.70-0.79
Other Versions	/

Sources:

Original Paper: Day, A., Paquet, S., Scott, N., & Hambley, L. (2012). Perceived information and communication technology (ICT) demands on employee outcomes: The moderating effect of organizational ICT support. *Journal of Occupational Health Psychology*, 17(4), 473–491.

Validation Paper: Day, A., Paquet, S., Scott, N., & Hambley, L. (2012). Perceived information and communication technology (ICT) demands on employee outcomes: The moderating effect of organizational ICT support. *Journal of Occupational Health Psychology*, 17(4), 473–491.

Technostress Creator Scale

(TCS; Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q., 2008)

Description:

The „Technostress Creator Scale“ (TCS) is a questionnaire which measures technostress levels by Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S. and Tu, Q. (2008).

Details:

Languages	English
Items	25
Subscales	5 (Techno-Overload, Techno-Invasion, Techno-Complexity, Techno-Insecurity, Techno-Uncertainty)
Answering format	6-point Likert Scale
Example Item	„I am forced by this technology to work much faster.“
Reliability (Cronbach's Alpha)	0.71-0.91
Other Versions	/

Sources:

Original Paper: Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, 19(4), 417-433.

Validation Paper: Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, 19(4), 417-433.

Digital Stressors Scale

(DSS; Fischer, T., Reuter, M., & Riedl, R., 2021)

Description:

The „Digital Stressors Scale“ (DSS) is a questionnaire which measures perceived stress that results from use of technology by Fischer, T., Reuter, M. and Riedl, R. (2021).

Details:

Languages	English
Items	50
Subscales	10 (Complexity, Conflicts, Insecurity, Invasion (of Privacy), Overload, Safety, Social Environment, Technical Support, Usefulness, Unreliability)
Answering format	7-point Likert Scale
Example Item	„I have to worry about ICT-related problems as our organization does not offer enough support for their removal.“
Reliability (Cronbach's Alpha)	0.80-0.91
Other Versions	/

Sources:

Original Paper: Fischer, T., Reuter, M., & Riedl, R. (2021). The digital stressors scale: development and validation of a new survey instrument to measure digital stress perceptions in the workplace context. *Frontiers in Psychology*, 12, 646-664.

Validation Paper: Fischer, T., Reuter, M., & Riedl, R. (2021). The digital stressors scale: development and validation of a new survey instrument to measure digital stress perceptions in the workplace context. *Frontiers in Psychology*, 12, 646-664.

Multidimensional Digital Stress Scale

(Hall, J. A., Steele, R. G., Christofferson, J. L., & Mihailova, T., 2021)

Description:

The „Multidimensional Digital Stress Scale“ is a questionnaire which measures perceived stress multidimensionally by Hall, J. A., Steele, R. G., Christofferson, J. L., & Mihailova, T. (2021).

Details:

Languages	English
Items	24
Subscales	5 (Availability Stress, Approval Anxiety, Fear of Missing Out, Connection Overload, Online Vigilance)
Answering format	5-point Likert Scale
Example Item	„My friends expect me to be constantly available online.“
Reliability (Cronbach's Alpha)	0.85-0.93
Other Versions	/

Sources:

Original Paper: Hall, J. A., Steele, R. G., Christofferson, J. L., & Mihailova, T. (2021). Development and initial evaluation of a multidimensional digital stress scale. *Psychological Assessment*, 33(3), 230-242.

Validation Paper: Hall, J. A., Steele, R. G., Christofferson, J. L., & Mihailova, T. (2021). Development and initial evaluation of a multidimensional digital stress scale. *Psychological Assessment*, 33(3), 230-242.

Central Aspects of Arbeit 4.0

(Arbeit 4.0; Poethke, U., Klasmeier, K. N., Diebig, M., Hartmann, N., & Rowold, J., 2019)

Description:

The "Instrument for the Assessment of Central Aspects of the New Way of Work" (Arbeit 4.0) is a questionnaire which assesses main aspects of "the new way of work" by Poethke, U., Klasmeier, K. N., Diebig, M., Hartmann, N., & Rowold, J. (2019).

Details:

Languages	German
Items	25
Subscales	5 (Digitalization of Work Processes, Flexibility, Dissolution of Boundaries between Work and Non-Work, Possibility to Participate in Work Processes, Subjective Relevance)
Answering format	5-point Likert Scale
Example Item	"Zur Erledigung meiner Arbeitsaufgaben bin ich abhängig von digitalen Medien (z.B. Internet, Email)."
Reliability (Cronbach's Alpha)	0.75-0.87
Other Versions	/

Sources:

Original Paper: Poethke, U., Klasmeier, K. N., Diebig, M., Hartmann, N., & Rowold, J. (2019).

Entwicklung eines Fragebogens zur Erfassung zentraler Merkmale der Arbeit 4.0. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, 63(3), 129-151.

Validation Paper: Poethke, U., Klasmeier, K. N., Diebig, M., Hartmann, N., & Rowold, J. (2019).

Entwicklung eines Fragebogens zur Erfassung zentraler Merkmale der Arbeit 4.0. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, 63(3), 129-151.

Skala zur Erfassung des organisationalen Digitalisierungsgrades

(ODG; Müller, C., Hummert, H., Traum, A., Görs, P. K., & Nerdinger, F. W., 2018)

Description:

The „Skala zur Erfassung des organisationalen Digitalisierungsgrades“ (ODG) is a questionnaire which measures the degree of digitalization in an organization by Müller, C., Hummert, H., Traum, A., Görs, P. K., & Nerdinger, F. W. (2018).

Details:

Languages	German
Items	15
Subscales	0
Answering format	5-point Likert Scale
Example Item	„In unserer Kanzlei hat man von jedem Ort aus Zugriff auf Informationen.“
Reliability (Cronbach's Alpha)	0.81-0.83
Other Versions	/

Sources:

Original Paper: Müller, C., Hummert, H., Traum, A., Görs, P. K., & Nerdinger, F. W. (2018).

Entwicklung von Skalen zur Erfassung des organisationalen bzw. arbeitsplatzbezogenen Digitalisierungsgrades (ODG/ADG-Skala) in Steuerberatungskanzleien (No. 19). Rostocker Beiträge zur Wirtschafts-und Organisationspsychologie.

Validation Paper: Görs, P. K., Hummert, H., Traum, A., & Nerdinger, F. W. (2019). Studien zur Validierung der Skala zur Erfassung des organisationalen Digitalisierungsgrades (ODG) (No. 21). Rostocker Beiträge zur Wirtschafts-und Organisationspsychologie.

Job Stress Survey

(JSS; Spielberger, C. D. & Vagg, P. R., 1999)

Description:

The „Job Stress Survey“ (JSS) is a questionnaire to determine work-related stress by C. D. Spielberger and P. R. Vagg (1999).

Details:

Languages	English, German
Items	30
Subscales	/
Answering format	10-point Likert Scale
Example Item	/
Reliability (Cronbach's Alpha)	0.80
Other Versions	/

Sources:

Original Paper: Spielberger, C. D., & Vagg, P. R. (1999). *JSS: job stress survey: professional manual*. Psychological Assessment Resources.

COPE Interface Satisfaction Scale

(Yui, B. H., Jim, W. T., Chen, M., Hsu, J. M., Liu, C. Y. & Lee, T.T., 2012)

Description:

The „COPE Interface Satisfaction Scale“ is a questionnaire by B. H. Yui, W. T. Jim, M. Chen, J. M. Hsu, C. Y. Liu and T. T. Lee (2012).

Details:

Languages	English
Items	28
Subscales	3 (Operation Functions, Effectiveness, Satisfaction)
Answering format	4-point Likert-Scale
Example Item	„The layout of the CPOE system is appropriate.“
Reliability (Cronbach's Alpha)	0.72-0.93
Other Versions	/

Sources:

Original Paper: Yui, B. H., Jim, W. T., Chen, M., Hsu, J. M., Liu, C. Y., & Lee, T. T. (2012). Evaluation of computerized physician order entry system – a satisfaction survey in Taiwan. *Journal of Medical Systems*, 36(6), 3817-3824.

Validation Paper: Yui, B. H., Jim, W. T., Chen, M., Hsu, J. M., Liu, C. Y., & Lee, T. T. (2012). Evaluation of computerized physician order entry system – a satisfaction survey in Taiwan. *Journal of Medical Systems*, 36(6), 3817-3824.

Application Paper: Yui, B. H., Jim, W. T., Chen, M., Hsu, J. M., Liu, C. Y., & Lee, T. T. (2012). Evaluation of computerized physician order entry system – a satisfaction survey in Taiwan. *Journal of Medical Systems*, 36(6), 3817-3824.

Effort-Reward-Imbalance Questionnaire

(ERI-Q; Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I. & Peter, R., 2004)

Description:

The „Effort-Reward-Imbalance Questionnaire“ (ERI-Q) is a self-report measure to determine the balance between effort and reward at work by J. Siegrist, D. Starke, T. Chandola, I. Godin, M. Marmot, I. Niedhammer and R. Peter (2004).

Details:

Languages	English, German
Items	23
Subscales	3 (Effort, Reward, Overcommitment)
Answering format	4-point Likert-Scale
Example Item	„I have constant time pressure due to a heavy work load.“
Reliability (Cronbach's Alpha)	0.70
Other Versions	/

Sources:

Original Paper: Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I., & Peter, R. (2004). The measurement of effort-reward imbalance at work: European comparisons. *Social Science & Medicine*, 58(8), 1483-1499.

Validation Paper: Siegrist, J., Li, J., & Montano, D. (2014). Psychometric properties of the effort-reward imbalance questionnaire. *Department of Medical Sociology, Faculty of Medicine, Duesseldorf University, Germany*, 1-14.

Job Content Questionnaire

(JCQ; Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P. & Amick, B., 1998)

Description:

The „Job Content Questionnaire“ (JCQ) is a measure to assess psychosocial job characteristics by R. Karasek, C. Brisson, N. Kawakami, I. Houtman, P. Bongers and B. Amick (1998).

Details:

Languages	English, German
Items	49
Subscales	5 (Decision Latitude, Psychological Demands, Social Support, Physical Demands, Job Insecurity)
Answering format	4-point Likert-Scale
Example Item	„My job requires that I learn new things.“
Reliability (Cronbach's Alpha)	0.73-0.74
Other Versions	/

Sources:

Original Paper: Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998).

The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology*, 3(4), 322-355.

Validation Paper: Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B.

(1998). The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology*, 3(4), 322-355.

Kurz-Fragebogen zur Arbeitsanalyse

(KFZQ; Prümper, J., Hartmannsgruber, K. & Frese, M., 1995)

Description:

The „Kurz-Fragebogen zur Arbeitsanalyse“ (KFZQ) is a questionnaire to measure psychological strain at work by J. Prümper, K. Hartmannsgruber and M. Frese (1995).

Details:

Languages	English, German
Items	26
Subscales	4 (Arbeitstätigkeit, Stressoren, Ressourcen, Organisationsklima)
Answering format	5-point Likert-Scale
Example Item	„Bei meiner Arbeit habe ich insgesamt gesehen häufig wechselnde, unterschiedliche Arbeitsaufgaben.“
Reliability (Cronbach's Alpha)	0.63-0.80
Other Versions	/

Sources:

Original Paper: Prümper, J., Hartmannsgruber, K., & Frese, M. (1995). KFZA. Kurz-Fragebogen zur Arbeitsanalyse. *Zeitschrift für Arbeits-und Organisationspsychologie*, 39(3), 125-131.

Validation Paper: Appel, P. (2018). *Gefährdungsbeurteilung psychischer Belastung im Gesundheitswesen: Faktorielle Struktur des Kurzfragebogens zur Arbeitsanalyse (KFZA)* (Doctoral dissertation, Universität Würzburg).

Application Paper: Bauer, J., & Groneberg, D. A. (2014). Stress und Berufszufriedenheit im Fachgebiet der stationären Anästhesiologie. *Der Anaesthesist*, 63(1), 32-40.

Leistungsmotivationsinventar

(LMI; Schuler, H. & Prochaska, M., 2001)

Description:

The „Leistungsmotivationsinventar“ (LMI) is a method to measure achievement motivation by H. Schuler and M. Prochaska (2001).

Details:

Languages	English, German
Items	170
Subscales	/
Answering format	7-point Likert-Scale
Example Item	„Ich gehe auf das Angebot ohne alternativen Lösungsversuch ein, das vermeintlich wichtige Detail wird einfach gestrichen.“
Reliability (Cronbach's Alpha)	0.68-0.86
Other Versions	/

Sources:

Original Paper: Schuler, H., & Prochaska, M. (2001). *Leistungsmotivationsinventar:*

LMI;[Dimensionen berufsbezogener Leistungsorientierung]. Hogrefe.

Validation Paper: Schuler, H., & Prochaska, M. (2001). *Leistungsmotivationsinventar:*

LMI;[Dimensionen berufsbezogener Leistungsorientierung]. Hogrefe.

Work Related Patterns of Behaviour and Experience Questionnaire

(AVEM; Schaarschmidt, U. & Fischer, A., 2006)

Description:

The „Work Related Patterns of Behaviour and Experience Questionnaire“ (AVEM) is a measure to determine occupational coping strategies by U. Schaarschmidt and A. Fischer (2006).

Details:

Languages	English, German
Items	66
Subscales	3 (Commitment to Work, Resistance to Stress, Emotional or Subjective Well-Being)
Answering format	5-point Likert-Scale
Example Item	<i>“Work is the most important part of my life.”</i>
Reliability (Cronbach’s Alpha)	0.79-0.87
Other Versions	/

Sources:

Original Paper: Schaarschmidt, U., & Fischer, A. (2006). *Arbeitsbezogenes Verhaltens-und Erlebensmuster (AVEM): Manual*. Harcourt Test Services.

Validation Paper: Schaarschmidt, U., & Fischer, A. (2006). *Arbeitsbezogenes Verhaltens-und Erlebensmuster (AVEM): Manual*. Harcourt Test Services.

Job Diagnostic Survey

(JDS; Hackman, J. R. & Oldham, G. R., 1975)

Description:

The „Job Diagnostic Survey“ (JDS) is a job analysis method by J. Hackman and G. R. Oldham (1975).

Details:

Languages	English, German
Items	81
Subscales	5 (Skill Variety, Task Identity, Task Significance, Autonomy, Feedback)
Answering format	7-point Likert-Scale
Example Item	„After I finish a job, I know whether I performed well.“
Reliability (Cronbach's Alpha)	0.56-0.88
Other Versions	/

Sources:

Original Paper: Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60(2), 159-170.

Validation Paper: Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60(2), 159-170.

Beanspruchungs-Mess-Skalen

(BMS; Debitz, U., Plath, H. E. & Richter, P., 2016)

Description:

The „Beanspruchungs-Mess-Skalen“ (BMS) is a German method to evaluate different states of stress by U. Debitz, H. E. Plath and P. Richter (2016).

Details:

Languages	German
Items	40
Subscales	4 (Psychische Ermüdung, Monotonie, Psychische Sättigung, Stress)
Answering format	Dichotomous
Example Item	„Ich habe diese Arbeit momentan satt.“
Reliability (Cronbach's Alpha)	/
Other Versions	/

Sources:

Original Paper: Debitz, U., Plath, H. E., & Richter, P. (2016). *BMS Beanspruchungs-Mess-Skalen: Verfahren zur Erfassung erlebter Beanspruchungsfolgen: psychische Ermüdung-Monotonie-psychische Sättigung-Stress; Manual*. Hogrefe.

Job Satisfaction Scale

(Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S. & Tu, Q., 2008)

Description:

The „Job Satisfaction Scale“ is an instrument to measure job satisfaction by T. S. Ragu-Nathan, M. Tarafdar, B. S. Ragu-Nathan and Q. Tu (2008).

Details:

Languages	English, German
Items	3
Subscales	/
Answering format	5-point Likert-Scale
Example Item	<i>“I feel a sense of pride in doing my job.”</i>
Reliability (Cronbach’s Alpha)	0.87
Other Versions	/

Sources:

Original Paper: Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, 19(4), 417-433.

Validation Paper: Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, 19(4), 417-433.

Verfahren zur Tätigkeitsanalyse und Gestaltung bei mentalen Arbeitsanforderungen

(TAG-MA; Rau, R., Schweden, F., Hoppe, J. & Hacker, W., 2021)

Description:

The „Verfahren zur Tätigkeitsanalyse und Gestaltung bei mentalen Arbeitsanforderungen“ (TAG-MA) is a German instrument to examine health beneficial job design and to execute risk assessment by R. Rau, F. Schweden, J. Hoppe and W. Hacker (2021).

Details:

Languages	German
Items	0 (Observation)
Subscales	/
Answering format	/
Example Item	“Welche Aufträge haben Sie?”
Reliability (Cronbach’s Alpha)	/
Other Versions	/

Sources:

Original Paper: Rau, R., Schweden, F., Hoppe, J., & Hacker, W. (2021). *Verfahren zur Tätigkeitsanalyse und -gestaltung bei mentalen Arbeitsanforderungen (TAG-MA)*. Asanger, R.

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