

Occupational
Health Clinics
for Ontario Workers



Centre de Santé
des Travailleurs(es)
de l'Ontario

How important is it to use a “valid” questionnaire to measure workplace stress?

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May 22, 2024



How important is it to use a “valid” questionnaire to measure workplace stress?

- In the HR field there are all kinds of surveys available to workplaces – surveys that claim to measure **engagement, job satisfaction, workplace culture, burnout, work/life balance**, etc.
- Very few of authors of these commercially available surveys have published any evidence regarding their **validity and reliability** of their instruments.
- There are also **disagreements about the need** to establish the validity of questionnaires: some saying its “overkill”.
- What does it mean to use a “**valid**” questionnaire?



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- Life Evaluation Index >
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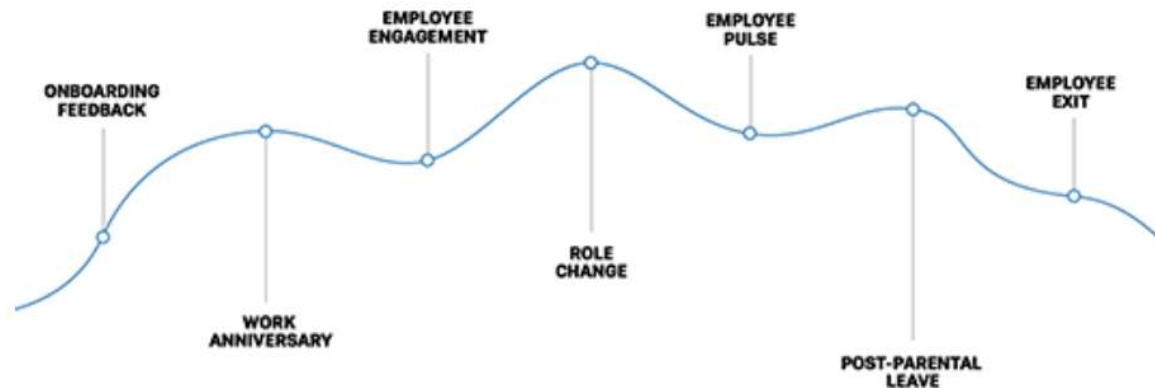
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from  Meta

<https://www.workplace.com/features/surveys>



Workplace Surveys

Check your organization's pulse and show your people you want to hear from them by sending out short, automated surveys on Workplace.

What is it? —

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They've been using surveys for psychosocial assessments for years in the EU ...

- European Framework Directive on Health and Safety at Work (89/391/EEC), which came into force on January 1st **1993** was interpreted as including psychosocial risks as a part of the workplace risk assessment
- European Parliament's Resolution A4-0050/99 (February 25, **1999**) specified the goals of workplace well-being to include psychosocial aspects
- These were **generic requirements** (i.e. "assess risks including psychosocial") without specific performance evaluations (similar to our current state of affairs with violence & harassment policies) and were largely ignored or only paid lip-service to
- Within the **last 10-15 years** EU members have been passing very specific regulations requirement the measurement of psychosocial hazards and some even so far as requiring the quantitative demonstration of the effect of interventions
- EU **2012** enforcement "blitz" on psychosocial risk assessment



... also, in many South American countries



even required for
government
agencies in the US



Empowering Employees. Inspiring Change.

2023 survey:

- just over **650,000** respondents
- about **120** questions
- raw **data available** online

<https://www.opm.gov/fevs/about/>

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CSA Voluntary Standard Z1003-13



CAN/CSA-Z1003-13/BNQ 9700-803/2013
National Standard of Canada
(reaffirmed 2022)

Psychological health and safety in the workplace — Prevention, promotion, and guidance to staged implementation

Disponible en français
*Santé et sécurité psychologiques
en milieu de travail —
Prévention, promotion et lignes
directrices pour une mise en
œuvre par étapes*



http://shop.csa.ca/en/canada/occupational-health-and-safety-management/canca-z1003-13bnq-9700-8032013/invnt/z10032013/?utm_source=redirect&utm_medium=vanity&utm_content=folder&utm_campaign=z1003

Commissioned by the
Mental Health Commission of Canada



The 13 Psychosocial Factors:

Psychological
& social
support

Organizational
culture

Clear
leadership &
expectations

Civility and
respect

Psychological
demands

Growth and
development

Recognition
and reward

Involvement
and influence

Workload
management

Engagement

Work/life
balance

Psychological
protection

Protection of
physical
safety

(CAN/CSA-Z1003-13/BNQ 9700-803/2013 - Psychological health and safety in the workplace - Prevention, promotion, and guidance to staged implementation; page 8.)



Two questions we often get asked:

1. Does your survey measure the CSA 13 factors?
2. Is it a validated survey?



CSA 13 factors vs. COPSQQ 18-23 factors



Items that make up a scale:

Guarding Minds @ Work

PF9: Workload Management

1. I feel my job is secure.
2. I have sufficient time to complete my work.
3. Deadlines are reasonable.
4. The frequency of staff turnover is reasonable for our sector.
5. The amount of work I am expected to do is reasonable for my position.
6. I can talk to my supervisor about the amount of work I have to do.
7. I can do my job effectively with the tools and equipment provided.

- PF1: Psychological Support
- PF2: Organizational Culture
- PF3: Clear Leadership & Expectations
- PF4: Civility & Respect
- PF5: Psychological Demands
- PF6: Growth & Development
- PF7: Recognition & Reward
- PF8: Involvement & Influence
- PF9: Workload Management
- PF10: Engagement
- PF11: Balance
- PF12: Psychological Protection
- PF13: Protection of Physical Safety



Ways to assess questionnaire validity

1. **Face validity** – would a respondent feel you had covered the scope of the topic
2. **Content validity** – do experts feel it covers the scope of the topic
3. **Criterion validity** – can you compare the measurement to a gold standard (if there is one)
4. **Construct validity** – do the scales function the way the theory predicts (factor analysis)
 - a) **Convergent validity** – does the measure correlate with other measures it should correlate with
 - b) **Discriminant validity** – can the scale does not correlate with measures that it shouldn't correlate with
 - c) **Predictive validity** – it can predict who falls into their proper category, or will be within a certain range of scores



Face validity:

- While generally not taken very seriously, face validity was very important to MIT group – wanted to ensure the scope of the topic had **good coverage from the perspective of the user**
- Pilot administrations brought numerous suggestions of items that were **missing**
- Anecdotally we heard that simply filling out the expanded survey was **“educational” in itself**
- The length of the survey is always an issue, tried to **strike a balance between being too long and incomplete** – maximum tolerable seems to be at about 20-25 minutes for the majority (significant minority feel this is too long: typically, 10-25% abandonment which includes those who just want to see the content but not participate)



Workplace Psychosocial Scales

from the COPSOQ III CORE survey & COPSOQ II Short

Work demands:

quantitative demands: not having enough time to get your work done

work pace: having to work at a high pace to get your work done

emotional demands: doing work that involves emotional issues

Work organization:

influence: having influence over the amount of work and how to do it

possibilities for development: able to learn new things, take initiative

meaning of work: feeling your work is important and meaningful

commitment: feeling your workplace makes a positive contribution

Work relationships:

predictability: being kept well informed, having enough information

recognition: being appreciated and treated fairly

role clarity: knowing what is expected and having clear objectives

leadership: supervisor has planning skills & values your job satisfaction

supervisor support: your supervisor listens and helps

colleague support: your colleagues provide support & sense of community

role conflicts: contradictory demands; having to do work inefficiently

Work values (Social Capital):

vertical trust: information from mgmt is trustworthy; mgmt trusts worker

justice & respect: conflicts resolved fairly, work distributed fairly

Job/employment factors:

insecure job: being worried about needing to find another job

unstable job: being worried about changes in working loads/tasks

job satisfaction: all things considered, being satisfied with work

work/life conflict: time/energy away from work affected by job demands

Offensive behaviours:

sexual harassment; threats of violence; physical violence; bullying



Additional Items & Scales



scales/items added by the Mental Injury Tool (MIT) group:

Work demands:

- unpaid hours/week
- work through breaks
- % time doing paperwork
- shift work

Measures of employment precarity:

- full time/ not full time
- primary wage earner
- work for another employer
- job security

Job/employment factors:

- hours worked per week
- accommodation for outside responsibilities
- workplace has sufficient resources
- staffing levels are adequate

Personal/job demographics:

- seniority
- hours worked per week
- management status
- age category
- gender
- education
- job class/category

Workplace culture/climate:

- accident investigation attitudes (look for cause, or to blame)
- violence & harassment policy effectiveness
- tolerance of behaviours harmful to mental health
- rating of psychological H&S

additional Offensive behaviours:

- discrimination
- vicarious offensive behaviours

Workplace environment and H&S concerns:

workstation quality:

- thermal comfort
- air quality
- physical factors (noise & lighting)
- ergonomics

hazardous exposures/activities:

- dangerous chemicals
- biological
- radiation
- driving
- safety
- working alone

Long COPSOQ Health & Symptoms:

- self-rated health
- stress
- burnout
- sleeping troubles
- somatic symptoms
- cognitive symptoms



Content validity



National Research Centre
for the Working Environment

- MIT group appreciated the work and intentions in the selection of items for the COPSOQ II – attempting to span the major theories of workplace stress
- Academic partners also endorsed COPSOQ II and had some experience using COPSOQ scales in investigations (Bernadette Stringer & Ted Haines et al (2008) “Final Report on Evaluating Mental Health Works: a feasibility study”)
- The website with the psychometrics and the history of the development of the scales was quite valuable and appreciated
- Published scientific literature seems to appreciate the breadth of COPSOQ (<https://www.copsoq-network.org/publications-on-copsoq/>)

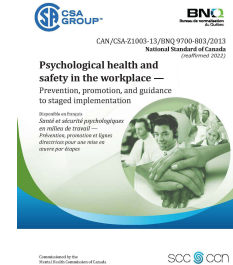


Theoretical Framework (construct):

- The intent was to create an instrument that measured psychosocial risk factors by covering the important dimensions of the seven theories of workplace stress:
 1. The job characteristics model (JCM)
 2. The Michigan organization stress (MOS) model
 3. The job demands–control model (DC)
 4. The sociotechnical (ST) approach
 5. The action-theoretical (AT) approach
 6. The effort–reward imbalance (ERI) model
 7. The vitamin model (VM)
 8. also absorbed other models such as Organizational Justice, over the yrs
 9. recently demonstrated that elements are also consistent with the Job Demands – Resources (JD-R) model

COPSOQ





Key factors mentioned in CSA Z1003

“From this perspective, law and science agree that risks to mental health are more likely to arise and contribute to a psychologically unsafe workplace in the following situations:

- a) **Job demands** and requirements of **effort**: Job demands consistently and chronically exceed worker skill levels or exploit them beyond what would be considered reasonable for a particular type of undertaking, or where work is distributed inequitably.
- b) **Job control** or **influence**: Discretion over the means, manner, and methods of their work (including “voice” or the perceived freedom to express views or feelings appropriate to the situation or context) is withheld from workers by choice rather than because of the intrinsic nature of the work.
- c) **Reward**: Praise, recognition, acknowledgement, and credit are withheld from workers for no good business reasons.
- d) **Fairness**: There is consistent failure or refusal to recognize and accommodate the reasonable needs, rights, and claims of workers. Perceptions of such failure can arise from feelings that decisions are made without attention to due process.
- e) **Support**: Support with regard to advice, direction, planning, and provision of technical and practical resources and information (to the extent that they are available within the organization) is withheld from workers by choice rather than because of some systematic constraint within the organization.”



Effort-Reward Imbalance (ERI – Seigrist, 1996)

“An alternative theoretical model, which looks at the reward rather than the control structure of work”

- Effort is what the worker contributes
 - over-commitment is recognized as a risk factor
- Rewards are broken down into 3 categories:
 - money (e.g., adequate salary, pay raise),
 - esteem (e.g., respect and support), and
 - security/career opportunities (e.g., promotion prospects, job security and status).



Job Demand-Control model (JDC – Karasek, 1979)



“In the JDC model there are two different hypotheses, the strain hypothesis and the learning hypothesis.”

- strain hypothesis
- learning hypothesis

“In the eighties the model expanded with a social dimension. The Job Demand-Control-**Support** (JDCS) model acknowledges that social support is vital for the employee when coping with different demands at work.”



Organizational **Justice** Model (Elovainio, Kivimäki & Vahtera, 2001)



- Originally conceived as two dimensions of procedural and relational justice

“In the work life context, it is a question not only of distributing resources and obligations, but also of the procedures and rules that guide the decision-making in the organization. Studies of these rules and procedures have provided the basis for a new line of research that evaluates leadership and social relationships in working communities; that is, **distributive, procedural, and relational** justice.”

“Justice at the Workplace: A Review” by Virtanen & Elovainio

Camb Q Healthc Ethics. 2018 Apr;27(2):306-315



Job Demands-Resources

(JD-R – Demerouti, Bakker & Schaufeli, 2001)



An attempt to unify existing theories:

“**Demands** are said to be physical or social aspects of a job that require efforts and thus have physical and mental costs, and ...”

“**resources** as workplace or organisational aspects that help with the achievement of work goals, reduce demands, or stimulate growth and development. “

Mark, G.M. Smith, A.P. 2008. *Stress models: A review and suggested new direction*. Vol. 3. EA-OHP series. Edited by J. Houdmont S. Leka. Nottingham University Press. 111-144.



When all you have is a hammer, all your problems look like nails:

The tool (theory) you select will shape the possible “solutions”



Differing Perspectives:

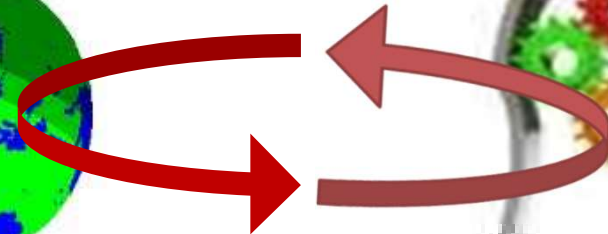
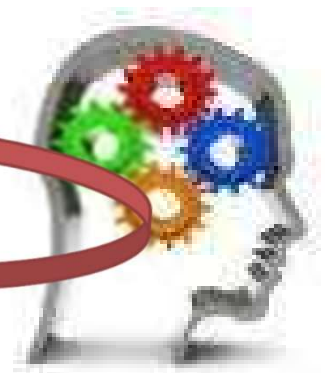


Psychology



focus on what's going on
between the ears
- individual only
("responsibilisation")

Psychosocial



focus on the interaction between the social
environment and the person
- individual and collective responsibilities

Items (Questions) & Scales (Group of Questions)

Items (2-item scale – COPSOQ Quantitative Demands):

1. How often do you not have time to complete all your work tasks?
2. Do you get behind with your work?

Response options:

Always (1); Often (2); Sometimes (3); Seldom (4); Never/hardly ever (5)

To a very large extent (1); To a large extent (2) ; Somewhat (3); To a small extent (4);
To a very small extent (5)

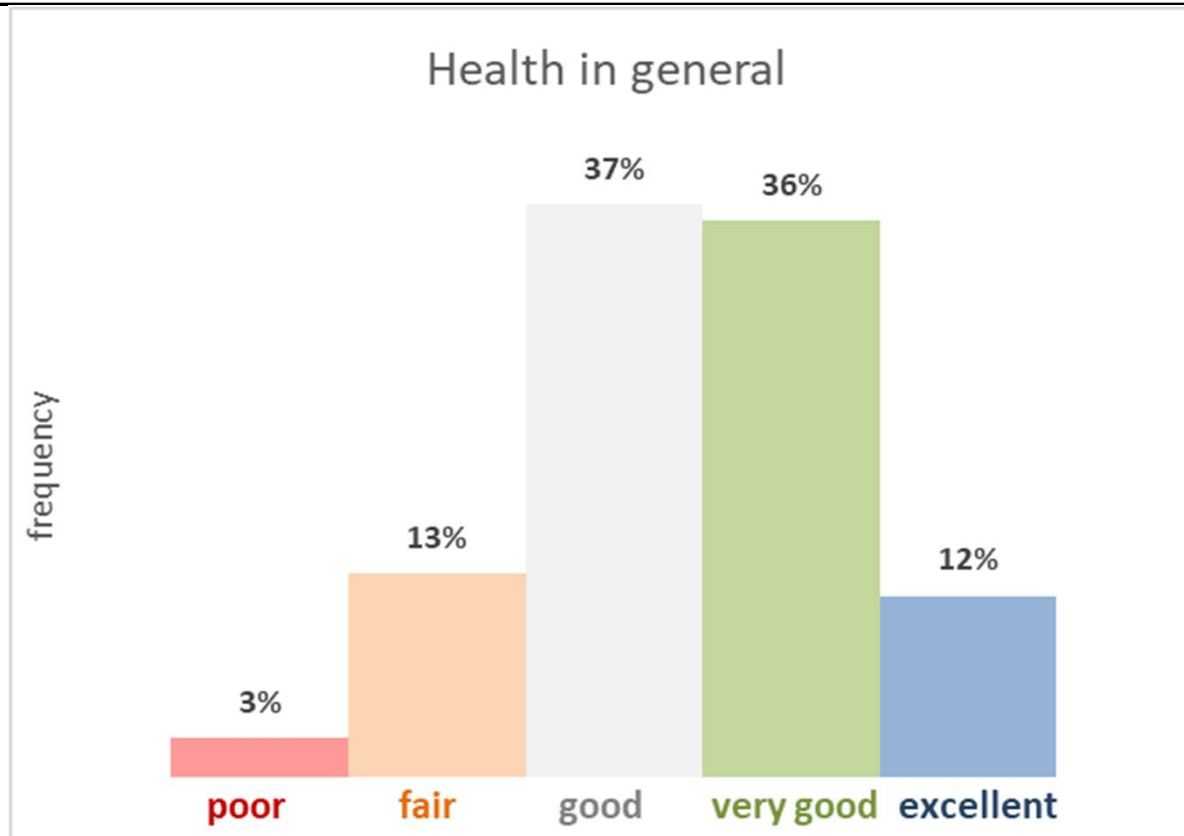
Yes, daily (1); Yes, weekly (2); Yes, monthly (3); Yes, a few times (4) ; No (5)

Strongly agree (1); Agree (2); Neutral (3); Disagree (4); Strongly Disagree (5)



over all self-reported health

GH1: In general, would you say your health is: poor
fair
good
very good
excellent



<https://www.tandfonline.com/doi/full/10.1080/08870446.2011.621703>

EDITORIAL

Why does self-rated health predict mortality? An update on current knowledge and a research agenda for psychologists

‘How in general would you rate your health – poor, fair, good, very good or excellent?’ This simple question is typically labelled self-rated health (SRH) and is also known as self-assessed health, self-evaluated health, subjective health or perceived health. The large number of studies using this item is in stark contrast to its brevity and simplicity. Its value as a predictor of mortality and other health outcomes makes this paradox even more intriguing, especially since in most of the studies SRH retained an independent effect even after controlling for a wide variety of health-related measures that cover medical, physical, cognitive, emotional and social status (see reviews by Benyamini & Idler, 1999; Idler & Benyamini, 1997).



Interpreting the scale scores:

Fixed/absolute values

5 questions (items) per scale; with 4 response options each; all questions measuring positive (the higher the score the better); possible scores of 5-20; all scales have the same interpretation:

5-9 serious concerns
10-13 significant concerns
14-16 minimal concerns
17-20 relative strengths

Relative values

- Scales of different lengths with varying response options (frequency, intensity, agreement), scores converted to a 0-100 scale; some scale positive, others negative
- Compare to population average; each scale has a different benchmark
- Minimal meaningful difference: about 0.2-0.5 standard deviation from population mean (depending on the scale)

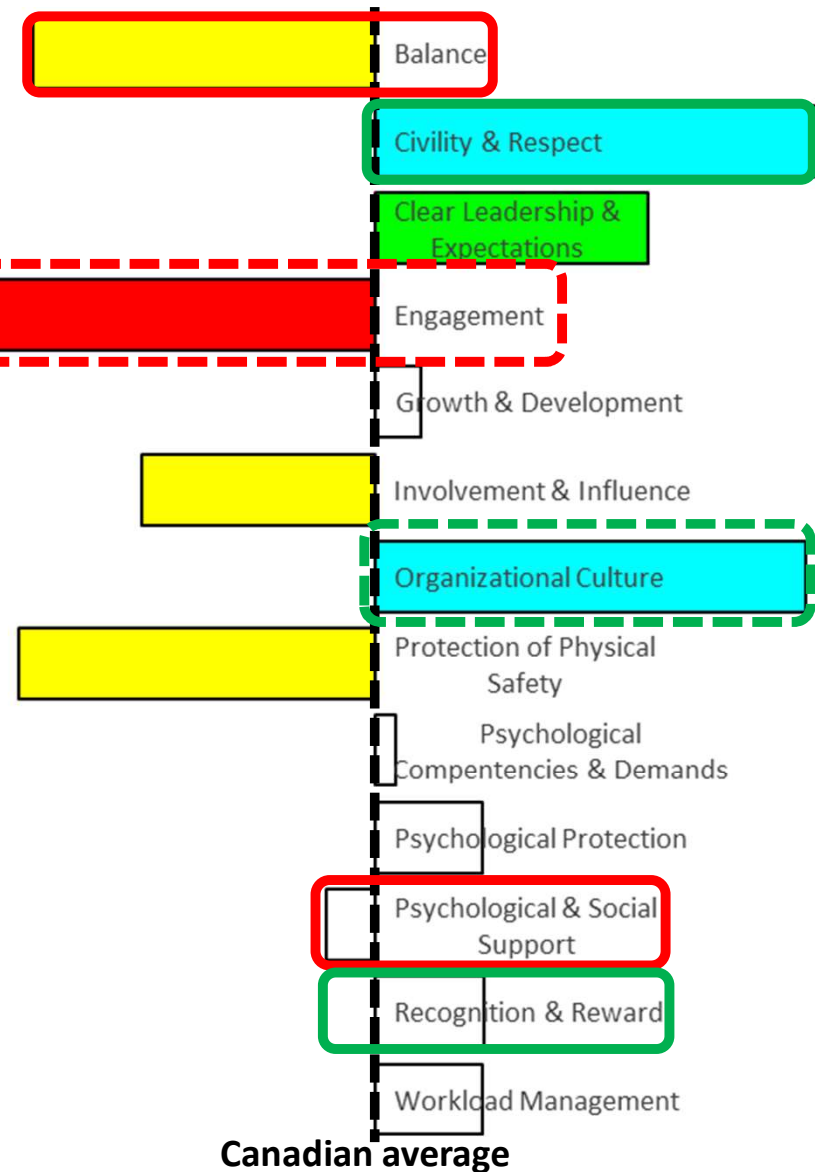


Results (fixed scales):



Results (relative scales):

As compared to the population averages:



How well are the questions (items) and scales perform:

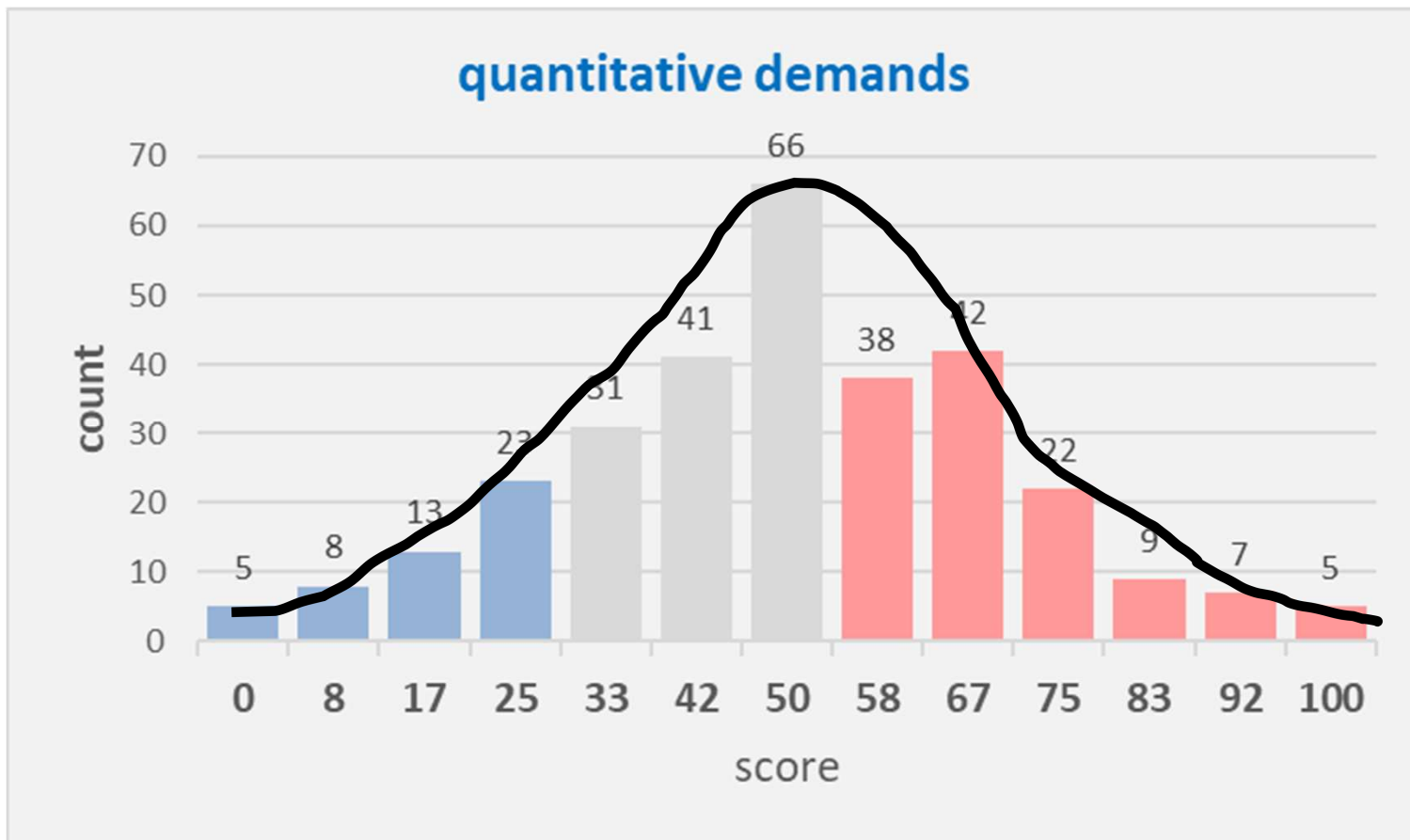
- Average score (for 0-100 scale, average should not be **<20** or **>80**)
- Percentage missing (**>2%** start to be concerned)
- Ceiling effects (**>15%** at the maximum possible score)
- Floor effects (**>15%** at the minimum possible score)
- Response option endorsement (no single response option should have **>40%** of the total response for that item)
- Internal consistency (Cronbach's α for 3 or more items; Spearman-Brown statistic for scales with 2 items; either **>0.6-0.7**)
- Correlation matrix, no items with Spearman rho correlation **> 0.70**



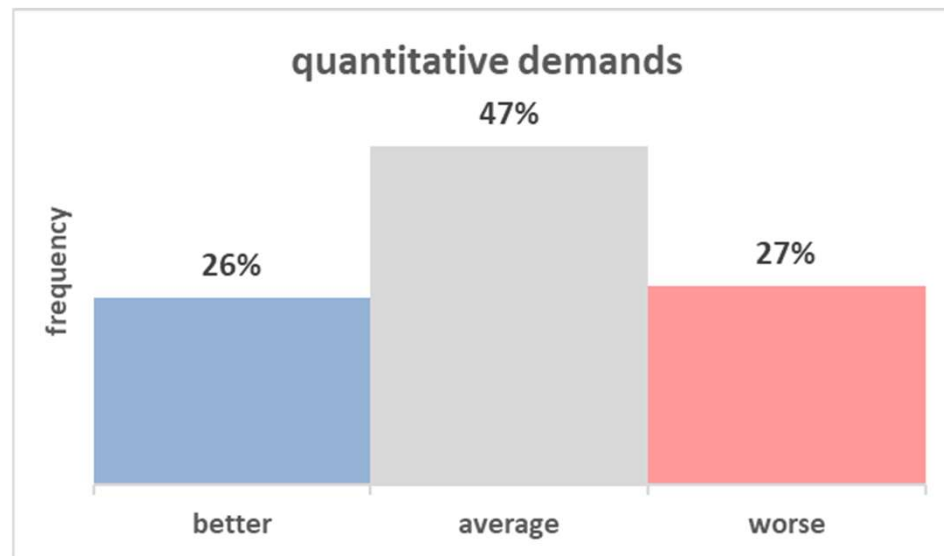
	number of items	English (n=3237)					French (n=771)				
		mean score	Cronbach's α	% missing	% floor	% ceiling	mean score	Cronbach's α	% missing	% floor	% ceiling
quantitative demands	2	46	0.611	0.5%	6.4%	3.3%	41	0.851	0.4%	9.1%	1.6%
work pace	2	60	0.706	1.4%	1.2%	8.3%	62	0.740	1.9%	1.5%	10.1%
emotional demands	3	46	0.782	0.2%	4.6%	2.2%	47	0.779	0.4%	3.1%	1.7%
influence	2	49	0.720	0.1%	6.6%	5.5%	48	0.736	0.1%	6.6%	3.2%
possibilities for development	3	70	0.753	1.3%	0.7%	11.4%	69	0.747	1.8%	0.7%	8.7%
meaning of work	2	70	0.886	4.6%	3.2%	25.9%	74	0.810	2.6%	1.7%	23.2%
commitment to the workplace	2	61	0.722	0.6%	4.1%	12.0%	64	0.645	0.4%	2.2%	10.5%
predictability	2	53	0.782	0.6%	4.9%	6.0%	56	0.794	0.6%	3.7%	6.9%
rewards (recognition)	2	62	0.837	2.6%	4.0%	13.9%	65	0.724	2.5%	1.6%	14.2%
role clarity	2	71	0.827	0.9%	1.6%	19.9%	72	0.852	0.8%	1.2%	20.8%
role conflicts	3	48	0.826	0.9%	6.1%	3.8%	48	0.827	1.2%	2.1%	3.9%
quality of leadership	2	55	0.857	2.4%	6.0%	5.2%	59	0.845	1.2%	2.8%	6.6%
social support from supervisor	3	67	0.855	2.2%	4.4%	23.8%	67	0.856	1.0%	3.0%	20.1%
social support from colleagues	2	74	0.728	0.9%	0.9%	20.6%	74	0.690	0.5%	0.4%	15.8%
job insecurity	3	33	0.692	0.7%	16.4%	1.5%	27	0.721	0.6%	20.4%	1.4%
job satisfaction	1	70		0.7%	4.1%	24.4%	71		0.6%	2.6%	23.9%
work-life imbalance	3	46	0.797	0.2%	7.8%	7.0%	40	0.843	0.6%	13.6%	6.3%
trust of mgmt	2	65	0.794	0.3%	2.6%	12.6%	69	0.767	0.6%	1.2%	14.0%
justice & respect	2	58	0.780	0.3%	3.7%	8.3%	61	0.737	0.8%	1.7%	7.2%



A “perfectly” balanced scale:



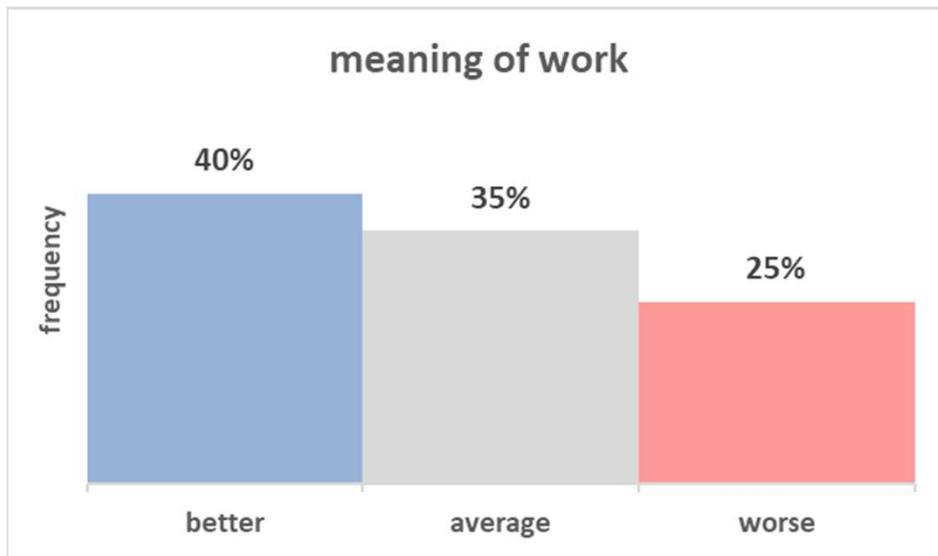
A “perfectly” balanced scale:



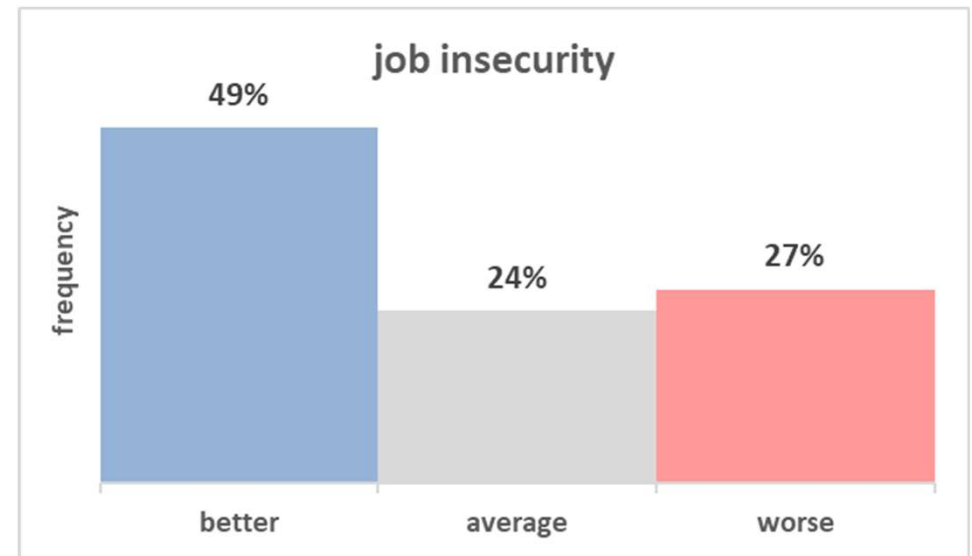
average score: 50



skewed scales:



average score: 77



average score: 26



Excessive endorsement of a single response option (<40%)

item	score				
	0	25	50	75	100
q1 get behind with your work	14.3%	27.0%	36.9%	15.6%	6.1%
Q21B2 not have time to complete all your work tasks	11.9%	25.9%	29.8%	23.8%	8.5%
q3 work very fast	4.3%	12.7%	41.3%	27.1%	14.5%
q4 high pace throughout the day	3.8%	11.4%	32.5%	35.2%	17.1%
Q21E discuss workload with supervisor	9.5%	13.9%	22.6%	25.1%	28.8%
q5 emotionally disturbing situations	19.9%	24.7%	33.4%	16.9%	5.1%
q6 deal to other people's personal problems	15.0%	19.7%	29.8%	23.1%	12.3%
q7 large degree of influence	12.7%	18.4%	30.0%	27.7%	11.2%
q8 influence the amount of work	15.6%	20.9%	32.7%	22.1%	8.7%
Q22A emotionally demanding	13.9%	21.6%	31.3%	20.6%	12.6%
q9 learning new things	5.6%	11.0%	28.4%	33.7%	21.2%
Q22C skills or expertise	3.0%	6.6%	18.7%	37.8%	33.9%
q10 take the initiative	2.5%	6.6%	22.9%	36.8%	31.2%
q11 work meaningful	5.2%	8.2%	22.1%	33.1%	31.5%
q12 work you do is important	3.8%	6.5%	20.4%	34.3%	35.0%

item	score				
	0	25	50	75	100
q13 work is of great importance to you	7.1%	10.3%	24.9%	35.3%	22.3%
q14 recommend to apply for a position	11.3%	11.5%	25.9%	31.2%	20.0%
q15 you informed well in advance	17.5%	18.0%	29.7%	25.6%	9.2%
q16 receive all the info you need	5.7%	14.0%	29.7%	37.3%	13.3%
q17 work recognised appreciated by mgmt	11.3%	13.1%	27.1%	30.1%	18.4%
q18 treated fairly	5.5%	8.6%	23.3%	37.8%	24.8%
q19 work have clear objectives	3.2%	7.3%	24.2%	40.3%	24.9%
q20 know exactly what is expected	2.5%	5.4%	19.4%	43.8%	28.9%
Q22N2 contradictory demands	17.9%	23.5%	30.6%	17.6%	10.3%
Q22N3 should do work a different way	11.0%	19.9%	37.1%	21.1%	10.8%
Q22N4 doing unnecessary work	13.8%	22.0%	33.7%	19.2%	11.3%
q21 immediate superior gives high priority to job satisfaction	13.0%	11.1%	29.1%	32.8%	14.1%
q22 immediate superior is good at work planning	12.3%	11.3%	31.4%	32.3%	12.8%
Q22Q superior is good at solving conflicts	13.8%	12.6%	28.6%	30.5%	14.5%
q23 nearest superior willing to listen	6.1%	9.0%	21.9%	28.2%	34.7%



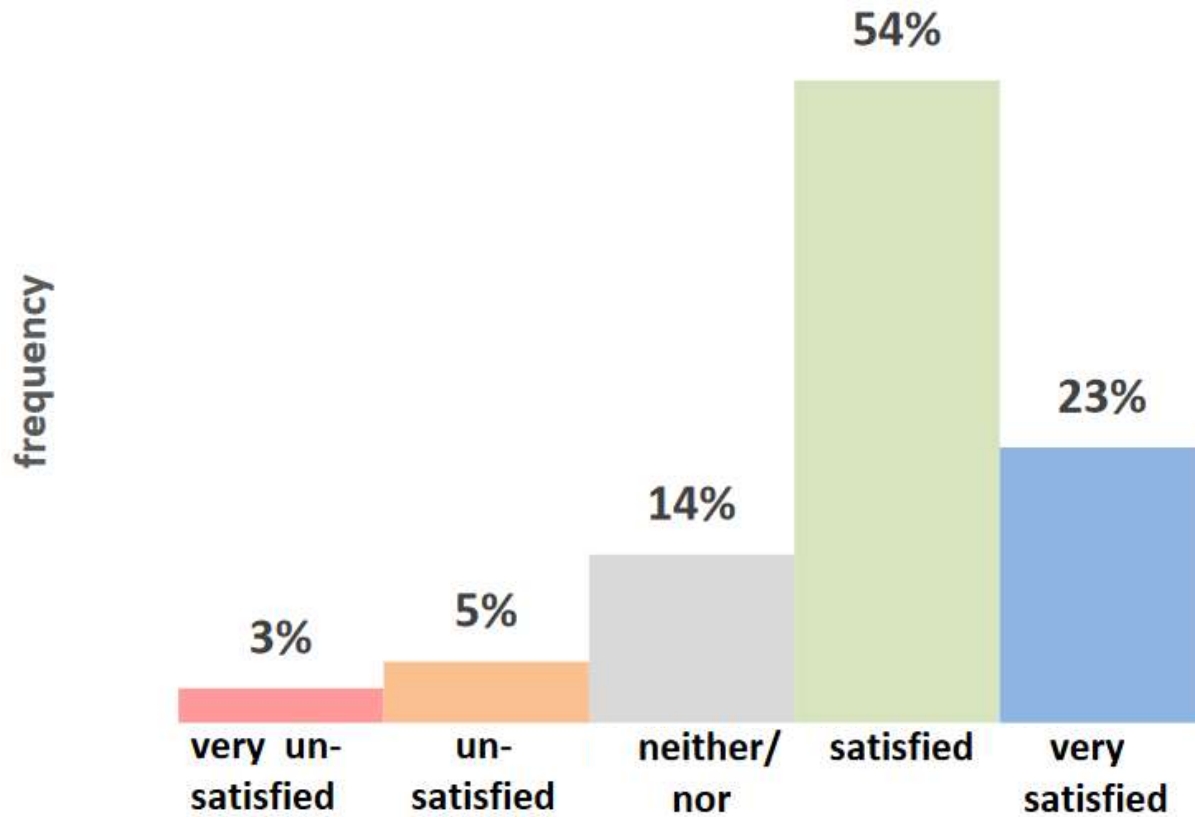
item	score				
	0	25	50	75	100
q24 help support from your nearest superior	7.8%	11.3%	25.2%	28.6%	27.1%
Q23B2 support from your colleagues	3.0%	6.9%	24.2%	38.4%	27.5%
Q23B3 atmosphere good between colleagues	1.3%	2.7%	14.9%	45.9%	35.1%
Q24C afraid of becoming unemployed	38.7%	24.9%	19.9%	8.8%	7.7%
Q24D difficulty finding another job	24.5%	17.8%	23.2%	16.5%	17.9%
Q24E transferred to another job	61.2%	17.5%	11.9%	5.9%	3.5%
q25 pleased with your job	3.8%	8.2%	16.2%	47.4%	24.3%
q28 Can you trust mgmt information	6.0%	8.6%	27.5%	38.6%	19.2%
q29 Does the mgmt trust employees	4.3%	7.9%	24.3%	42.4%	21.1%
q30 conflicts resolved in a fair way	7.3%	10.5%	31.5%	36.4%	14.4%
q31 work distributed fairly	7.2%	13.1%	33.3%	34.5%	11.8%
	0	33	67	100	
q26 work drains energy affects private life	18.7%	32.4%	30.9%	18.1%	
q27 work takes time affects private life	29.3%	29.9%	26.5%	14.3%	
Q25B2 double presence	27.5%	34.6%	20.7%	17.2%	



Question:

JS4 Regarding your work in general. How pleased are you with your job as a whole, everything taken into consideration?

Job Satisfaction



How are the scales correlated with each other?

- Scales measuring psychosocial factors need to be distinct, yet can be related to each other to a certain degree
- “Quantitative Demands” and “Work Pace” would be expected to occur together (scales expected to correlate) but not always – somewhat distinct but related
- the correlation coefficient measures the degree to which two scales occur together: 1.00 (or -1.00) is considered perfect correlation; on the other extreme 0.00 is no correlation at all; correlations can be positive or negative
- Any two scales with a correlation of **>0.70 (or <-0.70)** should be reviewed to see if they measure the same thing



Perfect Positive

Strong Positive

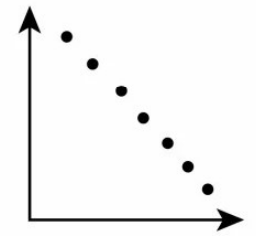
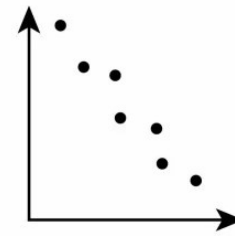
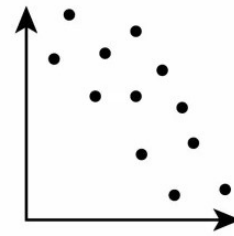
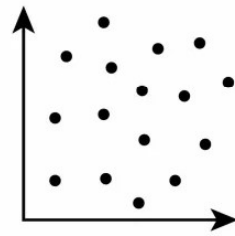
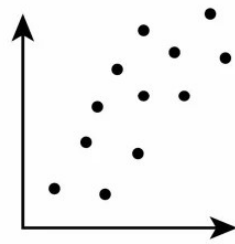
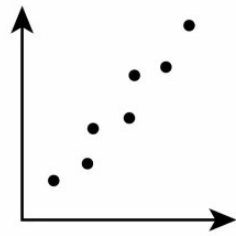
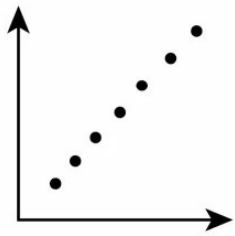
Weak Positive

No Correlation

Weak Negative

strong Negative

Perfect Negative



1

0.9

0.5

0

-0.5

-0.9

-1

<https://www.simplypsychology.org/correlation.html>



Spearman Correlations of COPSOQ Scales

	quantitative demands	work pace	emotional demands	influence	possibilities for development	meaning of work	predictability	rewards (recognition)	role clarity	role conflicts	quality of leadership	social support from supervisor	social support from colleagues	job insecurity	trust of mgmt	justice & respect
quantitative demands	1.000															
work pace	0.356	1.000														
emotional demands	0.349	0.391	1.000													
influence	0.020	-0.093	-0.084	1.000												
possibilities for development	0.119	0.191	0.119	0.452	1.000											
meaning of work	0.037	0.101	0.120	0.330	0.624	1.000										
predictability	-0.115	-0.070	-0.188	0.489	0.408	0.426	1.000									
rewards (recognition)	-0.139	-0.115	-0.267	0.515	0.450	0.441	0.694	1.000								
role clarity	-0.156	0.025	-0.170	0.269	0.347	0.412	0.545	0.576	1.000							
role conflicts	0.311	0.328	0.448	-0.211	-0.047	-0.122	-0.351	-0.412	-0.331	1.000						
quality of leadership	-0.136	-0.119	-0.238	0.386	0.331	0.339	0.590	0.643	0.461	-0.345	1.000					
social support from supervisor	-0.151	-0.147	-0.259	0.389	0.336	0.304	0.501	0.625	0.445	-0.375	0.718	1.000				
social support from colleagues	-0.122	-0.080	-0.185	0.280	0.321	0.342	0.379	0.470	0.382	-0.245	0.412	0.511	1.000			
job insecurity	0.146	0.107	0.193	-0.212	-0.199	-0.258	-0.256	-0.328	-0.262	0.290	-0.182	-0.257	-0.275	1.000		
trust of mgmt	-0.149	-0.102	-0.271	0.388	0.340	0.340	0.596	0.638	0.476	-0.423	0.574	0.515	0.408	-0.247	1.000	
justice & respect	-0.194	-0.190	-0.325	0.406	0.304	0.306	0.601	0.665	0.468	-0.454	0.622	0.568	0.453	-0.253	0.724	1.000

Why are these scales so correlated? (correlation = 0.718)

Quality of Leadership

Scale Questions:

QL2 To what extent would you say that your immediate superior gives high priority to job satisfaction

QL3 To what extent would you say that your immediate superior is good at work planning?

QL4 To what extent would you say that your immediate superior is good at solving conflicts?

Social Support from Supervisor

Scale Questions:

SSX1 How often is your nearest superior willing to listen to your problems at work, if needed?

SSX2 How often do you get help and support from your nearest superior, if needed?

... should we combine these two?



Why are these scales so correlated? (correlation = 0.724)

Vertical Trust

Scale Questions:

TMX2 Can the employees trust the information that comes from the management?

TM1 Does the management trust the employees to do their work well?

Justice and Respect

Scale Questions:

JU1 Are conflicts resolved in a fair way?

JU4 Is the work distributed fairly?

**the combination is defined
as social capital**



Scale Internal Consistency (Reliability):

Internal consistency is a measure of the **reliability of the scale** (are the items in the scale similar to each other). For scales with only two items, the **Spearman-Brown Statistic** is recommended, and for scales with more than two items **Cronbach's α** is recommended.

Shorter scales have a disadvantage (Cronbach's α generally improves with the number of items in a scale).

Generally values above 0.70 are considered acceptable for empirical studies.

Given the shortness of the scales used in this survey, we consider values between 0.60-0.70 also acceptable even though normally they would be classified as "questionable"

Values between 0.50-0.60 are considered poor and values below 0.50 are considered unacceptable



Scale Internal Consistency (Reliability):

scales	items	Spearman-Brown statistic	Cronbach's α
quantitative demands	2	0.89	n/a
work pace	2	0.84	n/a
emotional demands	3	n/a	0.78
influence	2	0.27	n/a
possibilities for development	3	n/a	0.70
meaning of work	2	0.87	n/a
commitment to the workplace	2	0.60	n/a
predictability	2	0.71	n/a
rewards (recognition)	2	0.78	n/a
role clarity	2	0.75	n/a
role conflicts	3	n/a	0.81
quality of leadership	3	n/a	0.88
social support from supervisor	2	0.88	n/a
social support from colleagues	2	0.73	n/a
job insecurity	3	n/a	0.63
work-life imbalance	3	n/a	0.78
vertical trust	2	0.76	n/a
justice & respect	2	0.69	n/a

Analysis: reliability failure of the Influence scale

the "influence" scale is made up of two questions:

INX1: Do you have a large degree of influence concerning your work?

IN3: Can you influence the amount of work assigned to you?

the average scores for these questions were:

INX1: 44

IN3: 13

Quite obviously, there is a big difference between the influence over how work is done, as compared to how much work is assigned.



An Ultra-Brief Screening Scale for Anxiety and Depression: The PHQ-4

KURT KROENKE, M.D., ROBERT L. SPITZER, M.D.

JANET B.W. WILLIAMS, D.S.W., BERND LÖWE, M.D., PH.D.

<https://www.sciencedirect.com/science/article/pii/S0033318209708643>

Background: *The most common mental disorders in both outpatient settings and the general population are depression and anxiety, which frequently coexist. Both of these disorders are associated with considerable disability. Objective:* *When the disorders co-occur, the disability is even greater. Authors sought to test an ultra-brief screening tool for both. Method:* *Validated two-item ultra-brief screeners for depression and anxiety were combined to constitute the Patient Health Questionnaire for Depression and Anxiety (the PHQ-4). Data were analyzed from 2,149 patients drawn from 15 primary-care clinics in the United States. Results:* *Factor analysis confirmed two discrete factors (Depression and Anxiety) that explained 84% of the total variance. Increasing PHQ-4 scores were strongly associated with functional impairment, disability days, and healthcare use. Anxiety had a substantial effect on functional status that was independent of depression. Conclusion:* *The PHQ-4 is a valid ultra-brief tool for detecting both anxiety and depressive disorders.*

(Psychosomatics 2009; 50:613–621)



n=4050

2023 results:

GAD-2 = General Anxiety Disorder symptom screener

screened positive: 28.0%

PHQ-2 = depressive symptoms screener

screened positive: 25.0%

PHQ-4 = anxiety & depressive symptoms screener

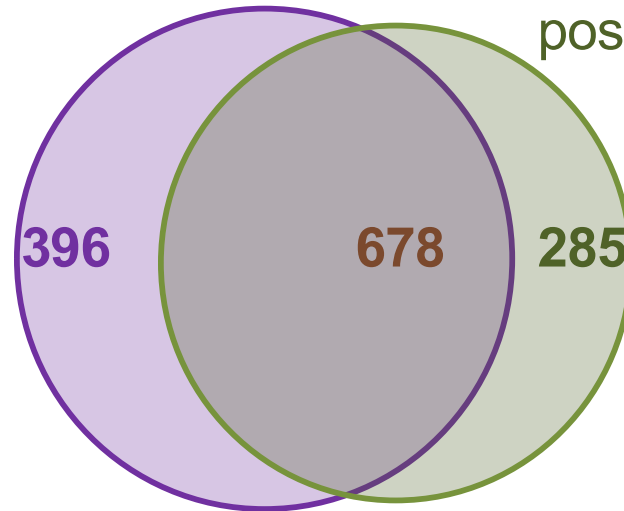
screened positive: 23.7%

positive GAD screen

1074

positive PHQ screen

963



positive screens for both GAD & PHQ

678



Scale Internal Consistency (Reliability):

scales		items	Spearman-Brown statistic	Cronbach's α
GAD-2		2	0.92	n/a
PHQ-2		2	0.81	n/a
PHQ-4		4	n/a	0.91

... can use these scales separately or together.



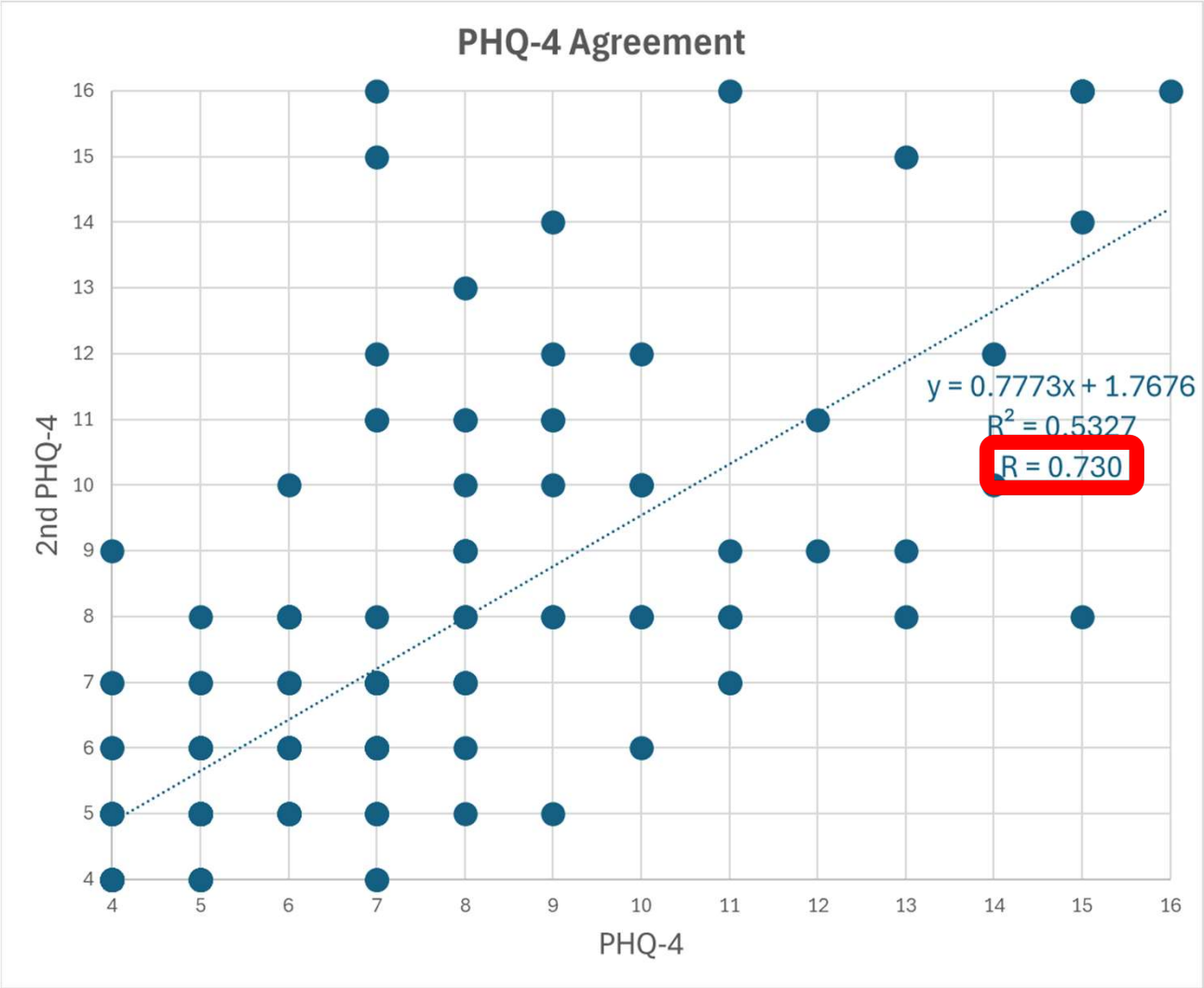
Test-Retest Reliability

- After a few weeks, ask some participants to do the survey again (making sure no significant change for the repeat test)
- Compare the two responses (test-retest)

Criteria:

- 1.0 : perfect reliability,
- ≥ 0.9 : excellent reliability,
- $\geq 0.8 < 0.9$: good reliability,
- $\geq 0.7 < 0.8$: acceptable reliability,
- $\geq 0.6 < 0.7$: questionable reliability,
- $\geq 0.5 < 0.6$: poor reliability,





n=145



Test-Retest Reliability – ICC(2,1)

Results

Intraclass Correlation Coefficient(ICC)

Model	Type	Unit	Subjects	Raters	ICC
twoway	consistency	single	145	2	0.728

Note. The analysis was performed by 'irr::icc' function.

Results

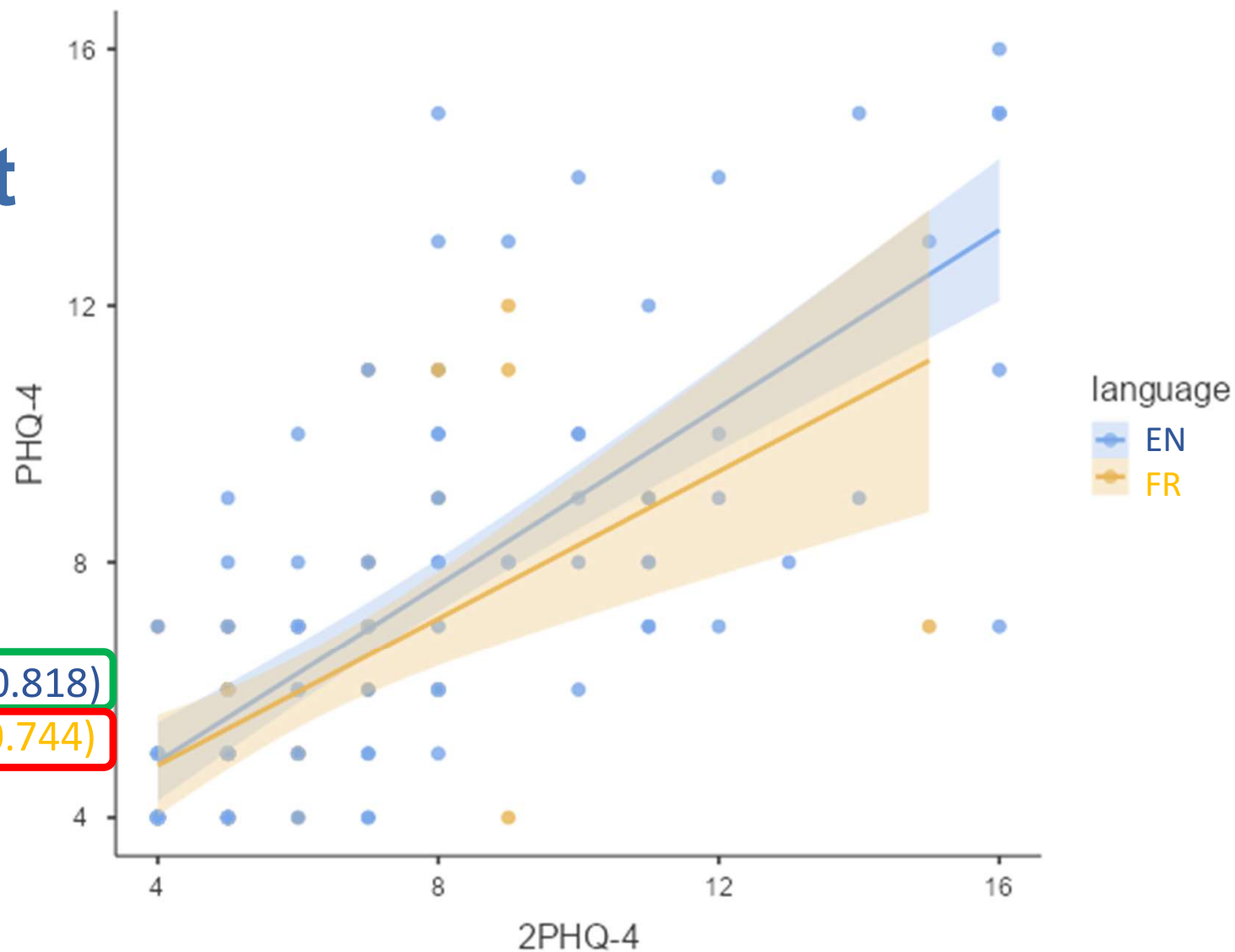
F test for ICC

ICC	F	df1	df2	p	95% CI	
					Lower	Upper
0.728	6.36	144	144	0.000	0.642	0.797

Note. H0: ICC = 0; H1: ICC > 0



Results: Scatterplot PHQ-4



EN ICC(2,1) = 0.742 (0.640-0.818)

FR ICC(2,1) = 0.574 (0.334-0.744)



Predictive, Convergent & Discriminant Validity

Psychosocial Risk Factors	Burnout	Cognitive	Self-rated Health	Job Satisfaction	Engagement
Quantitative demands	0.12	0.17			
Work pace	0.16				
Emotional demands	0.24		-0.05		
Influence at work					0.06
Possibilities for development (Skill discretion)					
Meaning of work				0.33	0.45
Predictability			0.08		0.22
Recognition				0.28	0.17
Role clarity					
Role conflicts		0.17		-0.11	
Quality of leadership					
Social -support from colleagues			0.10		
Social -support from supervisors					
Sense of community at work		-0.15		0.10	
<i>Insecurity over employment</i>	0.21	0.17	-0.14		
Insecurity over working conditions		0.12			
Vertical trust				0.13	
Organizational justice	-0.19		0.16		0.11

Discriminant analysis example:

EKOS 2019		factors	mgmt & 0 extra hrs	non-mgmt & 0 extra hrs	mgmt & 6+ extra hrs	non-mgmt & 6+ extra hrs
4008		n=	39	91	41	23
45	Demands at Work	quantitative demands	40	44	57	58
61		work pace	54	46	59	71
46		emotional demands	45	45	52	67

wage theft



English Language Psychosocial Surveys (free):

- Guarding Minds @ Work (Canada)
- StressAssess (COPSOQ – Canada)
- Management Standards Indicator Tool (UK & Ireland)
- People at Work (Australia)
- The Healthy Work Survey (US)

Which have published validation studies?






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OPEN

The Healthy Work Survey

A Standardized Questionnaire for the Assessment of Workplace Psychosocial Hazards and Work Organization in the United States

Marnie Dobson, PhD, Peter Schnall, MD, MPH, Pouran Faghri, MD, MS, and Paul Landsbergis, PhD, MPH

Objectives: Work-related psychosocial stressors have been recognized as occupational hazards and assessed in workplaces in many countries for decades. Identifying tools to measure work-related psychosocial hazards to increase awareness in the United States about the impact on employees' health and safety is critical (*J Occup Environ Med.* 2021;63:e245–e249). **Methods:** We describe the development and psychometric validation of an online tool, the Healthy Work Survey, utilizing items from the National Institute for Occupational Safety and Health Quality of Work Life questionnaire. **Results:** There are 55 items in the final core work section of the HWS. Factor analyses confirmed nine factors, and the subsequent multi-item scales had acceptable internal consistency. A user-friendly, online system and automated report compares individual's and organization's scores to distributions from a representative US working population (General Social Survey Quality of Work Life). **Discussion:** The HWS is a reliable, valid tool for organizations and individuals to assess psychosocial work hazards.

LEARNING OUTCOMES

- Occupational health practitioners, researchers, and other professionals interested in workplace surveillance for psychosocial hazard risk will be able to utilize the online Healthy Work Survey system after reading this article.
- Upon completion of reading this journal article, occupational health practitioners, researchers, and other professionals will be able to justify and explain why the psychosocial risk assessment tool is valid and helpful to employers and/or other organizations they work with.





People at Work:



People AT WORK

Home People at Work process Learning modules Psychological health and safety Resources FAQ About People at Work Contact us

People at Work

A free and validated Australian psychosocial risk assessment survey

<https://www.peopleatwork.gov.au/>

Helping to create psychologically healthy and safe workplaces

- Create your account** >
Start your People at Work journey by registering for a free account.
- People at Work process** >
Gain an understanding of the five step People at Work process.
- About People at Work** >
Learn about People at Work: the funding partners and research history.
- Resources** >
A hub of useful resources for your workplace and workers.
- Psychological health and safety** >
Find out about your workplace responsibilities, psychosocial hazards and building a business case.
- FAQ** >
Find answers to frequently asked questions about People at Work.

Evidence for the validity of the Australian People at Work survey

- “The tool is a combination of a number of different measures that were already developed to assess the presence of psychosocial hazards all of which had their own psychometric properties. They were then considered in line with how they performed in combination to assess psychosocial hazards together in the management of psychosocial risk in the Australian context. The benefit of **using measures that were already developed was that they had a long history of being validated across different contexts** and industries which is important in large scale use such as what we have seen with People at Work tool.” *(personal email communication with Katharine Smith, April 4/24)*
- In other words, they picked pre-existing scales and relied on other people’s validation studies



HSE (UK) online survey:



 <http://www.hse.gov.uk/stress/standards/notesindicatortool.htm>

Notes on HSE Management Standards Indicator Tool

The HSE Management Standards Indicator Tool should be used in conjunction with the HSE Management Standards Indicator Tool User Manual. The HSE Management Standards Indicator Tool is also available in a number of different languages on [HSE's Management Standards website](#).

If you plan to use the HSE Management Standards Indicator Tool as part of a customised 'pick and mix' approach:

There are a number of ways in which you may wish to incorporate some of the Management Standards survey tools into your own customised approach.

Some of these are listed below:

- **Incorporating HSE Management Standards Indicator Tool into your own survey:** You may wish to incorporate the HSE Management Standards Indicator Tool into your own survey. In this case, we would suggest that you keep the question wording and scoring system the same and the items in the same order and use the HSE Management Standards Analysis Tool to analyse your results. If you use other software to carry out a preliminary analysis of the data, please note that the scoring system is reversed for some items.
- **Using online survey tools:** You may wish to use the HSE Management Standards Indicator Tool in conjunction with a commercially available survey tool to conduct an online survey. Once you have completed the

Study published on the validity of the HSE Management Standards Indicator Tool

- Edwards et al. (2008) “Psychometric Analysis of the UK Health & Safety Executive’s Management Standards”

https://www.researchgate.net/publication/48989953_Psychometric_Analysis_of_the_UK_Health_Safety_Executive%27s_Management_Standards_Work-Related_Stress_Indicator_Tool

“Data collected from 39 UK organizations (N = 26,382) was used to perform a first-order Confirmatory Factor Analysis (CFA) on the original 35-item seven-factor measurement scale. The results showed an acceptable fit to the data for the instrument.”

“A second-order CFA was also performed to test if the Indicator Tool contains a higher order uni-dimensional measure of work-related stress. These findings also revealed an acceptable fit to the data, suggesting that it may be possible to derive a single measure of work-related stress.”



<https://www.workpositive.ie/>

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1. PREPARE 2. MEASURE 3. ACTION PLAN 4. REVIEW Q

HSE Management Indicator Tool + PHQ-4

Positively supporting employee engagement and
wellbeing

Work Positive^{CI} is a FREE State and stakeholder supported psychosocial risk management process that helps organisations identify ways to improve employee wellbeing.

Welcome to StressAssess

A survey of the psychosocial factors
in your workplace



Demographic



Physical



Psychosocial



Personal



Workplace



Health and
Well-being



Violence and
Bullying

Based on the Copenhagen Psychosocial Questionnaire (COPSOQ) and
customized to address concerns within the Canadian workplace.

Web-App: www.StressAssess.ca



Results of Reliability & Validation Studies

with the help of **Peter Smith** from the IWH:

- ✓ Face validity
- ✓ Content validity
- ✓ Test-retest reliability
- ✓ Internal consistency (Cronbach's α , ICC)
- ✓ Confirmatory factor analysis
- ✓ Discriminant and convergent validity (correlations)

... published February 2019



Dissecting the effect of workplace exposures on workers' rating of psychological health and safety

Avinash Ramkissoon MPH^{1,2}  | Peter Smith PhD, MPH^{1,2,3} | John Oudyk MSc, CIH, ROH⁴

¹Epidemiology Division, Dalla Lana School of Public Health, Toronto, Ontario

²Institute for Work & Health, Toronto, Ontario

³Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, Australia

⁴Occupational Health Clinics for Ontario Workers, Toronto, Ontario

Correspondence

Abstract

Objectives: To validate the factor structure of the Copenhagen Psychosocial Questionnaire (COPSOQ) in a North American population and dissect the associations between psychosocial factors and workplace psychological health and safety.

Methods: Confirmatory factor analysis and multivariate linear regression were used to determine the associations between COPSOQ dimensions and a global rating of workplace psychological health and safety. Models were stratified by sex, gender



Contents lists available at [ScienceDirect](#)

Safety and Health at Work

journal homepage: www.e-shaw.net

Original Article <https://www.sciencedirect.com/science/article/pii/S2093791118302725>

The Third Version of the Copenhagen Psychosocial Questionnaire

Hermann Burr^{1,*}, Hanne Berthelsen², Salvador Moncada³, Matthias Nübling⁴,
Emilie Dupret⁵, Yucel Demiral⁶, John Oudyk⁷, Tage S. Kristensen⁸, Clara Llorens^{3,9},
Albert Navarro^{9,10}, Hans-Joachim Lincke⁴, Christine Bocéréan^{5,11}, Ceyda Sahan⁶,
Peter Smith^{12,13,14}, Anne Pohrt¹⁵, on behalf of the international COPSOQ Network

¹ Division 3 Work and Health, Federal Institute of Occupational Safety and Health (BAuA), Berlin, Germany

² Center for Work Life and Evaluation Studies (CTA) and the Faculty of Odontology, Malmö University, Malmö, Sweden

³ Union Institute of Work, Environment and Health (ISTAS), Barcelona, Spain

⁴ Freiburg Research Centre for Occupational Sciences (FFAW), Freiburg, Germany

⁵ Preventis, Paris, France

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¹⁵ Institut für Medizinische Psychologie, Charité-Universitätsmedizin Berlin, Berlin, Germany



New for 2023:

Français

Sign Up | Login

GuardingMinds
@ WORK

About ▾ How to Use Resources FAQs

Assess and address psychological health and safety in your workplace

Measures:

G1: 13 CSA factors (54 items)

G2: 21 ISO Factors (60 items)

G3: inclusion indicator (16 items)

G4: stress & trauma indicator (20 items)

... all with only 65 questions (items)

Welcome to Guarding Minds at Work, a comprehensive resource to help you assess and address psychological health and safety in your workplace.

Any survey report is a snapshot in time of employee perceptions that organizations can use to identify both potential strengths and opportunities for improvement. The experience of COVID-19 is unprecedented, and the many changes to our circumstances at work and in society mean a survey done now is not comparable to past surveys.

New for 2023:

Guarding Minds at Work and all supporting resources are now more useful. In addition to tracking the psychosocial factors described in the National Standard of Canada on Psychological Health and Safety in the Workplace, the report will include a measurement of the psychosocial hazards described in the International Organization for Standardization (ISO) 45003:2021. Indicators of workplace inclusion, stress and trauma have also been added, yet employees will not need additional time to complete the survey and everything will remain free of charge. Learn more about the [2023 Guarding Minds update](#).

GUARDING MINDS AT WORK VALIDATION STUDY

Heather Stuart PhD, FRSC, C.M.
QUEEN'S UNIVERSITY
June 2020

“A different approach is to assume that **the GM@W survey is an index** where the structures and practices measured by the presence of each questionnaire item can be understood as creating (not reflecting) the culture of an organization.”

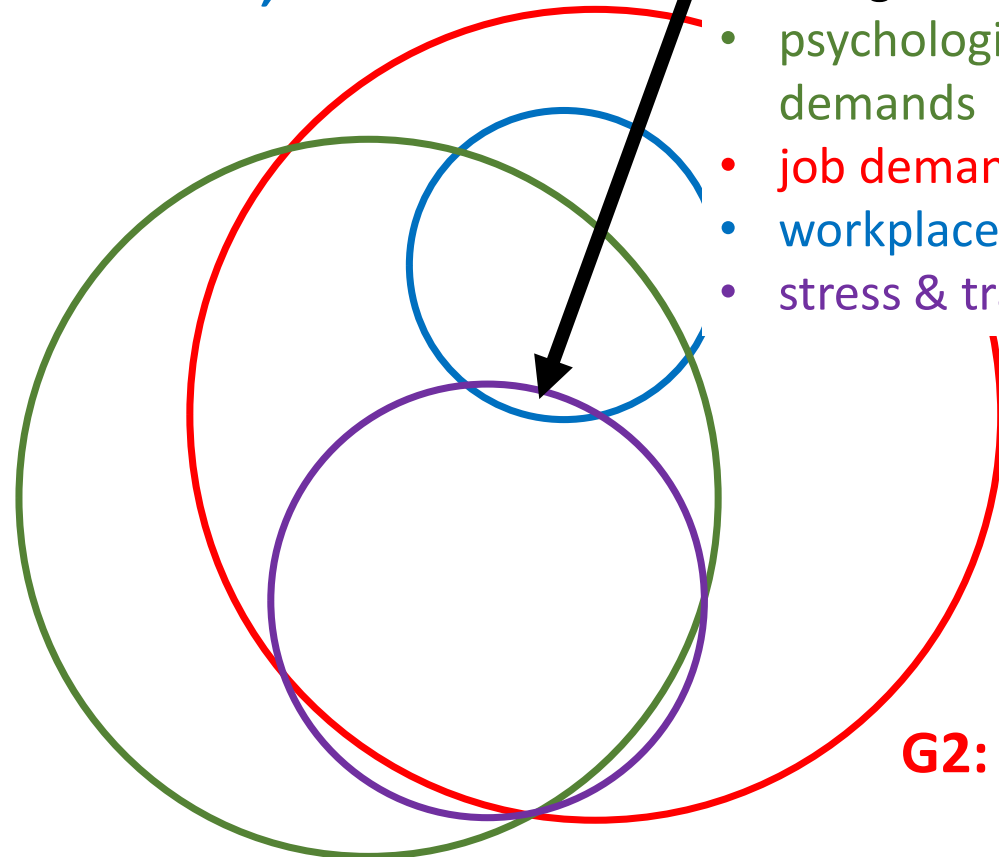
“**Two omnibus questions** were chosen to reflect aspects of a psychologically safe workplace culture. These variables were:
(a) **People at my workplace understand the importance of protecting employee psychological safety** and
(b) **My work does not threaten my psychological health.**”

“This analysis approached validation of the GM@W survey items from the perspective of an index, meaning that their presence in a workplace would create a psychologically safe culture. Statistical analysis supported the validity of the survey items and the domains. The result is **a redesigned survey and a new resource for employers that is aligned with both ISO45003 and the Canadian standard z1003.**”

G3: Inclusion Indicator, n=16

“I am able to do my job in a way that aligns with my values.”

- psychological competencies & demands
- job demands
- workplace inclusion index
- stress & trauma index



total number of questions: n=65

G1: GM@W 13 PF, n=54

G2: ISO 21 PF, n=60

G4: Stress & Trauma Indicator, n=20



Comparison of workload scales:

job security & precarious work

Guarding Minds @ Work Workload Management

- I feel my job is secure. **stress & trauma**
- I have sufficient time to complete my work. **working hrs & schedule**
- Deadlines are reasonable.
- The frequency of staff turnover is reasonable for our sector.
- The amount of work I am expected to do is reasonable for my position. **workload & pace**
- I can talk to my supervisor about the amount of work I have to do.
- I can do my job effectively with the tools and equipment provided.

workload management

COPSOQ (StressAssess) Demands at Work

- How often do you not have time to complete all your work tasks? **quantitative demands**
- Do you get behind with your work?
- Do you have to work very fast? **work pace**
- Do you work at a high pace throughout the day?
- Does your work put you in emotionally disturbing situations? **emotional demands**
- Do you have to deal with other people's personal problems as part of your work?
- Is your work emotionally demanding?



Individual questions (grouped by scale) results:

~~“Please note that individual Guarding Minds at Work survey items need to be considered in the context of the Psychosocial Factor to which they belong. Each item was carefully selected to reflect specific and complementary aspects of that particular factor. Individual questions are much less valid if taken out of context, thus increasing the likelihood of misinterpretation and inappropriate action.”~~

“These graphs combine and average the responses for all statements for each factor. When data is combined, we may lose important information. While this graph can be used as a general point of reference, it is highly recommended that you review each individual item within each factor. The individual items help you identify issues requiring action to improve psychological health and safety.”

***65 items; 13 CSA factors; 21 ISO factors; 2 indicators
= 101 outcomes to consider***



<https://www.worktango.com/resources/articles/what-is-survey-validity-and-why-does-it-matter>



ARTICLES

What is Survey Validity and Why Does it Matter?



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Employee Surveys, After All, Depend On It

In a list of the [toughest academic courses in the world](#), statistics ranks tenth. To say that the collection and interpretation of data is complex is an understatement for most. That's why survey validity expertise is a fundamental must in matters of employee feedback—assuming, of course, that you want solid, reliable data from which to make decisions.

Some liken statistics to epistemology; the study or investigation into the nature of knowledge, ways of asking how we can learn about the world, and how **certain we can be about that knowledge**. Plato and Descarte, among countless other philosophers pondered ways of knowing and learning about social reality. To a certain extent survey methodologists, statisticians, social and behavioral scientists, and the likes, walk in their stead today.



What do validation and significance mean in employee surveys?

Why does validation not always matter?

There are three reasons why asking whether a question has been validated is not sufficient or even helpful.

- 1. There's no easy or often practical way to pre-validate new questions.** This means you have a limited range of questions to work with because there is no validated form of the specific question that you want to ask. The most important is asking the most meaningful questions to your organization.
- 2. It's possible to validate a question in your own organization.** If we ask a question in our organization and find that it's predictive of something, that in itself is validation. People often forget that we're conducting live research in our organizations. So if you can predict when people are leaving or how positive someone is about various aspects of your workplace because of your research, there's your validation.
- 3. Just because a question is validated doesn't guarantee that asking it will give you anything meaningful for your organization.** The validation may have been done decades ago or for a context that is no longer relevant.

You don't need **a survey at all** to understand how your people are feeling

At the end of the day, what we're doing in employee feedback is studying real people to see how they feel about their working environment. If we discover something meaningful to the organization we work in it shouldn't matter if the methods are validated or the results are statistically significant. The most important question is always whether the question or results are meaningful to your organization.

<https://www.cultureamp.com/blog/employee-survey-validation-significance>

Summing it all up:

1. You don't need an evidence-based survey to assess psychosocial conditions (you don't need a survey at all, for that matter)
2. A survey for which there is evidence that it performs reliably and validly in a population similar to yours, allows you to know **what you are measuring** and that it is reasonable stable (**repeatable**)
3. A workplace devoted to making things better can use a **poor tool** and still make improvements
4. A workplace not interested in changing can use an **excellent tool** and not make any progress
5. **It's not the tool** (although a good tool makes it easier), **it's the commitment** to change that makes it work or not
6. Hopefully, this peak behind the curtain with respect to gathering evidence for survey validity and reliability may **help you choose**



Thank you!
... any questions/comments?

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