

ORIGINAL ARTICLE

Validating the Psychosocial Safety Climate Questionnaire – Integration of Findings from Cognitive Interviews in Germany and Sweden

Hanne Berthelsen*, Michael Ertel†, Martin Geisler* and Tuija Muhonen*

Work-related stress and stress-related ill health are major concerns in modern Western societies. In the European Union, the joint Occupational Safety and Health (OSH) framework obliges employers to ensure the health and safety of workers in *every* aspect related to work, including psychological safety and health. Against this background, the aim of the present study was to gain a deeper understanding of the cross-cultural validity of the Psychosocial Safety Climate (PSC) instrument as a measure for organizational and managerial commitment to employee psychological health. By integrating findings from cognitive interview studies conducted in Germany and in Sweden, we found participants considered the focus of PSC on managerial and organizational perspectives as an important contribution to workplace surveys. However, we were also able to identify some challenges (e.g., in relation to translation of key concepts, the intended shift of referent, and the use of the intermediate response options) as difficulties in identifying a homogeneous PSC within an organization was also observed to some extent. We can conclude that integrating findings from cognitive interviews conducted in two European countries expands the existing knowledge of the PSC measure. This is achieved by a deeper understanding of problems that might occur when transferring PSC to a different context. The overall findings of the present study corroborate the cross-cultural validity of transferring the PSC measure from an Australian to a European context, and we consider PSC to be a valid and useful framework for targeting psychosocial risks and organizational procedures in a European setting.

Keywords: Psychosocial safety climate; PSC; psychosocial risks; cognitive interview; cross-cultural validity

Introduction

Work-related stress is a serious problem in Europe as it leads to considerable consequences and costs for individuals, organizations, and societies (Eurofound, 2018; EU-OSHA, 2010, 2014). In 2010, almost 30% of the employees in the European labour force reported being exposed to psychosocial risks at work, and 80% of the European managers expressed concerns about stress at their workplaces (EU-OSHA, 2010, 2014). In particular, the joint European OSH framework obliges employers in all EU countries¹ ‘to ensure the safety and health of employees in every aspect related to the work’, including psychological health and safety (Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work, Section II, article 5). Considering the size of the problem, the managers’ concerns, and existing legislation, it is striking that less than one third of the workplaces in Europe

in the First European Survey of Enterprises on New and Emerging Risks (ESENER-1) reported having procedures for dealing with workplace stress (European Agency for Safety and Health at Work, 2010). Despite improvements, findings from the follow-up survey, ESENER-2, revealed implementation of good practice in organizations is still lowest in relation to psychosocial risk management compared to traditional safety and health risk management (EU-OSHA, 2018). This highlights the importance of senior management establishing an organizational climate that can prevent and manage work-related stress and the need for tools to assess progress at workplaces.

National policies for addressing psychosocial risks in Sweden and in Germany

Several member states of the European Union have intensified the Occupational Safety and Health (OSH) discourse about psychosocial risks and psychological health in recent years, and regulatory amendments of the national OSH framework have been introduced (Eurofound, 2018; EU-OSHA, 2018). For example, a majority of the member states acknowledge preventive actions are needed to handle the prevalence of burnout

* Malmö University, SE

† Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, DE

Corresponding author: Hanne Berthelsen (hanne.berthelsen@mau.se)

in the working population, but there is no consensus regarding the type of policy responses that are considered appropriate (Eurofound, 2018). A comparison between the two member states Sweden and Germany serves as an illustrative example of both similarities and differences at the national level.

In Sweden, the starting point for a revision of the OSH regulations was based on the reports of a steady increase of long-term stress-related sick leave. Furthermore, the previous OSH legal framework (i.e., Sweden's Work Environment Act) failed to explicitly stipulate how employers are obliged to work proactively to prevent psychosocial risks and stress-related illness among their employees. Thus, following in-depth discussions and active consultations with unions and employers' organizations, the new and specified regulations for the organizational and social work environment were adopted in 2015 (AFS 2015: 4, provisions on organizational and social work environment). The provisions specifically clarify the obligations of all employers to systematically evaluate and address problematic issues in the work environment—with a focus on workload, working hours, and victimization at work—in an active dialogue with both the employees and the social partners (Eurofound, 2018).

The need to address psychological health and risks in Germany was instigated by the results of surveys demonstrating that despite a great burden of mental disorders in terms of reduced productivity, sickness absence, and early retirement, employers' actual management of work-related stress was found to be low despite the legal obligation (Ertel, 2014). A consensus evolved among the Government and the social partners resulting in the Joint Declaration on Mental Health in the Workplace (Federal Ministry of Labour and Social Affairs, Confederation of German Employers' Associations & German Trade Union Confederation, 2013). By this declaration, the tripartite partners committed themselves to intensify their joint activities to promote risk assessments in general and to increase awareness of addressing psychosocial risks in organizations. In addition, the German Occupational Safety and Health Act was revised by a specification of employers' obligation to conduct risk assessments that include both physical and psychological health risks (Ertel, 2014).

In a comparison of policy and practice regarding health promotion and prevention at work across Europe, Verra and colleagues (2019) found Sweden and Germany are two of the countries in Europe that have the most advanced national OSH policies. However, when it comes to OSH practices, only Sweden is considered to be among the top five countries regarding workplace action plans for prevention of work-related stress (Verra et al., 2019). This difference might be due to the fact work-related stress prevention has been included in legislation for a longer period in Sweden than in Germany. It is also noteworthy that even among the top five countries only around half of workplaces (52.8% for Sweden) actually have action plans for stress prevention. This indicates the potential for a considerable improvement in the implementation of the legislation, especially as the mere existence of action plans as such does not necessarily lead to implementation

of actual improvements at workplaces. Against this background, it is evident an appropriate tool is needed for psychosocial risk surveillance at national and industry level and for risk assessment at workplaces.

Psychosocial safety climate in organizations

It is only recently that research on occupational health has begun to pay attention to upstream organizational factors (e.g., Bakker & Demerouti, 2014, 2017; Christensen, Saksvik & Karanika-Murray, 2017; Schaufeli & Taris, 2014). Upstream organizational factors can be understood as fundamental conditions generally outside the control of the individual worker and causally prior to working conditions, such as demands and resources (Dollard & Bakker, 2010; Bakker & Demerouti, 2018). In this perspective, the theoretical framework of the Psychosocial Safety Climate instrument (PSC) (Dollard & Bakker, 2010), has been put forward as a theoretical framework of practical relevance (Bakker & Demerouti, 2018). In essence, the PSC framework integrates and combines conceptions of work stress and safety climate (Dollard & Bakker, 2010). Specifically, the PSC framework is defined as a macro level (upstream) theory of work stress, referring to employees' shared perceptions of the extent that organizational policies and procedures ensure and prioritize the protection of their psychological health and safety (Law et al., 2011). PSC can be integrated with the Job Demands-Resources Model both as a causal trigger of the health erosion and work motivation paths and as a moderator between job demands and their effect on health and safety outcomes (Dollard & Bakker, 2010; Dollard, Dormann & Idris, 2019). Thereby, interventions directed towards PSC are intended to impact the causes behind factors, such as work pace, influence, and role clarity, rather than impacting these factors directly. This suggests the PSC framework is important to consider in relation to European OSH regulations and the need for better implementation of legislation at workplaces identified by Verra et al. (2019). PSC has been integrated in the Australian Workplace Barometer (Dollard et al., 2012) for monitoring of causal indicators of levels of workplace psychosocial risk factors. However, it still remains to be seen whether this applies in a European context as well.

A measure for PSC was first developed and introduced in Australia, where it also has been proven to be of practical relevance for policy makers and in relation to organizational interventions (Leka, Jain & Lerouge, 2017; Leka, Jain & Zwetsloot, 2010; Potter et al., 2017; Potter et al., 2019). The PSC comprises four theoretically based components: how employees perceive the senior management 1) engages, 2) prioritizes, 3) communicates, and 4) involves employees in psychosocial workplace safety issues (Dollard & Bakker, 2010). PSC has been found to be a useful indicator for examining how policies and procedures at the organizational level affect employees' health and well-being (Bakker & van Woerkom, 2018; Biron et al., 2018).

Since its development and introduction, a number of empirical studies have investigated the relevance and significance of PSC as an indicator of how psychosocial risks are addressed and subject to intervention in

organizations (Zadow et al., in press). Overall, the results have provided convincing support for PSC as an important indicator of OSH practices and working conditions, related to reduced levels of job demands, increased job resources, less effort-reward imbalance, and less bullying and harassment (Dollard, Dormann & Idris, 2019; Dollard et al., 2017). However, even though the need for further validation of the PSC framework was emphasized by the originators (Dollard & Bakker, 2010; Hall, Dollard & Coward, 2010), the vast majority of PSC studies to date have been conducted in the Asia Pacific area: Australia and Malaysia (Idris & Dollard, 2016).

In addition to Australia (Dollard & Bakker, 2010; Hall et al., 2010) and Malaysia (Idris, Dollard & Tuckey, 2015), the PSC measure has recently been translated and used in the Netherlands (Bronkhorst, 2015), Ghana (Ansah, Mintah & Ogah, 2018), France (Huyghebaert et al., 2018), Canada (Biron et al., 2018), and Taiwan (Pien, Cheng & Cheng, 2018). In general, the process of converting the PSC measure to a new context has merely included basic translation-back-translation procedures. To the best of our knowledge, only the process for the Chinese PSC version was reported to be based on a thorough validation study including detailed psychometric analyses. Previous research suggests operationalizations of work climate constructs can be especially challenging to interpret and reply to due to the way they are formulated using a shift of referent and due to complex organizational settings (Berthelsen et al., 2016). However, no other study has so far explored the cross-cultural validity of PSC by qualitative methods.

PSC has been demonstrated to capture essential aspects of OSH policies and procedures (Leka et al., 2017; Potter et al., 2017) and to have important implications for working conditions, employees' health, and engagement (Idris et al., 2012; Yulita, Dollard & Idris, 2017). However, it is necessary to explore the universal validity and transferability of the PSC concept as a useable—and novel—framework for understanding organizational policies and procedures to ensure psychosocial risks among employees in different cultural settings and OSH traditions.

Or as Hall, Dollard, and Coward stated it in 2010 (p. 377): 'Future research could assess whether dimensions are generic and universal and if the dimensions are valid and may be replicated across different occupational settings, industries and countries.'

Aim of the study

Stress-related ill health is a major concern in modern Western societies. In the European Union, the joint OSH framework obliges employers to ensure employees' psychosocial health and safety. The aim of the present study is to gain a deeper understanding of the cross-cultural validity of the PSC as a measure for organizational and managerial commitment to employees' psychological health and safety. This involves 1) identifying potential difficulties concerning translation and adaptation of the items and 2) exploring cross-cultural equivalence understood as whether the interpretations of items reflect the measurement objectives of the instrument with an acceptable variation in the different contexts (Willis, 2015b). Thus, we investigated the cross-cultural

validity of the PSC framework by examining the understanding and interpretation of the PSC measure in two countries regulated by the same European OSH Framework but with different national OSH traditions: Sweden and Germany.

Method

When a questionnaire is translated for use in a new context there is a need for a thorough cultural adaptation, rather than merely a verbal translation (Guillemin, Bombardier & Beaton, 1993). Cognitive interviewing is a method that can provide in-depth information regarding potential difficulties or deficiencies for the adaptation of a questionnaire to new cultural contexts (Willis, 2005, 2015a, b; Drennan 2003). The choice of Germany and Sweden was not driven by theory but was mainly a pragmatic choice as the two research groups happened to initialize parallel processes in relation to the PSC-12 at approximately the same time. However, we are convinced this is a proper basis for comparison, as Sweden and Germany are highly advanced countries in terms of OSH regulation and the current debates on psychosocial risks and psychological health and safety are quite similar in the two countries.

Translation processes of PSC in Sweden and Germany

In Sweden, the preliminary translation of PSC items was tested in a focus group interview with three first-line managers employed in elderly care organizations. The focus group participants corroborated the relevance of the PSC construct in the Swedish setting—both as a construct and as a measure of practical significance. However, the participants stated they found the phrasing of certain PSC items problematic and the use of different wordings to refer to the same key concept evoked ambiguity. In dialogue with Maureen Dollard (one of the originators of the PSC framework (Dollard & Bakker, 2010)) it was decided the adaptation process for the Swedish PSC version should use consistent wording of key concepts. Based on this consideration, a professional translator conducted a revised translation of the PSC items with suggestions for alternative wording of key concepts. This version was reviewed and discussed by a panel of researchers, followed by cognitive interviews (Berthelsen & Muhonen, 2017). The final Swedish version, which was established based on the results of this procedure, was then back-translated into English and the conceptual congruency with the original version was verified in collaboration with Maureen Dollard.

In Germany, an initial professional translation of the PSC items was conducted where specific attention was given to the adaptation of the wording to optimize the comprehensibility in the German setting. As the next step, the German translations of the PSC items were discussed and amended in dialogue with fellow researchers who have special expertise in safety climate research and questionnaire development. Next, pilot cognitive interviews were conducted with four participants with considerable experience from their respective organizations. Based on the insights from these initial interviews, a revised German PSC

measure was developed in dialogue with one of the originators of the PSC framework, Maureen Dollard, and another expert in the field, Christian Dormann. This exchange resulted in a revised version, which was used in the subsequent cognitive interview study (Ertel & Formazin, 2019).

The original Australian PSC-12, the adapted Swedish version, and the preliminary German test-version are presented in Appendix A.

Cognitive interview study

Participants

Both the Swedish and the German studies used a strategic selection of participants (Kvale, 1996) to attain variation in age, gender, level of education, occupation, tenure, sector, and size of the organization in which they operated. In both countries, recruitment and interviewing was carried out until saturation in the findings was obtained. In the Swedish study, 10 participants were enrolled through a network connected to the Centre for Work Life and Evaluation Studies (CTA). The Swedish interviews were conducted by a research assistant. In Germany, 25 participants were enlisted through Gesis, a large German infrastructure institute with proven expertise in conducting cognitive pre-tests of questionnaires (<https://www.gesis.org/en/institute/>). All steps in the German study were conducted in a close dialogue with the research team (Ertel & Formazin, 2019).

Materials and Procedure

Each participant was informed about the purpose of the study and that their participation was voluntary and would be de-identified. After this the participants signed a written informed consent form. Prior to the interview, the interviewer trained each participant in the technique of thinking aloud. At the beginning of each interview, the participant was administered a questionnaire with the 12 PSC items and instructed to provide their answers while thinking aloud. The interviews were semi-structured and based on interview guides that were essentially similar across the two countries.

Throughout the interviews, the interviewers used a combination of concurrent and retrospective probing questions (Drennan, 2003; Willis, 2015a). The probing questions mainly focused on participants' perceptions and interpretations, and involved questions that were general (e.g., What did you think about when answering this question?), specific (e.g., What comes to your mind when you think about the term 'senior management' in this item?), or more technical in nature (e.g., Why did you chose the intermediate category 'neither agree nor disagree?').

The interviewers made observations and took notes during the interviews, focusing on participants' behaviour, such as expressing hesitation in the interpretation of certain items or when choosing certain response options. When the participant had responded to all 12 items, the interviewer used retrospective probing question to get in-depth clarifications of how participants understand the key concepts (e.g., psychological health or senior management). Finally,

participants were given the opportunity to ask questions and provide additional comments. The interviews lasted from 30 to 60 minutes. All interviews were audio-recorded and transcribed verbatim. In the Swedish study, a corresponding number of potential items to be included in the third version of the Copenhagen Psychosocial Questionnaire (COPSOQ International Network, 2018) were included and tested in addition to the PSC items (Berthelsen & Muhonen, 2017).

Initial analyses and adaptations of wordings were done separately for the Swedish and for the German studies. The approach was a systematic directed content analysis (Hsieh & Shannon, 2005). The analyses focused on participants' understanding of key concepts and gaining a deeper insight into the cognitive processes leading the participants to their answers (Tourangeau & Rasinski, 1988). The results from these analyses (Berthelsen & Muhonen, 2017; Ertel & Formazin, 2019) were presented at a seminar with the two research groups in March 2018. A joint overview of the main findings from the studies was established and discussed and the structure for integration of our main findings from these two studies was formulated.

Findings

In the following sections, we present the findings by integrating the results from the Swedish and the German cognitive interview studies. We first address concerns with regard to the understanding and interpretation of the PSC items before attending to findings related to contextual perspectives.

Challenges regarding measurement

Understanding of key concepts

Translations of PSC key concepts proved to be quite challenging in both Sweden and Germany. Yet the nature of these challenges differed between the two countries, for instance, with regard to the term psychological health. In Swedish, 'psychological health' has no literal translation. However, the antonymous term psychological ill health, referring to mental illness, is frequently used. In Germany, 'psychological health' can be translated literally, but the term is mainly used by scientists and health professionals. Nevertheless, the verbatim translations were tested in both Sweden and Germany, resulting in somewhat divergent findings.

In the German study, a number of participants interpreted psychological health to have a negative connotation and to refer to work-related health problems due to excessive workload and stress:

What does it mean? Emotional exhaustion, or health consequences of stress such as high blood pressure and sleeping disorders – this is what I am thinking. However, the term is not that clear to me ... Psychological health is not yet an issue in my workplace ... A definition of this term is needed.

In contrast, Swedish participants tended to recognize the concept:

... it is interesting that it isn't psychological ill health as it usually is... and I think it's good that it is psychological health and not psychological ill health because it becomes ... well, in psychological health I include both psychological health and... being both positive and negative. Ill health, – then you focus only on the negative.

Psychological health ...eh ...Well, I don't think about diagnoses and so on ... rather simply an experience of... well, merely feeling well.

Further, both Swedish and German participants had some difficulties with the interpretation of the term senior management. The majority of the Swedish participants stated they interpreted senior management as referring to their immediate superior and/or the next managerial level in the organizational hierarchy (i.e., the highest managerial level that they were able to relate to). Correspondingly, German participants tended to interpret the term as referring to line managers but often expressed they were not sure as to which managerial level this term would actually refer in their respective organization.

Shift of referent

A number of PSC items are designed with the intention of activating a shift of referent from the individual to the group level, which is recommended to capture perceptions of the organizational climate (Van Mierlo, Vermunt & Rutte, 2009). An illustrative example of this is the item *Psychological well-being of staff is a priority for this organization*.

However, both Swedish and German participants were regularly inclined to refer to their personal view in their responses to these items. A shift of referent to the group (i.e., team or organizational) level was quite rare. In both the Swedish and the German item-adaptation processes, formulations referring to the participants' personal perspective were amended by the insertion of wordings that were supposed to guide participants to activate a group level perspective. For example, these amendments changed words such as I, my, or me to we, our, or us". Still, the finding of a tendency not to change one's perspective to a broader one than the personal was quite consistent among both Swedish and German participants. A Swedish participant stated:

The questions themselves are not difficult, but the questions are about employees, i.e. in the plural, – it's not about me, and it's difficult to answer how the organization is experienced by others... how do others see the organization? I can only answer how I perceive it and what I think, subsequently all questions become a bit difficult for me to answer.

Statements versus questions

The inclusion of a few COPSOQ III items in the Swedish study led to an unexpected, though important, finding. Several participants said they found items that were presented as statements (i.e., PSC items) more complicated

to respond to compared to items presented as questions (i.e., COPSOQ III items). Overall, participants were of the opinion statements called for an inner dialogue, which seemed to complicate answering the item. A Swedish participant expressed it like this:

I find it easier to respond to questions compared to statements. In order to respond to a statement I have to take a stand.

Redundant items

A consistent finding in Germany and Sweden was participants perceived a considerable overlap among the 12 PSC items. In Sweden, as many as 7 out of 10 participants expressed this concern, which is illustrated by the following reflection:

I find them [the items] ... maybe repetitive ... and it is actually difficult to distinguish one item from another. Well, it is about information, stress prevention; it is about communication and it is about what happens if problems arise.

Moreover, this issue was often noted by the participants at the end of the interviews when they were given the opportunity to provide their general comments. A typical statement, as here expressed by a Swedish participant, was

The questions as such were not hard to answer as such... it's just that I found them rather similar, which makes it hard to separate the one from the other. It is almost the same question; I think the difference is quite subtle. Is it even possible to distinguish them?

The cross-references between items that participants made implied both redundancy within the theoretical components of PSC (e.g., item 2 in relation to item 1 and item 6 in relation to item 4) and between the components (e.g., the component *priority* in relation to the components covering *communication* and *employee participation*).

Inclination to use the intermediate response alternative

Another persistent finding was participants who found it difficult to respond to a certain PSC item (e.g., due to lack of knowledge or uncertainty) were inclined to choose the intermediate response option (i.e., neither agree nor disagree).

Then I'll choose something here in between, neither agree nor disagree, – though, it may be wrong because I don't really have any idea about this ...

The quote comes from a Swedish participant; however, this observation was frequent in both Sweden and Germany. In the Swedish study an additional response option (I don't know) was tested in 7 of the interviews. However, 3 of these 7 participants still chose the intermediate

response option in relation to items they were unsure how to respond to. Furthermore, two participants stated they perceived the additional response option to be quite similar to the intermediate response option.

Cross-cultural contextual reflections

More than one organizational climate

In general, participants demonstrated a disposition to respond to the PSC items on the basis of their nearest and most immediate organizational context. However, in a number of interviews, participants also reflected about their organization having an inconsistent approach to psychosocial safety climate. This finding was evident in both Sweden and Germany, and the statements from the participants illustrated these inconsistencies could be both horizontal (i.e., across departments of the organization) and vertical (i.e., in relation to different line managers). Most frequently, participants expressed concerns related to vertical inconsistencies, such as an impression of different psychosocial safety climates at different organizational hierarchical levels. A German participant explained as follows:

It's difficult when it comes to senior management, there would be other answers if it was the management here ... which may say something about how this place is being managed ...

A number of participants questioned whether the items were able to capture the psychosocial safety climate of an organization. For example, a Swedish participant noted that he/she perceived a discrepancy between the formulation of the PSC items and the actual roles and accountabilities with respect to OSH (i.e., the attribution of responsibility for employee psychological health) within an organization. This perceived discrepancy can be understood as uncertainty on the part of the respondent regarding the attribution of responsibility for employee psychological health. A participant working in a large public sector organisation in Sweden said

I don't know if this is the best way to go about understanding stress management. I'm not sure that it is a senior management responsibility ... maybe to assure there is support available. I find it hard to imagine it as a duty of our senior manager to take a direct responsibility, well this is exactly the reason why we have 700 levels of managers between the employees and up ...

For obvious reasons, participants that were newly employed often expressed they found it difficult to respond to the PSC items. This was also the case for participants who had a temporary contract. A Swedish participant explained

Here I have to reply 'neither agree nor disagree'. It might have to do with the fact that I am a temporary substitute, well, then it feels like it is two organizations. First and foremost, it is the agency, of course,

and then it is the department where I work. So it is ... there must be some cooperation as well, I assume.

Organizational communication culture

In the German study, participants often emphasized that in order for an organization to have good communication on psychological health in particular, the organization is required to have an effective culture of communication in general. This notion was most strongly underlined by participants who perceived the overall communication within their organization to be insufficient. A quotation from a German participant illustrates this concern in relation to the first PSC item (i.e., senior management acts quickly to correct problems/issues that affect employees' psychological health):

I would say: I disagree, – because I have no idea about what kind of data is being collected or what kind of actions [on mental health] are being implemented within our organization. I would have to know what is going on in our organization in order to be able to reply to this statement ...

In relation to the item regarding communication about psychological safety issues, several of the German participants expressed reflections like this:

In our organization there is no good communication at all and even less on such delicate issues... The management only reacts to problems that have already occurred and which might have been prevented by better communication.

In fact, 12 out of the 25 German participants reported the communication concerning psychological health issues was poor in their organization. When probed and asked to elaborate on this reflection, 7 of these 12 German participants stated that in their organization there was no communication at all concerning psychological health.

In contrast, very few of the Swedish participants expressed concerns due to poor or absent communication on psychological health issues in their respective organization. Most of the Swedish participants provided reflections on how information regarding psychological health was communicated in their organization. For example, this information was conveyed through informal interactions at work, team meetings, employee-development conversations, posters and brochures in the staff room, or online policy documents.

Awareness of employers' responsibilities

In both countries, participants often tended to express an indirect awareness of the fact their organization did not match the legal requirements and obligations in relation to the psychological health and safety of the employees. For example, this is illustrated by a Swedish participant's reflection in relation to the item 'senior management acts quickly to correct problems/issues that affect employees' psychological health' (i.e., PSC item 1):

No, they don't. We have an OSH company which we are primarily referred to. We have to talk to a psychologist three times in order to find out if it is a structural problem or an individual problem. This may seem quite offensive to the individual – because if I have stated that I feel bad because of my working environment, it is as if they don't believe me. First, 'let's ensure nothing is wrong with YOU and THEN we will start to look at the working environment ...

Overall, the participants' statements demonstrated organizations often had a person-centred and/or a reactive approach to psychological health issues, rather than a proactive or preventive approach. This is exemplified by the reflections of a German participant in relation to the same item as above (i.e., PSC item 1):

Senior management ... quickly? ... It does not act in a preventive way, they WOULD only act if the rate of stressed or mentally overloaded employees was very high or if the rate of mentally sick people was very high. It is almost as if it is taken for granted that my professional group is overloaded ... There should be an assessment of what leads to stress at work ... but ... there is nothing done at all on this over here ...

Cross-cultural validity

Finally, as the quotations presented illustrate, participants were generally willing to reflect and tell about their experiences regarding psychological health, organizational priorities, communication, and participation of both managers and employees in stress management. Thereby, despite some challenges uncovered regarding measurement, the four theoretical components underlying the PSC concept appeared relevant to participants. They were aware of a discrepancy between the need for preventive action on psychological health by the organization and the predominance of reactive, inconsistent, or even negligent organizational behaviour patterns in this respect. It is our interpretation that our findings demonstrate the relevance of the PSC concept in the Swedish and German context and that the cultural equivalence supports the validity of transferring the PSC concept from the Australian to the European context.

Discussion

The aim of the present article was to investigate the cross-cultural validity of the Psychosocial Safety Climate instrument by integrating findings from cognitive interview studies conducted in Germany and in Sweden. The importance of the study is underlined by the need for a valid and reliable measure of psychosocial safety in relation to the OHS framework. The analysis revealed a number of similar issues directly related to the items. Key concepts (e.g., senior management or psychological health) proved to be difficult to translate and participants perceived items to be overlapping. The intended shift from individual to group perspective did not work optimally, and a tendency to choose the intermediate

response option was observed among respondents. Respondents employed in complex organizations with several hierarchical levels or those having a precarious employment referred to different organizational sub-climates thereby demonstrating a difficulty in identifying a homogeneous PSC within an organization. However, these findings, in addition to those of communication culture and awareness of employer responsibilities, also illustrated the theoretical measurement objectives intended by PSC (e.g., management commitment to stress prevention and participatory practices) were perceived to be meaningful in both cultural contexts. In general, participants considered the focus of PSC addressing managerial and organizational perspectives as an important contribution to ordinary workplace surveys.

PSC as a group construct

Organizational climate is a latent construct, and measuring it by aggregation of individual responses to a group measure requires that a substantial part of the variance in the climate can be explained by differences between groups rather than among individuals. To accomplish this, the items should be formulated in a way that supports a shift of referent from an individual perspective to a broader one (Van Mierlo et al., 2009). To ensure such a focus on the workgroup instead of the single worker, PSC items were reworded so that phrases we, our, or us were used instead of I, my, or me. However, the interview results from both Germany and Sweden showed the intended shift of referent did not work as well as desired, and this challenge was not solved by rewording items. This finding based on our qualitative study is somewhat in contrast to results from a number of quantitative survey studies that have found psychometric support for aggregating individual level responses to a meaningful group score for PSC (see e.g., Dollard & Bakker, 2010; Idris & Dollard, 2014; Law et al., 2011; Pien et al., 2018). However, even in those studies, the majority of variance can be attributed to the individual level, and previous research on workplace social capital items has also demonstrated the intended shift of referent can be a cognitively complicated task (Berthelsen et al., 2016).

The difficulties regarding the translation of key concepts and the existence of different organizational sub-climates within larger organizations may have added further to this complexity. Our findings indicate that only when employees are familiar with policies, procedures, and practices of their organization do they feel capable of providing a valid assessment of psychosocial safety climate in their organization. A related issue is that participants had difficulties in relating to actions of senior management and questioned whether specific items addressed the relevant managerial level. In addition, it was apparent that in many cases the participants perceived they did not possess the knowledge allowing them to respond to items regarding senior management actions and priorities in a meaningful way. In particular, this was evident when participants perceived a lack of communication in the organization, when they were not aware of employer responsibilities, or when they had short-term employment. In sum, a

combination of these issues and circumstances may have influenced the participants to refer PSC items in relation to their line managers and their department instead of senior management.

PSC is theorized to be a property of an organization mainly driven by senior management (Dollard & Bakker, 2010). However, as management at different organizational levels has a central role in enacting the PSC, it can also be analysed at group or team level (Dollard et al., 2012), or even—practised in a few cases—at the individual level as a measure of perceived psychological climate (Garrick et al., 2014; Geisler, Berthelsen & Muhonen, 2019). The findings of the current study indicate the measurement of PSC is most valid for assessing sub-climates at lower organizational levels in complex organizations or for small to medium-sized workplaces. Future research including psychometric analyses is needed to evaluate whether the Swedish and German PSC versions function in a similar way to the original Australian version regarding aggregation of individual level data to group level.

Length and format of the PSC instrument

Across the two studies we consistently found reactions from participants indicating a perceived redundancy of the 12 items. Generally, PSC is combined with other instruments in surveys to cover several areas in a complex field; therefore, the shortest possible reliable and valid measurement is desirable. The length of a questionnaire and perceived redundancy of items have an impact on response rates, which constitutes a major challenge for survey studies (Fan & Yan, 2010; Jaju & Crask, 1999; Phillips, Reddy & Durning, 2016). This leads to a relevant consideration about how many items are actually required for a valid measurement of a construct. Findings from confirmatory factor analyses support the construct validity of the theoretically based four-factor structure measured by the 12-item version of PSC (Hall et al., 2010; Pien et al., 2018). Despite the theoretical reasoning behind the PSC measure, it seems data most often are collapsed into one single composite PSC score (see e.g., Afsharian et al., 2018; Biron et al., 2018; Bronkhorst, 2015; Idris et al., 2015; Potter et al., 2017). In addition, a 4-item version comprising the theoretical dimensions has been introduced (Dollard & Bakker, 2010). PSC-4 has proved to be strongly associated with PSC-12 and to hold satisfactory psychometrics (Dollard & Bakker, 2010; Dollard et al., 2012). Studies that plan to analyse a single total score rather than the theoretically based sub-scale scores could therefore consider to employ the PSC-4 and thereby reduce the response burden.

Participants from Sweden reacted to the format of statements. The tradition in the Swedish context is to use questions rather than statements in surveys, as exemplified by the latest national work environment survey, which includes questions only (The Swedish Work Environment Authority, 2018). In correspondence with Maureen Dollard, who has developed the PSC measure, we decided to keep the original format to assure international comparability. However, this finding concerning the format design needs to be taken into consideration in future cross-cultural adaptation processes of instruments.

Use of the intermediate response option

Another consistent finding was many participants chose the intermediate response option (neither agree nor disagree) when unsure about their response. This finding corresponds to results from an earlier study regarding items on Workplace Social Capital, which also is a latent work climate construct (Berthelsen et al., 2016). Therefore, we tested an extra response option; however, that failed to remedy the problem: misunderstanding the choice of a response option affects the reliability and validity of the measurement. This problem can be minimized using a thorough adaptation process leading to relevant and clear formulations. Future psychometric analyses are needed to compare the psychometric properties of the Swedish and the German adapted translations with the original Australian version.

Cross-cultural contextual reflections

Comparing our study results, we found a remarkable difference in that German participants often mentioned in the cognitive interviews a lack of communication in their organization while Swedish participants frequently reported a variety of communication channels in relation to stress prevention and psychological health issues at work. This finding might reflect a difference in organizational communication maturity concerning PSC. In a similar way, the results from the European Survey of Enterprises on New and Emerging Risks (ESENER) reveal the level of psychosocial risk management is significantly higher in Sweden than in Germany (EU-OSHA, 2010, 2018).

Sweden has, in contrast to Germany, a longstanding tradition of systematic work-environment management that requires employers to document the work environment, as well as to take measures and to draw up action plans for improvements (Janetzke & Ertel, 2017). Particularly the latter requirement has no parallel in Germany's common OSH practice. These differences in OSH culture may explain the diverging findings from our two countries in some respects, and to corroborate these findings on a larger scale, it will be necessary to conduct quantitative analyses of national PSC levels in the two countries.

We believe integrating findings on PSC from the two sub-studies conducted in Sweden and Germany is the main contribution—without neglecting the problems involved. Triangulating findings from two European countries improves the reliability of our study. The results are strengthened by including participants with various backgrounds, even regarding nationality. Sweden and Germany are among those European countries with the most advanced OSH policies. Still we found cross-cultural variation in PSC between these two countries, though probably not as much as if we had studied more diverse countries with respect to OSH regulations and traditions.

In addition, the qualitative validation approach we have chosen enabled us to achieve a deeper insight into the issues related to the instrument per se and those related to the overall context. At the same time, the challenge in our approach has mainly been that we have worked with German and Swedish transcriptions but used English

as our common working language. We have put a lot of effort into attaining good internal validity for our results, particularly by extensive discussions, exchange, and comparisons of translations of text passages.

For future validation and development of the PSC instrument, it could be of high relevance to conduct a corresponding study in Australia where the instrument originated. This could give opportunities for identification of which findings of challenges and problems have to do with the translation and validation procedure and which are inherent in the instrument (Willis, 2015b). Our expectations would be that particular findings relating to challenges in terms of shift of referent, different sub-cultures in complex organisations, and inclination to use the middle response option in an unintended way would persist independent of the cultural setting. In addition, future qualitative PSC research could focus on culturally distinctive or sensitive facets of the PSC concept. One such issue is the cultural differences in employee expectations of employer responsibilities regarding the protection of their psychological health and organizational communication cultures.

Quantitative research is required to corroborate the usefulness of PSC as a multilevel upstream surveillance measure in the European context. In addition to basic psychometrics, we recommend future research to investigate whether the challenges uncovered by the interviews in the present study have psychometric consequences. Future research should also investigate how well the PSC-4 reflects the PSC-12 and the predictive validity of these two different lengths of the instrument in the European context. This investigation is important for establishing norm values, evaluating dimensionality, and measurement invariance across different occupational groups and industries and countries. Finally, we recommend future research to evaluate the appropriate level of aggregation and the nomological validity of the translated PSC instrument, for instance, a longitudinal multilevel workplace design that combines questionnaire data with organizational register data (e.g., on staff turnover, absence or productivity).

The earlier reporting of the national studies focused on presenting methodological details of the initial steps in the adaptation and validation process (Berthelsen & Muhonen, 2017; Ertel & Formazin, 2019). In the present study, we synthesize the main findings across the two studies and discuss them in a European OSH-perspective. This contributes to a deeper understanding of the PSC concept in general and the challenges of transferring the PSC instrument to a different context than where it was originally developed. In addition, our study demonstrates the relevance of cognitive interviewing for adaptation and evaluation of instruments for use in different cultural contexts than where it was first developed.

Conclusion

This is the first qualitative study conducted in two European countries on the validation of the PSC instrument, originally developed in Australia. The present study, which integrates results from Sweden and from

Germany, clearly demonstrates the importance of a thorough adaptation process for achieving cross-cultural validity when transferring an instrument from one cultural context to another. Furthermore, the interviews corroborated the relevance and importance of PSC for use in the European context. This adaptation process met some difficulties (e.g., the suboptimal shift of referent and the existence of sub-climates in complex organizations). We believe these challenges are typical of this kind of climate-related instruments as previous research has reported similar results (Berthelsen et al., 2016).

While we think the overall findings of the present study corroborate the cross-cultural validity of transferral of the PSC instrument from an Australian to a European context, we would also recommend continued validation research. All in all, we consider PSC to be a valid framework for targeting psychosocial risks and organizational procedures also in a European setting.

Note

¹ All EU countries had to transpose the joint European OSH framework into national law. Yet the national laws differ due to variations in national OSH traditions, infrastructures, regulatory practices, and so forth.

Additional File

The additional file for this article can be found as follows:

- **Appendix A.** The PSC-12 instrument. DOI: <https://doi.org/10.16993/sjwop.85.s1>

Ethics and Consent

When the participants were contacted, they received written information including the aim of the project, the interview procedure, legal rights in relation to voluntary participation, and contact persons for further questions, as well as a form for giving their consent to participation in the project. Before the interviews were conducted, written information was provided once more in addition to oral information and the opportunity to ask questions. Informants received a copy of the information including their signed consent to participate. The confidentiality of the participants was secured through creation of code lists and depersonalization of data material.

Funding Information

The Swedish part of the research was funded by the Swedish Research Council for Health, Working Life and Welfare (FORTE) as part of the research program Organisational and social safety climate in human service organisations – Developing proactive procedures and tools for research, practice and intervention (Dnr 2016-07220) and by AFA insurance as part of the project Establishment of national norm values for the organisational and social work environment at Swedish workplaces (Dnr 170262). The German part of the research was financed by the Federal Institute for Occupational Safety and Health (BAuA).

Competing Interests

The authors have no competing interests to declare.

References

- Afsharian, A. Z., Zadow, A., Dollard, M. F., Dormann, C., & Ziaian, T.** (2018). Should Psychosocial Safety Climate Be Extended To Include Climate Strength? *Journal of Occupational Health Psychology*, 23(4), 496–507. DOI: <https://doi.org/10.1037/ocp0000101>
- Ansah, E. W., Mintah, J. K., & Ogah, J. K.** (2018). Psychosocial Safety Climate Predicts Health and Safety Status of Ghanaian Fuel Attendants. *Universal Journal of Public Health*, 6(2), 63–72. DOI: <https://doi.org/10.13189/ujph.2018.060205>
- Bakker, A. B., & Demerouti, E.** (2014). Job Demands–Resources Theory. In C. L. Cooper (Ed.), *Wellbeing*. DOI: <https://doi.org/10.1002/9781118539415.wbwell019>
- Bakker, A. B., & Demerouti, E.** (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285. DOI: <https://doi.org/10.1037/ocp0000056>
- Bakker, A. B., & Demerouti, E.** (2018). Multiple levels in job demands-resources theory: Implications for employee well-being and performance. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of wellbeing*. Salt Lake City, UT: DEF Publishers. nobascholar.com
- Bakker, A. B., & van Woerkom, M.** (2018). Strengths Use in Organizations: A Positive Approach of Occupational Health. *Canadian Psychology*, 59(1). DOI: <https://doi.org/10.1037/cap0000120>
- Berthelsen, H., Hakanen, J., Kristensen T. S., Lönnblad, A., & Westerlund, H.** (2016). A Qualitative Study on the Content Validity of the Social Capital Scales in the Copenhagen Psychosocial Questionnaire (COPSOQ II). *Scandinavian Journal of Work and Organizational Psychology*, 1(1), 1–13. DOI: <https://doi.org/10.16993/sjwop.5>
- Berthelsen, H., & Muhonen, T.** (2017). *Psykosocialt säkerhetsklimat: ett sätt att mäta organisatoriskt och socialt säkerhetsklimat (Stressforskningsrapport nr 327)*. Sweden: Stressforskningsinstitutet, Stockholms universitet.
- Biron, C., Parent-Lamarche, A., Ivers, H., & Baril-Gingras, G.** (2018). Do as you say: The effects of psychosocial safety climate on managerial quality in an organizational health intervention. *International Journal of Workplace Health Management*, 11(4), 228–244. DOI: <https://doi.org/10.1108/IJWHM-01-2018-0009>
- Bronkhorst, B.** (2015). Behaving safely under pressure: The effects of job demands, resources, and safety climate on employee physical and psychosocial safety behavior. *Journal of Safety Research*, 55, 63–72. DOI: <https://doi.org/10.1016/j.jsr.2015.09.002>
- Christensen, M., Saksvik, P. Ø., & Karanika-Murray, M.** (Eds.) (2017). *The Positive Side of Occupational Health Psychology*. The Netherlands: Springer. DOI: <https://doi.org/10.1007/978-3-319-66781-2>
- COPSOQ International Network.** (2018). Retrieved 08, 31, 2018 from <https://www.copsoq-network.org/assets/Uploads/annex1-Dimensions-and-items-in-the-COPSOQ-III-questionnaire-060718.pdf>
- Dollard, M. F., Bailey, T. S., McLinton, S., Richards, P., McTernan, W., Taylor, A., & Bond, S.** (2012). *Australian Workplace Barometer: report on psychosocial safety climate and worker health in Australia*.
- Dollard, M. F., & Bakker, A. B.** (2010). Psychosocial safety climate as a precursor to conducive work environments, psychological health problems, and employee engagement. *Journal of Occupational and Organizational Psychology*, 83(3), 579–599. DOI: <https://doi.org/10.1348/096317909X470690>
- Dollard, M. F., Dorman, C., & Idris, M.** (Eds.) (2019). *Psychosocial Safety Climate: A New Work Stress Theory*. The Netherlands: Springer. DOI: <https://doi.org/10.1007/978-3-030-20319-1>
- Dollard, M. F., Dormann, C., Tuckey, M. R., & Escartáin, J.** (2017). Psychosocial safety climate (PSC) and enacted PSC for workplace bullying and psychological health problem reduction. *European Journal of Work and Organizational Psychology*, 26(6), 844–857. DOI: <https://doi.org/10.1080/1359432X.2017.1380626>
- Dollard, M. F., Opie, T., Lenthall, S., Wakerman, J., Knight, S., Dunn, S., & MacLeod, M.** (2012). Psychosocial safety climate as an antecedent of work characteristics and psychological strain: A multilevel model. *Work & Stress*, 26(4), 385–404. DOI: <https://doi.org/10.1080/02678373.2012.734154>
- Drennan, J.** (2003). Cognitive interviewing: Verbal data in the design and pretesting of questionnaires. *Journal of Advanced Nursing*, 42, 57–63. DOI: <https://doi.org/10.1046/j.1365-2648.2003.02579.x>
- Ertel, M.** (2014). Note on policy interventions on psychosocial risks in Germany. *Paper presented at the EU-OSHA Seminar on psychosocial risks in Europe*. Retrieved from Bilbao: <https://osha.europa.eu/de/tools-and-publications/seminars/eu-osha-seminar-on-psychosocial-risks-in-europe>
- Ertel, M., & Formazin, M.** (2019). An approach to the further development and application of the PSC tool by applying cognitive interviewing in Germany. In M. Dollard, C. Dorman, & M. Idris (Eds.), *Psychosocial Safety Climate: A New Work Stress Theory*. The Netherlands: Springer. DOI: https://doi.org/10.1007/978-3-030-20319-1_13
- EU-OSHA. European Agency for Safety and Health at Work.** (2010). European Survey of Enterprises on New and Emerging Risks. *Managing safety and health at work*. Retrieved from Bilbao: https://osha.europa.eu/en/tools-and-publications/publications/reports/esener1_osh_management/view
- EU-OSHA. European Agency for Safety and Health at Work.** (2014). Calculating the cost of work-related stress and psychosocial risks. Retrieved from Bilbao: https://osha.europa.eu/en/tools-and-publications/publications/literature_reviews/calculating-the-cost-of-work-related-stress-and-psychosocial-risks/view

- EU-OSHA. European Agency for Safety and Health at Work.** (2018). Management of occupational health and safety in European workplaces – evidence from ESENER-2. Retrieved from Bilbao: <https://osha.europa.eu/en/tools-and-publications/publications/management-occupational-health-and-safety-european-workplaces/view>
- Eurofound.** (2018). Burnout in the workplace: A review of data and policy responses in the EU. Retrieved from Luxembourg: eurofound.link/ef18047
- Fan, W., & Yan, Z.** (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior*, 26(2), 132–139. DOI: <https://doi.org/10.1016/j.chb.2009.10.015>
- Federal Ministry of Labour and Social Affairs, Confederation of German Employers' Associations, and German Trade Union Confederation.** (2013). Joint Declaration on Mental Health at the Workplace. Bonn: Federal Ministry of Labour and Social Affairs, Information, Publication and Editorial Office. Retrieved from: <https://www.bmas.de/EN/Services/Publications/a449e-joint-declaration.html>
- Garrick, A., Mak, A. S., Cathcart, S., Winwood, P. C., Bakker, A. B., & Lushington, K.** (2014). Psychosocial safety climate moderating the effects of daily job demands and recovery on fatigue and work engagement. *Journal of Occupational and Organizational Psychology*, 87(4), 694–714. DOI: <https://doi.org/10.1111/joop.12069>
- Geisler, M., Berthelsen, H., & Muhonen, T.** (2019). Retaining social workers – The role of quality of work and psychosocial safety climate for work engagement, job satisfaction, and organizational commitment. *Human Service Organizations: Management, Leadership & Governance*. Advance online publication. DOI: <https://doi.org/10.1080/2330131.2019.1569574>
- Guillemin, F., Bombardier, C., & Beaton, D.** (1993). Cross-cultural adaptation of health-related quality of life measures: Literature review and proposed guidelines. *Journal of Clinical Epidemiology*, 46(12), 1417–1432. DOI: [https://doi.org/10.1016/0895-4356\(93\)90142-N](https://doi.org/10.1016/0895-4356(93)90142-N)
- Hall, G. B., Dollard, M. F., & Coward, J.** (2010). Psychosocial safety climate: Development of the PSC-12. *International Journal of Stress Management*, 17(4), 353. DOI: <https://doi.org/10.1037/a0021320>
- Hsieh, H. F., & Shannon, S. E.** (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. DOI: <https://doi.org/10.1177/1049732305276687>
- Huyghebaert, T., Gillet, N., Fernet, C., Lahiani, F.-J., & Fouquereau, E.** (2018). Leveraging psychosocial safety climate to prevent ill-being: The mediating role of psychological need thwarting. *Journal of Vocational Behavior*, 107, 111–125. DOI: <https://doi.org/10.1016/j.jvb.2018.03.010>
- Idris, M. A., & Dollard, M. F.** (2014). A Multi-level Study of Psychosocial Safety Climate, Challenge and Hindrance Demands, Employee Exhaustion, Engagement and Physical Health. In *Psychosocial factors at work in the Asia Pacific* (pp. 127–143). Dordrecht: Springer. DOI: https://doi.org/10.1007/978-94-017-8975-2_6
- Idris, M. A., & Dollard, M. F.** (2016). Psychosocial Safety Climate: Past, Present, and Future Research. In *Psychosocial Factors at Work in the Asia Pacific* (pp. 89–134). Cham: Springer International Publishing. DOI: https://doi.org/10.1007/978-3-319-44400-0_6
- Idris, M. A., Dollard, M. F., Coward, J., & Dormann, C.** (2012). Psychosocial safety climate: Conceptual distinctiveness and effect on job demands and worker psychological health. *Safety Science*, 50(1), 19–28. DOI: <https://doi.org/10.1016/j.ssci.2011.06.005>
- Idris, M. A., Dollard, M. F., & Tuckey, M. R.** (2015). Psychosocial safety climate as a management tool for employee engagement and performance: A multilevel analysis. *International Journal of Stress Management*, 22(2), 183. DOI: <https://doi.org/10.1037/a0038986>
- Jaju, A., & Crask, M. R.** (1999). The perfect design: Optimization between reliability, validity, redundancy in scale items and response rates. *Paper presented at the American Marketing Association*, Chicago, USA.
- Janetzke, H., & Ertel, M.** (2017). *Psychosoziale Belastungen im Fokus: Neue Perspektiven der Gefährdungsbeurteilung im europäischen Vergleich*. Bundesanstalt für Arbeitsschutz und Arbeitsmedizin. Wiesbaden: Springer. Retrieved from https://www.baua.de/DE/Angebote/Publikationen/Berichte/F2339.pdf?__blob=publicationFile&v=5
- Kvale, S.** (1996). *InterViews: An Introduction to Qualitative Research Interviewing*. London: Sage Publications.
- Law, R., Dollard, M. F., Tuckey, M. R., & Dormann, C.** (2011). Psychosocial safety climate as a lead indicator of workplace bullying and harassment, job resources, psychological health and employee engagement. *Accident Analysis & Prevention*, 43(5), 1782–1793. DOI: <https://doi.org/10.1016/j.aap.2011.04.010>
- Leka, S., Jain, A., & Lerouge, L.** (2017). Work-Related Psychosocial Risks: Key Definitions and an Overview of the Policy Context in Europe. In: L. Lerouge (Ed.), *Psychosocial Risks in Labour and Social Security Law. Aligning Perspectives on Health, Safety and Well-Being*. Cham: Springer. DOI: https://doi.org/10.1007/978-3-319-63065-6_1
- Leka, S., Jain, A., Zwetsloot, G., & Cox, T.** (2010). Policy-level interventions and work-related psychosocial risk management in the European Union. *Work & Stress*, 24(3), 298–307. DOI: <https://doi.org/10.1080/02678373.2010.519918>
- Phillips, A. W., Reddy, S., & Durning, S. J.** (2016). Improving response rates and evaluating nonresponse bias in surveys: AMEE Guide No. 102.

- Medical teacher*, 38(3), 217–228. DOI: <https://doi.org/10.3109/0142159X.2015.1105945>
- Pien, L. C., Cheng, Y., & Cheng, W. J.** (2018). Psychosocial Safety Climate, Workplace Violence and Self-rated Health: a Multi-level Study among Hospital Nurses. *Journal of Nursing Management*, 1–8. DOI: <https://doi.org/10.1111/jonm.12715>
- Potter, R. E., Dollard, M. F., Owen, M. S., O’Keeffe, V., Bailey, T., & Leka, S.** (2017). Assessing a national work health and safety policy intervention using the psychosocial safety climate framework. *Safety Science*, 100, 91–102. DOI: <https://doi.org/10.1016/j.ssci.2017.05.011>
- Potter, R., O’Keeffe, V., Leka, S., Webber, M., & Dollard, M. F.** (2019). Analytical review of the Australian policy context for work-related psychological health and psychosocial risks. *Safety Science*, 111, 37–48. DOI: <https://doi.org/10.1016/j.ssci.2018.09.012>
- Schaufeli, W. B., & Taris, T. W.** (2014). A critical review of the Job Demands-Resources Model: Implications for improving work and health. In: *Bridging occupational, organizational and public health* (pp. 43–68). Dordrecht: Springer. DOI: https://doi.org/10.1007/978-94-007-5640-3_4
- The Swedish Work Environment Authority.** (2018). The Work Environment 2017 (Arbetsmiljön 2017). Retrieved from Stockholm: <https://www.av.se/arbetsmiljoarbete-och-inspektioner/arbetsmiljostatistik-officiell-arbetskadestatistik/arbetsmiljon-2017/>
- Tourangeau, R., & Rasinski, K. A.** (1988). Cognitive processes underlying context effects in attitude measurement. *Psychological Bulletin*, 103(3), 299. DOI: <https://doi.org/10.1037/0033-2909.103.3.299>
- Van Mierlo, H., Vermunt, J. K., & Rutte, C. G.** (2009). Composing group-level constructs from individual-level survey data. *Organizational Research Methods*, 12(2), 368–392. DOI: <https://doi.org/10.1177/1094428107309322>
- Verra, S. E., Benzerger, A., Jiao, B., & Ruggeri, K.** (2019). Health Promotion at Work: A Comparison of Policy and Practice Across Europe. *Safety and Health at Work*, 10(1), 21–29. DOI: <https://doi.org/10.1016/j.shaw.2018.07.003>
- Willis, G. B.** (2005). Cognitive Interviewing: A tool for improving Questionnaire Design. Thousand Oaks, California: Sage Publications, Inc. DOI: <https://doi.org/10.4135/9781412983655>
- Willis, G. B.** (2015a). *Analysis of the Cognitive Interview in Questionnaire Design*. Oxford, UK: Oxford University Press.
- Willis, G. B.** (2015b). The practice of cross-cultural cognitive interviewing. *Public Opinion Quarterly*, 79(S1), 359–395. DOI: <https://doi.org/10.1093/poq/nfu092>
- Yulita, Dollard, M. F., & Idris, M. A.** (2017). Climate congruence: How espoused psychosocial safety climate and enacted managerial support affect emotional exhaustion and work engagement. *Safety Science*, 96, 132–142. DOI: <https://doi.org/10.1016/j.ssci.2017.03.023>
- Zadow, A., Dollard, M. F., Parker, L., & Storey, L.** (In press). Psychosocial Safety Climate: A Review of the Evidence. In M. F. Dollard, C. Dormann, & M. A. Idris (Eds.), *Psychosocial Safety Climate: A New Work Stress Theory*. Dordrecht: Springer International.

How to cite this article: Berthelsen, H., Ertel, M., Geisler, M., and Muhonen, T. (2019). Validating the Psychosocial Safety Climate Questionnaire – Integration of Findings from Cognitive Interviews in Germany and Sweden. *Scandinavian Journal of Work and Organizational Psychology*, 4(1): 9, 1–12. DOI: <https://doi.org/10.16993/sjwop.85>

Submitted: 13 February 2019

Accepted: 30 September 2019

Published: 18 October 2019

Copyright: © 2019 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.



Scandinavian Journal of Work and Organizational Psychology is a peer-reviewed open access journal published by Stockholm University Press.

OPEN ACCESS