REVIEWING THE LABYRINTH OF PSYCHOLOGICAL RESILIENCE: ESTABLISHING CRITERIA FOR RESILIENCE-BUILDING PROGRAMS

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There is a growing interest in developing resilience-building programs in the work context. Yet the resilience literature provides no clear answer about what constitutes such a program. The aim of this article is to shed light on this question by presenting a set of criteria for resilience-building programs. We developed these criteria by systematically reviewing studies that synthesized the evidence about the definition, conceptualization, measurement, and enhancement of psychological resilience. A literature search in peer-review journals published between 2009 and 2018 using PsycINFO resulted in 286 hits. Twenty-one studies met our inclusion criteria. In addition, we consulted 3 handbooks on resilience. The result of our review is a checklist of 12 criteria for resilience-building programs to improve program consistency and quality. These criteria address the necessity to: specify which working population is in need of psychological resilience; cite which definition is being used; display and explain the process that people go through in order to adapt to adversity; describe how resilience will be measured and enhanced as a dynamic process, as well as say which type of positive adaptation—to which adversity, in which work context, and when—is involved; and make clear the starting point and purpose of the work. These criteria can be regarded as a valuable navigation tool in the complex field of resilience: Program developers can use them to optimize the content of resilience-building programs and to ensure that relevant information is reported; reviewers of resilience-building programs can use them to analyze, evaluate, and compare programs. Therefore, the checklist could become an indispensable tool for both researchers and practitioners to improve designing, describing, and reviewing resilience-building programs at work.

> **What's It Mean? Implications for Consulting Psychology**
> *Psychological resilience* should not be used interchangeably with *individual resilience*, because psychological resilience does not include physical or physiological resilience. Psychological resilience should be regarded as a dynamic process rather than a static concept. To improve on quality and consistency of resilience-building programs, consulting psychologists can use the checklist in Table 1. This checklist provides information about what is relevant to consider when designing, describing, or reviewing resilience-building programs.

Keywords: psychological resilience, program, review, criteria, work

When consulting psychologists are asked to provide a resilience-building program, they need to inquire about the "resilience *of what*?" (Martin-Breen & Anderies, 2011). In an organizational context, several answers are possible: the resilience of employees, teams, the company itself, or even the business sector it operates in. When it comes to employee resilience, a further distinction can be made between individual resilience and psychological resilience. Even though these terms are often used interchangeably (Cooper, Flint-Taylor, & Pearn, 2013), we consider them to be distinct. In this article, we focus on psychological resilience, which emphasizes resilience in *psychological* functioning: the interplay among behavior, cognition, and affect at a certain time in a certain context. In contrast to individual resilience, psychological resilience does not include biological types of resilience (Tusaie & Dyer, 2004), such as physical resilience (Whitson et al., 2016) and physiological resilience (Hicks & Miller, 2011). Hence, when we use the terms *resilience* or *resilience-building programs*, we mean, respectively, *psychological resilience* and *psychological–resilience-building programs*.

When we take a closer look at existing resilience-building programs evaluated in the work context, we find something negligent about them: Several are called "resilience" programs without providing a definition of resilience (e.g., Arnetz, Nevedal, Lumley, Backman, & Lublin, 2009; Carr et al., 2013; Chesak et al., 2015; Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013; Liossis, Shochet, Millear, & Biggs, 2009; Millear, Liossis, Shochet, Biggs, & Donald, 2008; Sood, Sharma, Schroeder, & Gorman, 2014) or without measuring resilience before or after the program (e.g., Abbott, Klein, Hamilton, & Rosenthal, 2009; Arnetz et al., 2009; Jennings et al., 2013; Liossis et al., 2009; Lynch et al., 2016; McCraty & Atkinson, 2012; Millear et al., 2008). This lack of conceptual precision and operationalization of resilience is detrimental to the quality of resilience-building programs at work (Vanhove, Herian, Perez, Harms, & Lester, 2016) and the research about them. It also raises the question of what constitutes a resilience-building program.

The scientific literature provides little information about what constitutes a resilience-building program (Calitz, 2018; Leppin et al., 2014; Vanhove et al., 2016). It has been defined as a program "that systematically seeks to enhance resilience in individuals or groups" (Leppin et al., 2014, p. 2) and as a program "that targets any of the factors that research has shown to improve resilience and healthy responses to stress, and provide a means for helping individuals to incorporate resilience factors into their daily lives" (Meredith et al., 2011, p. 8). These definitions imply that a resilience-building program should aim to enhance resilience and offer the means to accomplish this goal. Both aspects have been used as criteria to select programs for inclusion in systematic reviews of the effectiveness of resilience-building programs. However, each has been used in a different context: the aim to enhance resilience in a general adult context (Joyce et al., 2018; Leppin et al., 2014; Macedo et al., 2014); and the means to enhance resilience in a work context (Macedo et al., 2014; Robertson, Cooper, Sarkar, & Curran, 2015; Vanhove et al., 2016). Except for Leppin and colleagues (2014), none of these existing systematic reviews offers a definition of resilience-building programs. We may conclude that the scientific literature on resilience-building programs provides no agreed-upon definition or set of criteria to reliably determine whether a program constitutes a practical resilience-building effort and therefore deserves to be called a *resilience-*

Table 1

Checklist of Twelve Criteria That Need to Be Met in a Program for Building Psychological Resilience, Developed By Reviewing Terminology for Resilience (1–3), Definition and Conceptualization (4–9), Measurement (10–11), and Enhancement of Resilience (12)

Criteria	Examples/remarks
1. The topic of interest is **psychological resilience.**	Psychological resilience does not include biological types of resilience.
2. The working **population** for whom the program is intended is specified.	The population can be general (e.g., employees), multiple (e.g., police and military), specific (e.g., policemen), or a subpopulation (e.g., police recruits).
3. The work **context** in which the program is provided is specified.	E.g., health care, accountancy, law enforcement, education
4. Resilience is **defined**, incorporating the terms *dynamic process, adversity*, and *positive adaptation*.	An example definition is "a dynamic process representing positive adaptation to adversity"
5. The characteristics of the **adversity** that trigger the need for resilience are specified.	E.g., unemployment, change, bankruptcy; characteristics of adversity concern a single event or multiple events, the nature, intensity, duration, predictability, and frequency
6. An explanation is provided how **positive adaptation** is understood.	E.g., recovery, sustainability, growth
7. The **process** by which people adapt to adversity is displayed and explained.	Basic elements of a resilience process model are: preadversity adjustment, adversity, resilience mechanism, resources, outcomes.
8. The **timing** of the program is explained in relation to the adversity.	Before, during, or after the adversity
9. A general program aim and a specific program **aim** are provided. The general aim is to enhance resilience. The specific aim concerns which element(s) in the process of resilience is (are) targeted.	E.g., to enhance preadversity adjustment, to enhance resilience mechanisms, to enhance resources, to facilitate positive adaptation, to manage the amount and duration of adversity
10. An explanation is provided for how resilience is **measured**:	
a. **which element(s)** in the process of resilience is (are) measured, and	
b. at which **time points** so that change in resilience can be observed.	b. The time points can be determined in relation to the timescale of the program and of the adversity.
11. Specify whether there is a baseline level of a specific element of resilience at which people are **eligible** for the program.	
12. An explanation is provided for how the program **enhances** resilience:	
a. by which **approach**,	a. E.g., cognitive-behavioral, scenario- , mindfulness- , skills-based
b. which **mode of delivery**, and	b. E.g., individual, group, electronic
c. in which time period (**duration**)	
Intraprogram consistency	

Note. Intraprogram consistency = the definition, process model, and measurement of resilience are consistent with both the program target and approach. Words in bold in each criterion indicate the keyword(s) of that criterion.

building program (Vanhove et al., 2016). Without such criteria, any program could be advertised as a resilience-building program but it would remain unclear what to expect of it. Therefore, to advance research and practice on resilience-building programs in the work context, the aim of this article is to establish a set of criteria for programs that build psychological resilience.

We set out to formulate such criteria, beginning with the goal of developing a thorough understanding of the concept of psychological resilience. Therefore, we conducted an extensive literature review. We excluded resilience-related concepts such as hardiness (Kobasa, 1979; Maddi, 2002) and mental toughness (Clough, Earle, & Sewell, 2002; Jones, Hanton, & Connaughton, 2002). We reviewed how resilience has been defined, conceptualized, measured, and enhanced in the literature with a focus on psychological resilience in the work context. In this article, we explain how we identified the criteria for resilience-building programs with this literature review. The result of our review is a checklist of 12 criteria that resilience-building programs should provide information on when it comes to the content of such programs (see Table 1).

In our review, we were not searching for criteria to improve research on resilience-building programs as such. For that purpose, guidelines have been developed (Chmitorz et al., 2018; Robertson et al., 2015). Neither were we searching for criteria on how to build a theory- and evidence-based program or how to describe programs. For these purposes, handbooks and guidelines are available (see, e.g., Bartholomew Eldredge et al., 2016; Hoffmann et al., 2014). However, we did search for criteria to assess the resilience content of a program. In the fragmented field of psychological resilience, such criteria are a valuable tool for consulting psychologists as they summarize the relevant topics to address in a resilience-building program. In the design of programs, the criteria can be used to optimize the program content and to ensure that all relevant information is provided when it comes to resilience. In analyzing or evaluating programs, the criteria can be used to identify missing information and inconsistencies in the description of programs. The criteria for resilience-building programs thus serve the following purposes: to optimize, analyze, evaluate, and compare programs.

Method

To identify relevant studies, we conducted a literature search using the PsycINFO electronic database. We restricted our search to (a) literature reviews or meta-analyses (b) about psychological resilience that were (c) published between 2009 and 2018. We used two sets of search terms in title words: resilien* (which covers "resilience," "resiliency," and "resilient") in combination with "review" or "meta-analysis." Our search resulted in 286 hits. Studies were included if they met the following inclusion criteria: (a) The review focused on the definition, conceptualization, measurement, or enhancement of resilience; (b) involved a general adult or working population; (c) was written in the English language; and (d) had been published in peer-review journals. Studies were excluded if (a) they were not literature reviews, such as book reviews or single studies; (b) they focused on other types of resilience than psychological resilience, such as community, social, family, team, organizational, or disaster resilience; (c) their main focus was not on resilience but rather on resilience-related topics, such as trauma or well-being; (d) they focused on a nonadult population (e.g., children, youth) or a specific adult population (e.g., immigrants, students, patients, parents); (e) they focused on the way resilience was investigated rather than the way it was defined, conceptualized, measured, or enhanced; or (f) they addressed the relationship between resilience and other factors (e.g., personality, coping, shift work).

Our search found 286 studies. We analyzed these using Rayyan, a web application for systematic reviews (Ouzzani, Hammady, Fedorowicz, & Elmagarmid, 2016). Richta C. IJntema conducted title and abstract screening. In ambiguous cases, full-text papers were read ($n = 23$) and discussed with Yvonne D. Burger and Wilmar B. Schaufeli. Fourteen reviews met all inclusion criteria. We additionally included three reviews that were known to us but were not found by PsycINFO (Bryan, O'Shea, & MacIntyre, 2019; Fisher, Ragsdale, & Fisher, 2018; Joyce et al., 2018) and four reviews that we found through hand searching the reference lists of the included reviews (Britt, Shen, Sinclair, Grossman, & Klieger, 2016; Davydov, Stewart, Ritchie, & Chaudieu,

2010; Leppin et al., 2014; Windle, Bennett, & Noyes, 2011). Last, we included three handbooks on resilience to get a broader picture: a developmental perspective (Masten, 2014), an adult perspective (Reich, Zautra, & Hall, 2010), and an occupational perspective (Cooper et al., 2013). Table 2 gives an overview of the total of 21 included reviews and three handbooks. As can be seen in Table 2, 11 reviews mainly address the definition and conceptualization of resilience, four address the measurement of resilience, and six address the enhancement of resilience via resilience-building programs. In three sections, we present the results of our review and how these inform our checklist. Before doing so, we first devote a section to the terminology used for psychological resilience because we encountered several related terms in our literature search with implications for our checklist.

Terminology for Psychological Resilience

As we mentioned in our introduction, this article is restricted to psychological resilience. However, in our literature search, we discovered that it is not common practice to use the term *psychological resilience* to refer to this type of resilience. We encountered several related terms such as *individual resilience* (Cooper et al., 2013), *personal resilience* (Rice & Liu, 2016), *adult resilience* (Zautra, Hall, & Murray, 2010), *mental resilience* (Davydov et al., 2010), *cognitive resilience*, and *emotional resilience* (Kossek & Perrigo, 2016). These terms show that there is a lack of consistency in the terminology used for psychological resilience. It is not always clear why authors prefer one term over the other and whether these terms are distinct from each other or not. In order for there to be more consistency in programs that build psychological resilience, we recommend that the term *psychological resilience* be used to refer to the topic of interest. By restricting ourselves to this type of resilience, we established our first criterion for psychological resilience-building programs (see

Table 2
Overview of the Included Studies and Books

Topic	Authors
Definition and conceptualization of resilience	Aburn, Gott, and Hoare (2016)
	Ayed, Toner, and Priebe (2019)
	Britt, Shen, Sinclair, Grossman, and Klieger (2016)
	Bryan, O'Shea, and MacIntyre (2019)
	Davydov, Stewart, Ritchie, and Chaudieu (2010)
	Fisher, Ragsdale, and Fisher (2018)
	Fletcher and Sarkar (2013)
	Infurna and Luthar (2018)
	Kossek and Perrigino (2016)
	Van Breda (2018)
	Windle (2011)
Measurement of resilience	Cosco et al. (2017)
	Pangallo, Zibarras, Lewis, and Flaxman (2015)
	Smith-Osborne and Bolton (2013)
	Windle, Bennett, and Noyes (2011)
Enhancement of resilience	Chmitorz et al. (2018)
	Joyce et al. (2018)
	Leppin et al. (2014)
	Macedo et al. (2014)
	Robertson, Cooper, Sarkar, and Curran (2015)
	Vanhove et al. (2016)
Books on resilience	Cooper, Flint-Taylor, and Pearn (2013)
	Masten (2014)
	Reich, Zautra, and Hall (2010)

Table 1). As can be seen in Table 1, this criterion requires that the topic of interest be psychological resilience.

In addition to terms referring to the type of resilience, we also found terms referring to the work context in which resilience occurs and terms referring to the working population: for example, *workplace resilience* (McLarnon & Rothstein, 2013; Robertson et al., 2015), *occupational resilience* (Kossek & Perrigino, 2016), *career resilience* (Mishra & McDonald, 2017), *employee resilience* (Britt et al., 2016), *military resilience* (Britt, Sinclair, & McFadden, 2013), *physician resilience* (Fox et al., 2018), and *teacher resilience* (Beltman, Mansfield, & Price, 2011). Specifying the work context and working population separately from the type of resilience—for example, managers in need of psychological resilience in an educational setting—is important because research has shown that resilience differs per occupation (Infurna & Luthar, 2018; Kossek & Perrigino, 2016) and the working population could be a general working population (e.g., employees), multiple working populations (e.g., police and military), a specific working population (e.g., policemen), or a subgroup within a working population (e.g., police recruits; Leppin et al., 2014). In our checklist, we have included specifying the working population and the work context as, respectively, the second and third criteria that need to be met in a resilience-building program (see Table 1).

Definition and Conceptualization of Psychological Resilience

Eleven reviews synthesized the evidence about the definition of resilience (see Table 2). All reported in some way or other that resilience has been defined in various ways and that there is no agreed-upon definition of it (for an overview of definitions, see Aburn, Gott, & Hoare, 2016). Therefore, consulting psychologists cannot assume upfront that potential participants of resilience-building programs know what such programs are about. Providing a definition of the concept of interest is minimally required "to ensure that we talk or write in harmony with each other" (Van Breda, 2018, p. 2). Table 3 shows how resilience was defined in seven of the 11 reviews that presented their own definition. As can be seen from Table 3, these definitions have in common that they (a) regard resilience as a dynamic process, (b) include exposure to adversity as a first critical condition for resilience, and (c) consider the outcome of positive adaptation despite this adversity

Table 3
Definitions of Psychological Resilience

Author(s)	Definition of resilience
Bryan et al. (2019)	"A dynamic process encompassing the capacity to maintain regular functioning through diverse challenges or to rebound through the use of facilitative resources." (p. 8)
Fisher et al. (2018)	"The process by which individuals are able to positively adapt to substantial difficulties, adversity, or hardship." (p. 10)
Fletcher and Sarkar (2013)	"The role of mental processes and behavior in promoting personal assets and protecting an individual from the potential negative effect of stressors." (p. 16)
Infurna and Luthar (2018)	A trajectory of "stable, healthy psychological functioning." (p. 45)
Kossek and Perrigino (2016)	"The synthesis of an individual's traits, capacities or coping strategies, and processes for positively adapting to adversity and risk in ones' occupational and organizational contexts." (p. 764)
Van Breda (2018)	"The multilevel processes that systems engage in to obtain better-than-expected outcomes in the face or wake of adversity." (p. 4)
Windle (2011)	"The process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and "bouncing back" in the face of adversity. Across the life course, the experience of resilience will vary." (p. 152)

as a second critical condition for resilience. Fisher and colleagues (2018) proposed that "regardless of the specific wording, any definition of resilience should incorporate the fundamental themes of adversity, positive adaption, and a process-based conceptualisation" (p. 10). In our checklist, we therefore have included, as the fourth criterion for resilience-building programs, the requirement that a definition of resilience be provided that incorporates the terms *dynamic process*, *adversity*, and *positive adaptation* (see Table 1). This implies that resilience can be defined most basically as a dynamic process representing positive adaptation to adversity (Infurna & Luthar, 2018). Below we discuss these three terms in more detail.

Adversity

Adversity should be included in any definition of resilience because it is the antecedent needed to trigger the process of psychological resilience (Ayed, Toner, & Priebe, 2019; Fisher et al., 2018; Windle, 2011). The included reviews showed that adversity comes in many shapes and sizes. We found differences in both the terms used for adversity and definitions of adversity. With respect to the terms, we found related terms, such as *challenges* (Aburn et al., 2016; Bryan et al., 2019), *difficulties*, *hardship* (Fisher et al., 2018), *stressors* (Fletcher & Sarkar, 2013), *risk* (Ayed et al., 2019), *stress triggers* (Kossek & Perrigino, 2016), and *setbacks* (Cooper et al., 2013). With respect to the definitions of adversity, we found two opposing views: On the one hand, there was the idea that adversity could be any difficult stressful event or circumstance at work (e.g., work overload, job ambiguity; Bryan et al., 2019), which is similar to Seyles definition of a stressor (see Lazarus & Folkman, 1984); on the other hand, there was the idea that adversity concerns only significant adverse events at a high intensity or for a long duration (e.g., sexual harassment, abusive supervision; Britt et al., 2016). Regardless which view is taken, an event is referred to as "adverse" because it implies a negative outcome for the person (Ayed et al., 2019). Whether it actually becomes an adverse event depends on the person's judgment of the event. According to appraisal theory (Lazarus & Folkman, 1984), a situation may be judged as irrelevant, benign-positive, or stressful (i.e., harm/loss, threat, or challenge). Appraisal is therefore considered as a resilience mechanism (see the section below on "Dynamic Process").

Adverse events differ in their nature, intensity, duration, predictability, and frequency (Britt et al., 2016; Fisher et al., 2018). For example, adversity could be a single event (e.g., workplace violence) or multiple events (e.g., job demands; Fisher et al., 2018); challenging (time pressure, skill demands) or hindering (e.g., role ambiguity, role conflict; Infurna & Luthar, 2018); specific to job context (e.g., military combat), related to job context in general (e.g., bankruptcy), or not related to the job (e.g., divorce; Kossek & Perrigino, 2016); mild (e.g., daily hassles at work) or strong (e.g., serious job accident; Fletcher & Sarkar, 2013); time-bound/acute (e.g., job rejection) or ongoing/chronic (e.g., unemployment; Fisher et al., 2018); defined onset (e.g., job loss) or no defined onset (e.g., job constraints; Van Breda, 2018); sudden (e.g., robbery) or expected (e.g., organizational change; Reich et al., 2010); infrequent or frequent (e.g., uncivil treatment by customers; Fisher et al., 2018). Considering the heterogeneous nature of adversity, consulting psychologists need to specify as precisely as possible the characteristics of adversity in their resilience-building programs. In our checklist, we included this as the fifth criterion (see Table 1).

Positive Adaptation

Positive adaptation should be included in any definition of resilience because it is considered as the visible manifestation of the process of resilience (Fletcher & Sarkar, 2013; Van Breda, 2018; Windle, 2011). In the included reviews we found three different trajectories of positive adaptation being distinguished: recovery, sustainability, and posttraumatic growth (Ayed et al., 2019; Bryan et al., 2019; Chmitorz et al., 2018; Davydov et al., 2010; Fisher et al., 2018). Recovery implies that people are negatively affected by the adversity but are able to bounce back to preadversity levels of functioning more quickly than others who experienced the same adversity (Ayed et al., 2019; Britt et al., 2016; Zautra et al., 2010). Sustainability implies that people remain relatively unaffected in the face of adversity (Ayed et al., 2019; Bonanno, 2004; Zautra et al., 2010). Growth implies that

people are able to function better after being exposed to adversity than before and thus emphasizes the transformative effects of experiencing adversity (Ayed et al., 2019).

The included reviews provided no clear answer about which trajectory of positive adaptation constitutes resilience. Some argued that it is dependent on the severity of adversity (Fisher et al., 2018; Infurna & Luthar, 2018; Van Breda, 2018; Windle, 2011): Recovery is more likely to occur in the face of acute, significant stressors (also known as *emergent resilience*) and sustainability in the face of chronic, daily stressors (also known as *minimal-impact resilience*; Bonanno & Diminich, 2013). Others argued that all three trajectories could be considered resilience trajectories (Ayed et al., 2019; Britt et al., 2016). Another area of debate is which indicators represent positive adaptation (Fletcher & Sarkar, 2013): improvement or sustainment of desirable outcomes (e.g., job performance, life satisfaction, well-being) or reduction of undesirable outcomes (e.g., stress-related symptoms, burnout; Britt et al., 2016; Chmitorz et al., 2018; Fisher et al., 2018; Infurna & Luthar, 2018). Because positive adaptation can be understood in different ways, consulting psychologists need to explain how they understand it in their resilience-building programs (see Criterion 6 in Table 1).

Dynamic Process

The term *dynamic process* in a definition of resilience indicates that resilience unfolds over time in the context of specific person-environment interactions (Britt et al., 2016; Fisher et al., 2018; Kossek & Perrigino, 2016; Masten, 2014). It also indicates that resilience should no longer be considered a static concept. This applies to all three different static conceptualizations that have been distinguished in the past (Chmitorz et al., 2018; Fisher et al., 2018): resilience as (a) an independent or extraordinary trait (also called *invulnerability* or *invincibility*; Masten, 2014; Van Breda, 2018); (b) an outcome, which represents some type of positive adaptation (see section above on "Positive Adaptation"); and (c) a resource, which represents a constellation of personal or environmental factors that protect people against harm (protective factors), promote well-being (promotive factors), or enable people to adapt to the circumstances they encounter (adaptive factors; Davydov et al., 2010; Fletcher & Sarkar, 2013; Masten, 2014). Resilience conceptualized as a trait is no longer valid, because traits are—by definition—relatively stable across time and therefore at odds with resilience-building programs focusing on change (Bryan et al., 2019; Chmitorz et al., 2018). Resilience conceptualized as an outcome is no longer valid as it has little discriminative validity: It does not include the critical condition of adversity and is therefore quite similar to other concepts, such as adjustment and recovery (Masten, 2014; Van Breda, 2018). The same holds for resilience conceptualized as a resource, which is quite similar to factors that are associated with good health and development in general, such as self-efficacy and social support (Fisher et al., 2018; Masten, 2014). Because of these limitations, resilience should no longer be regarded as a static concept but rather as a dynamic process.

An advantage of understanding resilience as a dynamic process is that earlier conceptualizations of resilience as a trait, an outcome, and a resource can be incorporated into a process model (Bonanno, Romero, & Klein, 2015; Kossek & Perrigino, 2016; Van Breda, 2018). Process models of psychological resilience consist of several elements that are temporally related (Bonanno et al., 2015; Britt et al., 2016; Fisher et al., 2018). In the included studies we found five examples of dynamic-process models developed for the work context: the general conceptual model of resiliency (McLarnon & Rothstein, 2013), the framework for understanding employees' resilience to workplace stressors (Cooper et al., 2013), the integrative model of resilience for employees (Britt et al., 2016), the integrated occupational resilience framework (Kossek & Perrigino, 2016), and resilience in a temporal context (Fisher et al., 2018). These models are fairly new and have not been compared before.

By comparing the aforementioned process models of resilience, we derived five elements that should be considered as crucial elements in any process model of psychological resilience. These elements are (a) a baseline or preadversity adjustment as the necessary reference point for interpreting the outcomes of the process of resilience; (b) adversity as the necessary condition to trigger the process of resilience; (c) resilience mechanisms as the core process (mediating variables) of resilience, which include the specific cognitive, behavioral, and emotional reactions to adapt to

adversity—for example, appraisal of adversity, coping with adversity, and seeking help from others (Britt et al., 2016; for an overview of resilience mechanisms, see Fisher et al., 2018); (d) personal and environmental resilience resources as the conditions that influence the relationships among adversity, resilience mechanisms, and resilience outcomes (moderating variables; for an overview of resilience resources, see, e.g., Bryan et al., 2019; Fisher et al., 2018); and (e) positive resilience outcomes as the visible manifestation of the process of resilience. Together, preadversity adjustment, adversity, resilience mechanisms, resilience resources, and resilience outcomes form a basic framework of the dynamic process of psychological resilience.

A process-based conceptualization of resilience has several implications for resilience-building programs. Because there is not one best process model for resilience (yet), the first implication is that the process model of choice should be displayed and explained, including each element and the relationships among elements. In our checklist we have included this as the seventh criterion (see Table 1). The second implication is that the timing of the program should be specified: Is the program planned before (proactive), during, or after (reactive) the adversity (Chmitorz et al., 2018; Fisher et al., 2018)? In our checklist we have included this as the eighth criterion (see Table 1). The third implication is that the general program aim of enhancing resilience needs to be specified, namely which element(s) in the process of resilience is (are) targeted to achieve maximum effect. In our checklist we have included this as the ninth criterion (see Table 1). Most obvious would be to enhance preadversity adjustment before adversity, to enhance resilience mechanisms or resilience resources during adversity, and to facilitate positive adaptation after adversity. Because adversity is a necessary condition for resilience, removing adversity should never be the target of a resilience program. At most, managing the amount and duration of adversity could be an option before and during adversity exposure. Whatever target is chosen, it must be changeable because programs are intended to achieve the set target (Fisher et al., 2018).

Measurement of Psychological Resilience

Four reviews synthesized the evidence on how resilience has been measured (see Table 2). Because we established that resilience should be considered as a dynamic process, we searched specifically for measures that operationalized resilience as such. We found only one measure: the Multidimensional Trauma Recovery and Resiliency instrument (Liang, Tummala-Narra, Bradley, & Harvey, 2007). However, this measure may not be applicable to the work context because it is designed for those dealing with extensive abuse histories. In a review of resilience-building programs (Robertson et al., 2015), we found one process-based measure specifically designed for the work context: the Workplace Resilience Inventory (WRI; 60 items). This scale is based on the general conceptual model of resiliency (McLarnon & Rothstein, 2013) and measures the following variables in this model: initial responses; affective, behavioral, and cognitive personal characteristics; opportunities; supports and resources; and affective, behavioral, and cognitive self-regulatory processes. A limitation of the WRI is that is does not measure characteristics of adversity and positive adaptation. This implies that instruments that measure all five aforementioned elements in the process of psychological resilience are not readily available. As most existing scales are not intended to measure the dynamic nature of resilience, measuring resilience may pose a challenge for consulting psychologists. However, in any so-called resilience-*building* program, it is necessary to measure resilience to determine whether the program is successful in enhancing resilience. In our checklist we have included this as the tenth criterion that needs to be met (see Table 1).

To simplify matters, consulting psychologists do not necessarily need an instrument covering all elements in the process of psychological resilience. Resilience-building programs probably just target one or two elements, for example enhancing resilience mechanisms or resources and positive adaptation. To measure these elements, separate existing validated scales can be used that are relevant in the context (Infurna & Luthar, 2018; Smith-Osborne & Bolton, 2013; Van Breda, 2018). Not every element in the process of resilience can always be measured. For example, it is not possible to collect data on a person's preadversity adjustment in case of chronic adversity. However,

it is important to explain which elements in the process model are assessed using which measures (see 10a in Table 1).

To measure resilience resources, sufficient scales are available. In the reviews of resilience measures (see Table 2), we found that the majority of the scales measure such resources either with an exclusive focus on personal resources or with a focus on both personal and environmental resources. However, they all seem to measure different resources (for an in-depth discussion, see Pangallo, Zibarras, Lewis, & Flaxman, 2015). Most used is the Connor-Davidson Resilience Scale, either the 25-item version (CD-RISC25; Connor & Davidson, 2003) or the 10-item version (Campbell-Sills & Stein, 2007). The CD-RISC25 measures personal competence, trust in one's instincts, positive acceptance of change, control, and spiritual influences. It has demonstrated acceptable psychometric properties (Pangallo et al., 2015). An example item is, "I am able to adapt to change." Another scale with acceptable psychometric properties is the Resilience Scale for Adults (33 items; Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005), which measures perception of self, perception of future, structured style, social competence, family cohesion, and social resources. A scale developed for the work context is the Resilience at Work Scale (20 items; Winwood, Colon, & McEwen, 2013), which measures the resources of living authentically, finding one's calling, maintaining perspective, managing stress, interacting cooperatively, staying healthy, and building networks. An example item is, "I have a strong and reliable network of supportive colleagues at work." An explanation why the nature and number of resources differ in these resilience scales is the lack of agreement about which resources represent resilience best (Pangallo et al., 2015), in which context, and for which adversity (Britt et al., 2016).

In the reviews of resilience measurement (see Table 2), we found less information on how to measure other elements in the process of resilience than resources. With respect to resilience mechanisms, these reviews did not seem to make a clear distinction between mechanisms and resources, which makes it all the more important to clarify how the process of resilience is perceived in a resilience-building program (see Criterion 7 in Table 1). To measure positive adaptation, two scales were described: the Hardy-Gill Resilience Scale (six items, e.g., "Has this event made a permanent change in how you feel about your life?"; Hardy, Concato, & Gill, 2004) and the Brief Resilience Scale (six items; e.g., "I tend to bounce back quickly after hard times"; Smith et al., 2008). However, a limitation of these measures is that they are based on self-report and thus only assess a subjective sense of resilience, not the demonstration of resilience (Britt et al., 2016). As the visible manifestation of resilience, positive adaptation is preferably measured more objectively using observer ratings (e.g., ratings by a colleague or a manager), objective data (e.g., absenteeism or productivity), or other alternatives for self-report (e.g., Situational Judgment Test; Cosco et al., 2017; Pangallo et al., 2015). If positive adaptation is measured, it is recommended to measure the amount of adversity as well because research has shown that the amount of adversity may have an impact on adaptation: No adversity or a lot of adversity has a negative impact on well-being, but some adversity seems to be beneficial for well-being (curvilinear relationship; Seery, 2011).

In addition to explaining which elements are measured, two other topics need to be addressed when measuring resilience in a resilience-building program. First, it is important to specify the time points of measurement in order to warrant that change in resilience can be observed (see 10b in Table 1). To observe and measure change, the timescale of the process of resilience and the timescale of the adversity need to be taken into account (Britt et al., 2016; Fisher et al., 2018). Second, it is important to explain whether a program is targeted or universal (Vanhove et al., 2016). The former targets specific populations believed to experience a lack of resilience, and the latter targets an entire working population regardless of individual differences. We translated this into the eleventh criterion called *eligibility* (see Table 1). As can be seen in Table 1, this criterion requires that resilience-building programs report whether there is a baseline level of a specific element in the process of resilience at which people are eligible for the program.

Enhancement of Psychological Resilience

Six reviews synthesized the evidence for resilience-building programs in a general or a working adult population (see Table 2). Our main finding is that these reviews were unable to establish how to effectively enhance resilience in adults. On the one hand, this is because of a lack of uniformity in the approaches used to enhance resilience: for example, a cognitive–behavioral approach (e.g., Abbott et al., 2009), a mindfulness-based approach (e.g., Jennings et al., 2013), a skills-based approach (e.g., Sherlock-Storey, Moss, & Timson, 2013), acceptance and commitment therapy (e.g., Burton, Pakenham, & Brown, 2010), attention and interpretation therapy (e.g., Sood, Prasad, Schroeder, & Varkey, 2011), a scenario-based approach (e.g., McCraty & Atkinson, 2012), and a mixed approach (e.g., Millear et al., 2008). On the other hand, this is because of a lack of uniformity in the duration of programs, the mode of delivery (e.g., group-based, individual-based, or electronic), and the theoretical basis of programs (Joyce et al., 2018; Leppin et al., 2014; Robertson et al., 2015). Therefore, it remains unclear how to enhance resilience most effectively.

Even though existing systematic reviews have been unable to establish how to effectively enhance resilience, a resilience-building program must provide the means to enhance resilience. In our checklist we have included this as the twelfth criterion that needs to be met (see Table 1). In explaining how a program enhances resilience, we need to address three topics: (a) the program approach itself, by which resilience-building is accomplished (see 12a in Table 1); (b) the mode of delivery, as there are indications that an individual approach may be more effective than a group-based approach (Vanhove et al., 2016; see 12b in Table 1); and (c) the time period of the program, in order to ensure that change in resilience can be observed (Fisher et al., 2018; see 12c in Table 1).

A recurring problem in research on the effectiveness of resilience-building programs is inconsistency in program descriptions (Robertson et al., 2015). Therefore, consulting psychologists need to make sure that the definition, process model, and measurement of psychological resilience are consistent and aligned with both the target of the program and the program approach in order to ensure the content validity of a program (Leppin et al., 2014; Robertson et al., 2015). In our checklist, we therefore have included intraprogram consistency as an overall criterion that needs to be met in a resilience-building program (see last row in Table 1).

Discussion

An elusive concept such as psychological resilience presents a challenge to anyone intending to design or review a program for building psychological resilience. To advance the design and review of resilience-building programs in the work context, the aim of this article was to develop a set of criteria for such programs from a literature review. To accomplish this, we systematically reviewed studies that synthesized the evidence about the definition, conceptualization, measurement, and enhancement of resilience. Conducting a literature review on the topic is considered an essential part in the design of theory- and evidence-based programs (Bartholomew Eldredge et al., 2016). However, trying to establish criteria from our review was like navigating a labyrinth: We found that psychological resilience has been termed, defined, conceptualized, measured, and enhanced in multiple ways. On the one hand, this fragmented field can be quite confusing for consulting psychologists; on the other hand it illustrates the need for criteria for resilience-building programs.

The result of our review is a checklist of 12 criteria for resilience-building programs in the work context. These criteria (with parenthetical numbers referring to Table 1) address the necessity to: specify which working population (2) is in need of psychological resilience (1); cite which definition is being used (4); display and explain the process that people go through in order to adapt to adversity (7); describe how resilience will be measured (10) and enhanced (12) as a dynamic process, as well as say which type of positive adaptation (6)—to which adversity (5), in which work context (3), and when (8)—is involved; and make clear the starting point (11) and purpose of the

work (9). In this checklist, psychological resilience is not regarded as a static concept but rather as a dynamic process by which people adapt to adversity. To warrant that the way resilience is defined, measured, and enhanced in a resilience-building program is consistent with this process-based perspective on resilience, we added intraprogram consistency as an overall criterion to the checklist.

The checklist is a valuable tool for anyone intending to develop or review a resilience-building program. It will help both researchers and practitioners to position themselves in the fragmented field of resilience, and it will provide information about what is relevant to consider when designing, describing, or reviewing a resilience-building program. Addressing the criteria will contribute to the quality of a resilience-building program. A well-designed and well-described program is a prerequisite to reliably determine its effectiveness and to reliably compare different resilience-building programs in a review or meta-analysis (Vanhove et al., 2016). Addressing the criteria will also contribute to a consistent program design. Without consistency, the design of a program is flawed, which may impact its effectiveness. Last, the checklist will enable a more in-depth comparison of programs when it comes to resilience content. In sum, the checklist can warrant the quality and consistency of a resilience-building program and could become an indispensable tool in the design and review of such programs.

The checklist for resilience-building programs was developed for use in the work context. However, its use is not limited to this context. The checklist can also be used to advance research in other contexts—for example, in health care (e.g., patients) and in education (e.g., students), because programs for building psychological resilience have also been developed for those contexts (Leppin et al., 2014; Macedo et al., 2014). For use in other contexts, only the words *working* and *work* need to be removed from, respectively, Criteria 2 and 3 (see Table 1).

Limitations

In the introduction we mentioned that this article would be restricted to psychological resilience. Our review shows that this type of resilience should be regarded as a dynamic process, which is included in our checklist. As a consequence, our checklist is not fully applicable to programs that regard resilience as a static concept. The advantage of a dynamic-process understanding of resilience is that otherwise excluded types of resilience can be incorporated into the process model, either biological types of resilience or group-level types, for example, team resilience (Alliger, Cerasoli, Tannenbaum, & Vessey, 2015; Chapman et al., 2018), organizational resilience (Barasa, Mbau, & Gilson, 2018), family resilience, or community resilience (Kimhi, 2016; Masten, 2014). However, discussing these types of resilience was beyond the scope of this article, as was discussing genetic influences on resilience (Niitsu et al., 2019) and historical influences, such as adverse childhood experiences (Felitti et al., 1998). In a process model of psychological resilience, these factors could be included as personal and past environmental factors that moderate the relationship between adversity and positive adaptation.

The checklist criteria were developed to address the resilience content of a resilience-building program. As such, they can be considered important topics to take notice of in the design and description of such programs. Some criteria may be applicable to other types of programs as well. However, they are not established for that purpose. To make sure that our criteria cover the resilience content of a resilience-building program, we developed them by evaluating 21 literature reviews on psychological resilience. We restricted ourselves to reviews because they present relevant knowledge about a particular field of study. As a consequence, we assume that our checklist criteria cover the relevant topics in the field of psychological resilience. However, we cannot guarantee full coverage because we did not conduct a systematic review on single studies ourselves. From our review we concluded that there is growing consensus on the definition and conceptualization of resilience. However, there is still much unknown about the best ways to measure and enhance psychological resilience from a process-based perspective. More research is needed in these areas. The results could shed new light on the criteria for resilience-building programs and may lead to more specific criteria in the future.

Implications for Research

The current paper has several implications for research on resilience-building programs, either a single program (e.g., effectiveness study) or several programs (e.g., systematic review). In the case of a single program, the checklist can be used to optimize the design and description of that program with respect to its resilience content. For instance, the checklist criteria prescribe that programs should no longer be based on a static understanding of resilience as a trait, an outcome, or a resource but on the most recent and recommended understanding of psychological resilience as a dynamic process (see Table 3). In order to not linger in the past and to advance research on programs for building psychological resilience, we recommend researchers adopt this process-based perspective. Adopting such perspective also implies that the factor time should be taken into account to warrant that change in resilience can be observed and achieved. The timescale of the process of resilience and the timescale of the adversity should especially be taken into account (for a more in-depth discussion on this topic, see Britt et al., 2016; Fisher et al., 2018). In the case of several resilience-building programs, the checklist can be used for an in-depth evaluation and comparison of programs. Comparing programs against the checklist criteria could offer new insights into the quality of resilience-building programs. Therefore, we recommend the use of the checklist not only when designing a single program but also when reviewing several programs.

Caution is warranted, however, when the checklist criteria are used for selection or classification. Given the established criteria in the current paper, we expect that no or few existing resilience-building programs will be able to meet all proposed criteria. To illustrate, we applied the checklist to the 14 included studies in the systematic review of Robertson and colleagues (2015). With our criteria for selection of resilience-building programs, none of these 14 studies would be eligible for inclusion. Therefore, we do not recommend using all checklist criteria as selection and classification criteria (yet). However, we do recommend researchers be more specific when selecting or classifying programs as resilience-building programs. In the case of systematic reviews of the effectiveness of resilience-building programs, researchers could be more selective by using not one but all three criteria that we mentioned in the introduction and included in our checklist: (a) the general aim of the program is to enhance resilience, (b) the means are offered to enhance resilience, and (c) resilience is measured. In addition, (d) defining resilience and (e) specifying the adversity could be added as inclusion criteria to make sure that programs aren't selected that do not define the topic of interest and do not regard adversity as a critical condition for resilience. Using a stricter set of criteria to guide the selection of studies in new systematic reviews of resilience-building programs could contribute to a better selection of included studies and therefore to more precision in determining the effectiveness of resilience-building programs.

Implications for Practice

Consulting psychologists interested in offering or developing resilience-building programs should be aware that the literature about psychological resilience in the work context is fragmented. At first sight, the concept may seem straightforward: positive adaptation in the context of adversity. However, an area of inconsistency has been the conceptualization of resilience: *what* it is that allows people to positively adapt to adversity (Fisher et al., 2018). Different conceptualizations of psychological resilience can be seen as a reflection of an evolving field: Over time, resilience has transitioned from a trait-based, outcome-based, and resource-based perspective to the current view that resilience is a dynamic process representing positive adaptation to adversity (Fisher et al., 2018; Infurna & Luthar, 2018). As a consequence, consulting psychologists should not superficially pick their favorite or familiar definition, measure, or model of resilience but should take notice of the most recent conceptualization of resilience. We recommend regarding resilience as a dynamic process from now on and developing and offering programs based on this view. Programs based on earlier conceptualizations of resilience should no longer be advertised as resilience-building programs but should be advertised under different names (e.g., resource-building or well-being programs).

The checklist in Table 1 is a useful tool for consulting psychologists to navigate their way through the fragmented field of psychological resilience. When developing, evaluating, purchasing, or comparing programs, they can use the checklist in Table 1 to address the right and most important topics for the resilience-building content of a program. Therefore, consulting psychologists should seriously consider using the checklist as a valuable tool to optimize the design and warrant the quality of their resilience-building programs. All interested stakeholders will benefit from well-designed resilience-building programs.

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