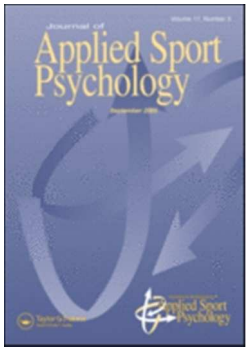

Process Evaluation for Stressor Reduction Interventions in Sport

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Abstract

Stressor reduction interventions may have the potential to improve the well-being of those involved in sport. Organizational psychologists have used these primary interventions in various performance domains. The authors describe the stressor reduction design and implementation processes, and the contexts in which they occur, that impact on these interventions. The authors then examine how process evaluation methods can be applied during stressor reduction in sport settings. Process evaluation requires the frequent collection of data about intervention experiences and events from multiple sources using a mixed methods approach. The article contains practical recommendations for sport psychologists who implement stressor reduction interventions.

Keywords: primary, context, outcomes, design, implementation.

Organizational stress in sport has been defined as "an ongoing transaction between an individual and the environmental demands associated primarily and directly with the organization within which he or she is operating" (Fletcher, Hanton, & Mellalieu, 2006, p. 329). Outside of the competitive performance environment, organizational stressors have the potential to cause negative and unpleasant emotional responses that have implications for stakeholders' well-being and performance (Arnold, Fletcher, & Daniels, 2017; Didymus & Fletcher, 2017). In reviewing the literature Arnold and Fletcher (2012) found that these stressors included: strained and difficult relationships between those in different roles (e.g., between athletes, coaches, governing bodies, etc.); the structure and content of training; poor facilities and demanding travel schedules; personal difficulties (e.g., injuries, rehabilitation and finances) and team factors (e.g., difficult interactions with teammates, poor team atmosphere and high performance expectations from others). The links between exposure to these stressors and well-being suggests that stressor reduction activities (also known as primary stress management interventions, or primary SMIs) could be of benefit to a range of stakeholders in sport (Tabei, Fletcher, & Goodger, 2012). Didymus and Fletcher (2017) conclude that "the aim is to adapt the environment to reduce or eliminate stressors" (p. 174) with these interventions.

Organizational and occupational psychologists have attempted to use these interventions to reduce the severity of workers' exposure to similar stressors in various performance domains. These often involve changes to the content of work tasks and are sometimes implemented through activities labelled as job redesign (Parker, 2014). Such changes include: adjustments to the amount, type and intensity of cognitive, emotional and physical workload; fixing issues with unsuitable work equipment; and providing more opportunities to use skills and make decisions (Bambra, Egan, Thomas, Petticrew, & Whitehead, 2007; Montano, Hoven, & Siegrist, 2014; Parker, 2014). Primary SMIs can also

be used to address stressors found in the context of work such as interpersonal conflict, inadequate feedback on performance and lack of clarity about roles in a team. Example interventions include increasing opportunities for task-related interactions with colleagues (e.g., through autonomous work groups), team development activities and the redesign of performance feedback processes (Bambra et al., 2007; Bond, Flaxman, & Bunce, 2008; Egan, Bambra, Thomas, Petticrew, Whitehead, & Thomson, 2007; Holman & Axtell, 2016; Nielsen, Randall, & Christensen, 2017). In one example, Pain and Harwood (2009) found that regular post-match structured group discussion of their performance data by soccer players had the potential to improve elements of team functioning, such as cohesion and communication, that could be stressors if not well-managed. The delivery of interventions to develop psychological resources in a workshop format, such as emotion regulation training (Wagstaff, Hanlon, & Fletcher, 2013), may also provide some opportunities for participants to obtain social support and improve communication.

There are few examples of primary SMIs in sport contexts: most interventions are secondary SMIs focused on the development of psychological resources (Didymus & Fletcher, 2017; Rumbold, Fletcher, & Daniels, 2012). As in other performance domains, some organizational stressors found in sport contexts are not readily amenable to primary intervention. These include media and public scrutiny of well-funded and successful sport organizations, intense competition for team selection and demands to travel to competition (Arnold & Fletcher, 2012). However, primary interventions could be identified that reduce the frequency, duration and intensity of some organizational stressors by increasing, for example, the clarity of goals, stakeholders' control over their schedules and the methods they use to achieve goals (Arnold, Fletcher, & Daniels 2016). There are strong ethical grounds for using these interventions because changes to the content and context of activities can reduce the need for individuals to risk harm by severely depleting their psychological and physical

resources in pursuit of performance goals (LaMontagne, Keegel, Louie, Ostrey, & Landsbergis, 2007). By altering the source of stress such interventions may also have long-term effects although concrete evidence for such effects is lacking (Bambra et al., 2007; Montano et al., 2014). In contrast to secondary interventions, the use of primary SMIs may also carry less risk that participants will infer that they are in some way to blame for their experience of stress (Briner & Reynolds, 1999). In summary, stressor reduction interventions may represent a promising but largely untapped strategy for sport psychologists.

An important finding from organizational psychology is that the way that primary SMIs are designed and delivered has the potential to impact on their outcomes (Abildgaard, Saksvik, & Nielsen, 2016; Egan et al., 2007; Nielsen & Miraglia, 2017). Interventions that reduce the severity of stressors are argued to exert effects that are sustained over time by causing sustained changes in perceptions of the environment (LaMontagne et al., 2007). However, they take place within complex and changing contexts that can alter intervention activities and render changes to environmental demands no longer relevant or suitable (Nielsen & Randall, 2013). The involvement of multiple stakeholders (e.g., colleagues, leaders and external consultants) in the identification of stressors and the design and delivery of interventions means that interventions can derail before or during the implementation of changes to environmental stressors (Biron, Ivers, & Brun, 2016). Much is now known about the factors that have the potential to influence the effects of stressor reduction interventions in organizational settings and this information may be useful to sport psychologists seeking to make more effective use of them.

In this article we identify a range of intervention design and implementation factors, and features of the intervention context and of the intervention recipients, that could be examined as part of a process evaluation. We discuss the potential for using process evaluation to enhance stressor reduction intervention and evaluation in sport contexts. We

begin by examining the need for process evaluation by briefly outlining the working mechanisms of stressor reduction.

Stressor Reduction Intervention Processes and Working Mechanisms

Primary SMIs involve changing for the better environmental conditions that have established links through the experience of stress to significant health outcomes (Bambra et al., 2007; LaMontagne, et al., 2007). These conditions include, for example, opportunities to use skills and make decisions and levels and types of demands (Karasek, 1979). Organizational psychologists have evaluated changes to these and other environmental conditions and found significant improvements in self-reported affect (e.g. satisfaction with the job), health and in some cases also performance (e.g., Bond et al., 2008; Holman & Axtell, 2016). Transactional theories of stress indicate that altering environmental inputs to the appraisal process can change individuals' evaluations of their situation (Lazarus, 1999, 2000; Lazarus & Folkman, 1984). Changes in individuals' perceptions of their environment (e.g., a perception of clearer role expectations or reduced demand) can be associated with less stressful appraisals (i.e., benefit or challenge appraisals rather than threat or harm / loss appraisals). In theory, these changes to perceptions and appraisals must occur for primary SMIs to be effective as these are crucial active ingredients of the intervention that are linked to its outcomes (Daniels, Gedikli, Watson, Semkina, & Vaughn, 2017; Holman & Axtell, 2016). More positive appraisals can trigger changes in emotional states (e.g., reduced anxiety, worry, fear and frustration) that over time and through complex physiological mechanisms impact on individual well-being and associated performance (Nixon, Mazzola, Bauer, Krueger, & Spector, 2011). Bakker and Demerouti (2007) have also argued that through similar mechanisms providing environmental resources (such as those that result in both perceptions and enactment of autonomy to make decisions and use skills) can stimulate positive affect and behavioural outcomes such as increased enjoyment of tasks and

motivation. There is a strong theoretical rationale for stressor reduction interventions but intervention design and delivery processes are not simple and can support or undermine intervention mechanisms (Nielsen & Randall, 2013). A primary SMI must be developed through activities that lead to changes in environmental demands that are linked to stressful appraisals that, in turn, are linked to health (Kompier & Kristensen, 2001). In addition, intervention delivery processes must sustain those changes in individuals' appraisals while they continue to appraise many other health-related aspects of a dynamic and complex environment (Abildgaard et al., 2016). In sport psychology interventions, outcome evaluation and social validation data rarely provide sufficient information to support tests of the validity of these hypothesized intervention processes and mechanisms (Didymus & Fletcher, 2017).

Process Evaluation

We briefly outline definitions of process evaluation before discussing its use with stressor reduction interventions. One widely used definition from organizational psychology refers to it as "individual, collective or management perceptions and actions in implementing any intervention and their influence on the overall result of the intervention" (Nytrø, Saksvik, Mikkelsen, Bohle, & Quinlan, 2000, p. 214). Murta, Sanderson and Oldenburg (2007) define process evaluation more in terms of intervention fidelity i.e., delivery of all intervention activities according to a plan based on good theory that led to consistent exposure to the intervention across the target population. Both definitions highlight the need to gather information about actions taken and stakeholder perceptions (from those targeted by the intervention and from those involved in its design and delivery) of the quality of intervention components and activities.

Others argue that process evaluation needs to go further and should also involve the collection and analysis of data about the organisational contexts within which the intervention

occurs, the characteristics of those receiving the intervention and the psychological processes that determine its outcomes (Havermans, Schelvis, Boot, Brouwers, Anema, & Van der Beek, 2016). This approach also addresses questions of how and why implementation activities generate uptake (or avoidance) of the intervention (Weiner, 2009). In sport psychology there are examples of process evaluation being used to identify the active ingredients of various interventions. Robertson, Zwolinsky, Pringle, McKenna, Daly-Smith and White (2013) used interviews with participants to identify the active ingredients that sustained voluntary participation in a Premier League health promotion project: for some participants it was the opportunity for involvement in very physical activities for others it was social contact. Using a longitudinal interview study, Stotder and Cushion (2017) found that there were large individual differences in the decisions that youth soccer coaches made when incorporating elements of their coaching experiences into their learning and practice. Although not from primary SMIs, these findings illustrate a particularly important element of process evaluation: Diverse perceptions and responses can occur even when intervention participants are exposed to similar environmental conditions or intervention activities.

Process evaluation can be used to identify factors in the design and delivery of interventions that are linked to their outcomes (Randall, Nielsen, & Tvedt, 2009). The working mechanisms of stressor reduction means that process evaluation needs to capture data about events occurring before and during the intervention and stakeholders' perceptions of those events (with stakeholders being all those involved in designing or delivering or receiving the intervention). In addition, collecting both qualitative and quantitative data on these factors allows for depth and flexibility of inquiry (since the factors impacting on the intervention may not all be known in advance) and supports robust analysis of the links between intervention processes and outcomes (Abildgaard et al., 2016; Nielsen et al., 2017). The process evaluation questions shown in Table 1 (discussed in more detail later) can be

used in three ways: to guide the identification and analysis of documentary evidence; to develop topic guides for interviews; and to design simple questionnaire measures (see also Table 2).

The Need for Processes Evaluation

The literature on stressor reduction in work organizations is small and shows that interventions have inconsistent effects on affect and self-reported health outcomes (Montano et al., 2014). Process evaluation can be used to identify whether implementation failures (problems with intervention design and delivery) and contextual events account for this inconsistency (Murta et al., 2007; Nielsen & Randall, 2013). The lack of intervention evidence may also be a consequence of the constraints researchers encounter when trying to establish and maintain methodological rigorous intervention studies (Cox, Karanika, Griffiths, & Houdmont, 2007). The practicalities of intervention delivery in organizational settings mean that very few studies of primary SMIs are randomized control trials involving large numbers of participants (Richardson & Rothstein, 2008). Quasi-experimental studies of interventions often lack sufficient rigour to maintain the internal and external validity of research findings (Daniels et al., 2017; Montano et al., 2014; Richardson & Rothstein, 2008). Process evaluation can be used to identify explanations for intervention outcomes when there are limited options for using controlled intervention exposure and sophisticated quantitative data analysis to isolate intervention outcomes (Cook & Fletcher, 2017; Cook & Shadish, 1994). It also can be used to bolster the reliability and validity of outcome evaluation when there are significant constraints on the design of the outcome evaluation. For instance, when control and intervention groups cannot be used to manipulate levels of intervention exposure, documented differences in intervention exposure can be used to create “intervention” and “no intervention” groups before data are analysed (Pawson, 2013; Randall, Griffiths, & Cox, 2005).

Participatory approaches are frequently used to identify and tackle context-specific stressors in successful stressor reduction interventions (e.g., through participatory action research activities; see for example Holman & Axtell, 2016; Bond et al., 2008). This approach can increase the likelihood of the intervention plan being appropriate for, delivered to, and perceived by participants, thus triggering its active ingredients (Nielsen & Randall, 2013). To replicate this approach sport psychologists may wish to draw upon the expertise of athletes, coaches, managers, administrators and external consultants during intervention design (Arnold, Fletcher, & Daniels, 2013). Process evaluation can be used to examine whether the interventions developed through these processes: target the stressors being experienced; integrate well with, and are sustainable in, the intervention setting; and are well-supported by those involved in the intervention (Nielsen & Randall, 2012). Finally, the long-term nature of stressor reduction activities means that interventions can rarely be insulated from external factors that commonly impact on sports organisations such as a re-structuring or a downsizing (Bambra et al., 2007). Processes evaluation can be used to identify whether such events are impacting on the delivery of the intervention and on how it is experienced and perceived by participants (Nielsen & Miraglia, 2017).

It is likely that many stressor reduction interventions in sport will implemented with small and diverse participant groups (e.g., sports teams or groups of coaches), fluctuating contexts (e.g., across a competitive season), involve intervention activities that are not wholly under the practitioner's control (e.g., participants changing their training content and schedules or their working relationships with teammates and coaches) and that control groups will often be unavailable. Process evaluation can provide valuable data that can be used to better interpret intervention outcomes in such circumstances (Cook & Fletcher, 2017).

The Constituents of Process Evaluation

As already mentioned, process evaluation can be used to examine a wide range of events occurring both within and around an intervention. At its most basic level, process evaluation resembles a manipulation check used in experimental psychology, often expressed as a dichotomous variable of intervention exposure vs. non-exposure (Randall et al., 2005). Measuring intervention exposure can be particularly important when interventions are delivered by third parties or across a wide range of locations, or in any other circumstances that result in the psychologist having limited control over the delivery of the intervention (Cox et al., 2007). Process evaluation data at this level may come from administrative records of participant attendance during intervention delivery and some audit of adherence to the delivery of the intervention activities such as researchers' observations (Nielsen & Randall, 2013; Rumbold, Fletcher, & Daniels, 2018). These data can then be used to avoid drawing the incorrect conclusion that an intervention is ineffective (i.e. theory failure) when implementation failure undermined its impact: this is a Type III error (Cook & Campbell, 1979; Dobson & Cook, 1980). Low levels of intervention fidelity (i.e., large differences between the intervention delivery and intervention plan) and exposure are likely to be symptoms of other problems with intervention processes that also need to be resolved if it is to have a chance of success (von Thiele Schwarz, Lundmar, & Hasson, 2016). Process evaluation can be used to identify the reasons for low fidelity (e.g., low levels of management support for the intervention or lack of knowledge, skills or confidence among those involved in its design and implementation). This information can then be used to resolve these issues before intervention effects are undermined (see section on Methodological and Practical Implications).

Organizational psychologists have found that process evaluation needs to extend beyond checks on intervention fidelity for four reasons. First, stressor reduction involves a

number of different stages, activities and stakeholders. Intervention exposure is not a dichotomy: Participants may report receiving none, some or all parts of the intervention (Cox et al., 2007; Randall, et al., 2005). This means there can be significant between-participant variance in intervention experiences, even among those who, in the researchers' judgement, are exposed to the intervention. For example, a researcher may observe good attendance at a well-facilitated team development session but the interventions that emerge from that group might not transfer beyond the intervention setting in a way that reduces stressors in participants' team interactions away from the intervention environment (Nielsen et al., 2017). Second, variables other than the intervention itself can influence its effects. These include barriers or facilitators found in the intervention contexts. Examples are evident in the review by Arnold and Fletcher (2012) and include insecurity of financial support (a common problem for elite athletes and those working with them as their funding is under constant scrutiny) and selection during the season (a potential contextual stressor for all stakeholders in sport even for those with relatively secure professional contracts and salaries). These contextual factors may impact on participants' enthusiasm for or engagement in an intervention. Such insecurity is also likely to have a direct impact on measures of intervention outcomes such as well-being (De Cuyper & De Witte, 2006). Third, those targeted by and involved in the intervention form views and opinions about the intervention that influence their levels of participation in and engagement with intervention activities (Nielsen, Randall & Albertsen, 2007; Robertson et al., 2013). Fourth, there may be significant heterogeneity in the psychological characteristics and experiences of those in the intervention participant group that have implications for the suitability or "fit" of the intervention. In other words, the intervention is likely to be a better fit for some than it is for others (Randall & Nielsen, 2012).

In order to fully evaluate complex multi-faceted interventions delivered to heterogeneous participant groups in complex settings a similarly complex and multi-faceted approach to process evaluation is needed. Nielsen and Randall (2013) argued that this needs to be done at three levels: the intervention context, the intervention content and the mental models of stakeholders. In order to conduct a rigorous process evaluation, data need to be collected about both intervention design and delivery activities (Nielsen & Abildgaard, 2013). In the following three sections (Intervention Context, Intervention Content and Mental Models) we describe in more detail the types of data that can be collected. Table 1 summarises the specific questions that practitioners should seek to address at each stage. Table 2 shows some examples of simple questionnaire items that can be used to collect quantitative data from stakeholders.

- Insert table 1 about here –

- Insert table 2 about here –

Intervention Context

The working mechanisms of stressor reduction are active in the day-to-day context and occur within complex organisational contexts: their effects cannot be fully evaluated without considering the effects that these contexts may have on the intervention and its outcomes. Nielsen and Randall (2013) identify two layers of the intervention context, the omnibus and discrete. The omnibus context refers to prevailing culture and overall condition of the organisation. For example, this may include consideration of questions such as: is the organisational culture focused on high performance (e.g., winning Olympic medals) and if so how does this manifest itself through leaders' behaviour, goal-setting, the management of athlete dissatisfaction and so on (Fletcher & Streeter, 2016)? A very different culture may exist in an organization focused on increasing public participation and thus provide a very

different backdrop for stressor reduction. By contrast Nielsen and Randall (2013) describe the evaluation of a discrete context that "focuses on specific events that may have influenced the effects of the intervention" (p. 607). In sport this may include fluctuating game preparations, conflicting coaching styles, moving training locations, changes in team composition and training schedules (Rumbold, Fletcher, & Daniels, 2018) and any number of demands and resources that have a direct impact on the intervention activities. As in work organizations these two contexts are likely to interact in sport. For example, changes in organisational-level performance expectations may result in the disruption of coach-athlete relationships, or increased public interest in a sport may result in higher levels of participation and greater competition for places in a team.

Throughout process evaluation contextual data need to be collected for two reasons. The first reason is that the context can impact on intervention design and delivery by introducing barriers and facilitators to intervention activities. Discrete but significant events in organisations can derail intervention activities thus reducing participants' exposure to the active ingredients of the intervention or changing their views of the intervention. For example, during a competitive season clients may experience acute stressors (e.g., injury) that make long-term stressor reduction activities (e.g., improving interactions within a team) a lower priority. In this situation providing the athlete with more control over the acute stressor (e.g., their rehabilitation programme) may become a higher priority and the psychologist may have to pause or adjust the intervention that had originally been planned. The second reason is that context can directly influence intervention outcomes, potentially masking the effects of an intervention on health and performance (Bambra et al., 2007). The evaluation of an otherwise potent intervention delivered against the backdrop of withdrawal of funding from a sports organisation may not yield positive results if the loss of perceived monetary resources itself impacts on participants' emotional states and well-being (see Hobfoll, 1989). The

discrete context can also impact on intervention outcomes in similar ways. For example, members of a sports team that loses talented and influential players during the delivery of a teambuilding intervention may find the intervention process more challenging when compared to a team that experiences no significant personnel changes.

From a practical perspective it is important that researchers remain alert to and document information about context throughout the intervention process. However, it is also important to collect information about how the participants' appraise the impact of the context on their experiences of the intervention (see Tables 1 and 2). This helps to identify whether the researchers' judgments about the significance of the impact of the context on the intervention are reflected in the participants' experiences. The importance of participants' appraisals of intervention process is discussed in more detail later (see section on Mental Models).

Intervention Content

Evaluation of program content includes: adherence (fidelity of delivery); frequency, amount, timing and maintenance of participant exposure to intervention components that help to deliver its active ingredients; and the quality of intervention delivery (e.g., information supplied about the intervention and the competence of those involved in its delivery). Therefore, this element of process evaluation shares several of the features of program integrity (i.e., the degree to which the program, or intervention, was delivered as planned), a concept that may already familiar to sport psychologists (see Brown & Fletcher, 2017; Dane & Schneider, 1998). Rigorous process evaluation draws these data from multiple stakeholders who are viewing and experiencing intervention activities from different perspectives.

Making available to participants information about how and why an intervention is being initiated can influence recipients' perceptions of its suitability and its effects (Fredslund & Strandgaard, 2005). Identifying the individuals involved in the key choices about the design of the intervention (and their reasons for implementing it) is important as it can be linked to recipients' discretionary choices about involvement in the intervention (Nielsen, Randall, & Christensen, 2010). This may be especially relevant in sport contexts as case study research has pointed to the importance of influential leaders' behaviour and the prevailing culture on athletes' involvement in various performance-related interventions (Fletcher & Streeter, 2016). Organizational psychologists have found that interventions implemented with the explicit objective of improving performance can have unintended negative consequences for well-being (Egan et al., 2007). Although the reasons for this are not yet known sport psychologists may need to remain particularly aware of this possibility (e.g., if there is evidence that participants are over-committing to performance-related interventions at the expense of their well-being).

Interventions developed in response to a strong analysis of underlying problems (e.g., a risk assessment or stress audit) have a better chance of matching the needs of intervention recipients than interventions implemented without such an analysis (Nielsen, Randall, Holten, & Rial Gonzalez, 2010). The same authors found that intervention design processes that take into account the controls and resources already in place to manage risks can result in more efficient and targeted interventions. Documentary evidence regarding the nature and rigor of activities carried out in the problem-identification phase can be used to critically evaluate the appropriateness of the intervention (Nielsen & Randall, 2013).

The need to make stressor reduction context-specific and bespoke also suggests that appropriately qualified and knowledgeable stakeholders need to be involved in intervention design (Nielsen et al., 2010). In sport, stakeholder credibility (i.e. their track record of

delivering interventions elsewhere) may also be important. There is some evidence of the importance such referent power in delivering physical education interventions (Lyngstad, 2017) but the role of various forms of power in stressor reduction interventions has not been widely researched in organizational psychology. Involving recipients in the design of primary SMIs can help with the development of interventions that are appropriate for the context and that include activities that participants are motivated towards to making work (Nielsen et al., 2010). The process of participating in the design of solutions to problems can enhance participants' perceived control and autonomy making the process itself a positive intervention (Elo, Ervasti, & Mattila, 2008). Arnold et al. (2016) have suggested that enhancing control may be a particularly important method of stressor reduction in sport. Observational data and researchers' records of the type, quality, frequency and amount of stakeholder involvement in intervention design can provide extremely valuable process evaluation data when evaluating intervention outcomes (Saksvik, Nytrø, Dahl-Jørgensen, & Mikkelsen, 2002).

Participatory design and implementation processes can challenge and stretch participants. In participatory interventions the nature and allocation of leadership activities can change. Leadership tasks may be divided up and allocated across different team members, or leaders take on more coaching tasks while allocating transactional leadership tasks to team members (Nielsen et al., 2017). In sport psychology similar changes may occur through the use of team resilience interventions (Morgan, Fletcher, & Sarkar, 2015). The new demands that can accompany interventions make it important to document the measures taken to assess and develop the competencies of those whose roles change because of the intervention.

Mental Models

Intervention context and implementation factors should be carefully recorded and documented by researchers and practitioners. However, it is often the way that these are represented in stakeholders' mental models that are linked to intervention outcomes. Contextual effects and implementation factors that go unnoticed, or that are considered unimportant, are unlikely to have any significant impact on the way that participants appraise the stressors they are facing and the resources they have available to them (Randall et al., 2005). The breadth of intervention-specific appraisals that need to be captured is described by Nielsen and Randall (2013) in their summary of Nytrø et al.'s (2000) conclusions:

> For interventions to be effective, it has been argued that employees should perceive that they have problems that need to be addressed, believe that the intervention will be effective in addressing those problems, and be motivated to actively support the intervention by participating in intervention activities. (Nielsen & Randall, 2013, p. 607).

Therefore social validation and process evaluation share some common features. Social validation necessitates the collection of participants' appraisals of satisfaction with the intervention taking into account issues such as the importance of the intervention goal and its effects to the participants and the appropriateness of the intervention activities (Page & Thelwell, 2013).

Beyond social validation, as part of process evalaution participants also need to be asked about their exposure to and experience of the active ingredients of the intervention (e.g., did they attend a team de-briefing and was there sufficient opportunity for them to share their experiences and get developmental feedback). These questions should include an element of evaluation as the experience of an intervention may not always be positive (Biron

et al., 2016). Simple questions (see Table 2) can be used to capture information on the valence and size of the impact of the intervention on the problematical issues targeted by the intervention (Randall et al., 2005).

Data also need to be collected about the proximal outcomes of interventions. In organizational research the focus has too often been on distal outcomes such as attendance at work or diagnosed illness: These are complex variables that are determined by many factors unrelated to the intervention activities (Nielsen & Miraglia, 2017). A similar criterion problem may occur when using such interventions in sport contexts. For example, interventions designed to increase support from teammates and coaches should be evaluated primarily by gathering data about perceived support. Well-validated measures exist to track such outcomes (e.g., the OSI-SP; Arnold et al., 2013). This is important because inadequate levels of support are a significant potential organizational stressor in sport and thus changes in perceived support are relevant markers of intervention success. It is theoretically possible that such interventions lead to improved results for the team (Pain & Harwood, 2009). However, such outcomes may also be determined by many other factors unrelated to the intervention but found in the competitive environment (such as the quality of the opposition, weather conditions, refereeing decisions and so on). In sport contexts stakeholders' well-being and performance may also be influenced by a number of factors related to their involvement in sport but that occur outside of the sport organization. These may include difficulties in balancing sport activities with family commitments or the impact of stressors at home spilling over into sport activities. For example, the demands associated with developing the skills and experience required to coach in elite contexts can cause disruption to work-life balance (Dawson, Dioth, & Gastin, 2016).

Given that participatory approaches are argued to result in better fitting interventions (Elo et al., 2008) data should be captured on breadth and depth of felt participation in

intervention design and delivery activities. This can be done through interviews or questionnaire methods (see Randall et al., 2009, and Tables 1 and 2). Participants should also be asked to give their views on the reasons for the implementation of the intervention as these can be linked to their motivation to participate in the intervention activities (Randall & Nielsen, 2013). Participants, especially those leading the intervention (see Nielsen et al., 2017), should be asked about the extent to which they feel adequately equipped and able to participate in the designing and implementing interventions that address difficult or persistent problems. This is a prospect some may find daunting or burdensome (Daniels et al., 2017). When external consultants help with the intervention, their activities, credibility and perceived impact could also be examined.

Stressor reduction interventions can result in some degree of conflict and uncertainty about role requirements as the nature and allocation of tasks change. Perceptions about whether these issues are handled constructively and how roles are clarified (especially by leaders) have been shown to be linked to the healthiness of change processes (Tvedt, Saksvik, & Nytrø, 2009). More generally, data on stakeholders' (other than the recipients) attitudes to the intervention need to be captured especially if they are particularly influential in making it effective (Randall et al., 2009). Emotional contagion around intervention activities may be particularly relevant in sport given what is known about the impact of individuals' outward displays of emotion on other team members (Jones, 2012; Totterdall, 2000). Comments about and reactions to intervention activities from those not directly targeted by the intervention may have an impact on recipients (e.g., if peers or leaders are vocal in their scepticism about or support for a stressor reduction activity). This topic has received relatively little attention in organizational psychology. Social learning theories indicate that in a team environment the views about the intervention held by strong role models will influence the extent to which other team members engage with that intervention. Research

has shown that the effects of interventions are enhanced if those involved share similar views of its value to them (Hasson, von Thiele Schwarz, Nielsen & Tafvelin, 2016). It is possible that when perceptions of stressors are shared, self-initiated stressor reduction interventions may transfer to others more readily (Hayward, Knight, & Mellalieu, 2017). Even within the same sports there may be different intervention needs and therefore different responses to interventions. For example, for those competing at very high levels, stressors associated with travel and accommodation and problems with coaching relationships may be particularly intense and frequent (Arnold et al., 2016). Therefore, interventions that address these issues might be seen as more relevant and worthwhile by those involved in high level competition than by others competing at lower levels or less frequently. These findings indicate that sport psychologists should examine the consistency between- and within-stakeholder groups in their perceptions of stressors and in their attitudes to the design and delivery of the intervention.

Organizational research has also indicated that it is important to assess participants' readiness for the intervention (Randall et al., 2009). Developing and implementing stressor reduction interventions can be a source of additional demands (e.g., the time and effort required to fully participate). For individuals already experiencing intense training regimes, leading others or preparing for important competitive events, intervention activities may be seen as unwelcome distractions unless these activities are carefully designed and delivered. In organizational psychology increases in autonomy are often identified as interventions that improve employee satisfaction and well-being (Montano et al., 2014). In sport this may include giving stakeholders more choice about nutrition, training and rehabilitation schedules (Arnold et al., 2016). In such circumstances it would be important to examine whether those involved felt ready and equipped to make these decisions. Outcome expectancies, the extent to which the participants believe that the intervention will be effective and sustainable, can

also provide good information about the reasons why participants may choose to avoid or approach intervention activities (Fridrich, Jenny, & Bauer, 2016). These expectancies can be in part determined by previous experiences of similar interventions and it can sometimes be useful to gather information about whether participants' views of the intervention are linked to their previous experiences (either good or bad). Novel intervention activities often require those involved to develop new knowledge and skills (e.g., developing an understanding of the specific behaviours that can be used to provide additional emotional support for teammates) and therefore participants' level of confidence and competence in these skills should be evaluated.

Methodological and Practical Implications

Here we highlight some of the specific ways that such data can be used to improve outcome evaluation and enhance intervention practice. Many observations over time and many sources of data are needed for thorough process evaluation. It is recommended that practitioners keep detailed field notes of their observations, seek out useful organisational records (e.g., attendance at intervention activities, recent stress audit results), interview stakeholders in the intervention about its design and delivery and use short questionnaire surveys throughout the intervention process. These data are more easily obtained and informative when the practitioner maintains frequent contact with those designing, delivering and receiving the intervention. In unpredictable and changing intervention processes, interviews and the collection of field notes provide deep and flexible forms of enquiry. Questionnaire data (see Table 2) provides a more practicable means of collecting data (especially from larger populations) and facilitates direct analysis of the links between perceptions of the intervention process and outcome measures (see Abildgaard et al., 2016; Randall et al., 2009).

Process evaluation data should also be used to examine the degree of heterogeneity within the recipient group so that different sub-groups can be identified within those targeted by the intervention. Even with changes to environmental stressors, it is best not to assume that all participants are equally likely to experience the average intervention effect (Ivarsson & Andersen, 2016). For example, outcomes for those reporting exposure to the intervention as intended can be compared to those reporting limited or no exposure to intervention activities (Biron et al., 2016; Randall et al., 2005). This principle should be extended to make multiple comparisons based on variability in process evaluation data, for example by comparing outcomes for those indicating that they felt equipped and motivated to get the best from the intervention to those who did not. It should also be used to identify whether those experiencing problems before the intervention report the most improvements after its delivery (Flaxman & Bond, 2010). Such differences in the need for the intervention can mask important intervention effects among those most at risk from the stressor (Randall et al., 2005).

Process evaluation will often require the design of data collection tools that are bespoke to the intervention being evaluated. This may appear to be a daunting task. The underlying process factors described in Table 1 appear to be relevant across a range of interventions and can be used as a starting point for the design of bespoke tools. Many of the process evaluation measures, both qualitative and quantitative, used to collect the data described in Table 2 are brief and user-friendly (see Nielsen and Randall, 2013). The examples in Table 2 are indicative of how these might be translated to sport contexts.

Nielsen and Miraglia (2017) have argued that the question asked during most interventions, “did the stressor reduction intervention work?” is too simple. Meta-analysis allows researchers to identify consistent effects but allows only limited consideration of intervention processes as moderators of intervention effects. Organizational research shows

that intervention processes, especially exposure to active ingredients, are mediators of intervention outcomes (see Bond et al., 2008; Holman & Axtell, 2016). For example, the context can act as a trigger for, or brake on, intervention activities. Members of teams experiencing conflict and mired in a sequence of particularly bad results may be more likely to seek an intervention than those who are in a team on a winning streak. However, there may be a risk that the problems that those in the team are experiencing are so severe that intervention activities are difficult to manage. In circumstances such as these some pre-intervention work such as role clarification and the development of individual and collective self-efficacy may be needed to prepare participants for intervention design (Randall, 2013). Intervention processes and perceptions of them should be measured to assess the extent to which participants believe they can engage with and benefit from the design and delivery of stressor reduction. Process evaluation can be particularly useful when attempting to examine context + mechanism = outcome pathways (Pawson, 2013). This approach provides better insight into "what works for whom in which circumstances" (Nielsen & Miraglia, 2017, p. 46). This may be a useful new way of considering the impact of stressor reduction in sport contexts, especially given within-sport diversity in exposure to stressors (Arnold et al., 2016).

Process evaluation could be used to fix problems with intervention processes before or as these occur to prevent interventions from becoming derailed and ineffective (note the use of the present tense in the questions presented in Table 1). Low levels of participant engagement and motivation frequently undermine stressor reduction (Nielsen et al., 2010). Process evaluation should be used to identify and correct the causes of these implementation problems (e.g., through the modification of the intervention or its design and delivery processes). Process monitoring approaches are recent developments in organizational psychology and there is little information about their effectiveness (Randall, 2013; von Thiele Schwarz et al, 2016). During stressor reduction interventions sport psychologists should

consider collecting processes evaluation data frequently using brief and unobtrusive methods so that it is available to help keep intervention activities appropriate and effective.

Conclusion

Sport psychologists may see stressor reduction intervention as an under-used method that has the potential to tackle a number of problems faced by those involved in sport. The lessons learned by organizational psychologists about the conduct of process evaluation provide sport psychologists with a significant amount of information that they can use during the design, delivery and evaluation of these interventions. Process evaluation data can be used to identify why stressor reduction is working (or failing); for whom it seems to be working best (and for whom it seems to be working less well); and the contextual conditions under which it seems to be most (and least) effective.

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Table 1:

Example Questions to be Used as Part of a Process Evaluation

Intervention contexts (omnibus and discrete)
Data collected throughout the intervention process (combination of observations, documentary evidence, interviews and questionnaires)
▪ What are the cultural contexts for the intervention (e.g. cohesive team environment; administrators under pressure to improve participation; group of athletes preparing for intensive selection process etc.)?
▪ What contextual factors impact on the intervention design and delivery activities?
▪ What are the contextual barriers to and facilitators of the intervention (e.g. are acute stressors or other chronic stressors faced by participants getting in the way of or diluting intervention activities)?
▪ What other environmental factors are influencing the stressors and outcomes targeted for intervention?
▪ What other controls and resources are in place to help manage or reduce the stressor? How effective are these?

Table 1 continued:

Example Questions to be Used as Part of a Process Evaluation

Intervention content
Design phase questions (predominantly observations, documentary evidence, and stakeholder interviews) ▪ Who are the stakeholders in the intervention (e.g. athletes, coaches, administrators, external consultants, support staff etc.)? ▪ What stress audit activities are carried out in order to identify the stressors and target individuals requiring intervention? ▪ How is the intervention designed and who is involved (and what extent were stakeholders adequately involved)? ▪ How knowledgeable, qualified and credible are those involved in stressor identification and intervention design? ▪ What are the intended active ingredients of the intervention? What is its proposed working mechanism and what are the intended outcomes? ▪ What is the intervention plan (activities, timings, delivery mechanisms)? ▪ What actions are taken to develop the competencies stakeholders needed for effective design and delivery of the intervention?
Delivery phase questions (combination of observations, documentary evidence, interviews and questionnaires) ▪ How often and when are participants exposed to the active ingredients and how long for? ▪ What are, if any, the deviations from or changes to the planned intervention when it was delivered? Why do these deviations occur? ▪ What information is provided to stakeholders about reasons for the intervention? ▪ What are the objectives of the intervention and do different stakeholders hold different views about the intervention objectives?

Table 1 continued:

Example Questions to be Used as Part of a Process Evaluation

Mental models
Design phase questions (predominantly interview and questionnaire data)
▪ Have stakeholders experienced a similar intervention in the past and what are their experiences and views of that intervention?
▪ How ready do stakeholders feel for the intervention activities and do these activities fit well with other demands they are facing?
▪ To what extent do stakeholders believe they are competent to deliver and / or benefit from the intervention activities?
Delivery phase questions (interview and questionnaire data)
▪ What are stakeholders' views of the suitability, quality and likely effectiveness of the intervention (and are there differences between stakeholders' views)?
▪ What do participants perceive to be the active ingredients of the intervention (i.e. what are the stressors being targeted by the intervention)?
▪ What active ingredients of the intervention participants report they are experiencing? How big is the perceived impact and is it positive or negative?
▪ What are stakeholders' levels of motivation towards the intervention activities?
▪ How, and how well, are any difficulties or problems with the intervention being dealt with?

Table 2

Some Example Process Evaluation Questionnaire Items

Intervention context

- This intervention is fitting in well with my other commitments / my goals
- The way this intervention is being designed and implemented fits in well with the way things are done around here
- Other things happening around here are disrupting intervention design / delivery activities

Intervention content

- This intervention addresses a stressor that impacts on me
- This intervention is relevant to, and appropriate for, my situation
- I am contributing effectively to the design / implementation of this intervention
- Appropriate expertise is being used in intervention design and implementation
- Problems with the intervention design / delivery are being resolved

Mental models

- I understand the aims and objectives of this intervention
- Others stakeholders around me are supporting this intervention
- This intervention is causing some conflict / uncertainty / ambiguity
- I am doing things differently now as a result of this intervention
- This intervention is making a sustainable, positive / negative difference for me
- This intervention is making a sustainable, large / small difference for me
- This intervention fits well with my preferred ways of doing things
- I have the knowledge, skills, abilities and confidence to make this intervention effective for me

Notes. Suggested scale 1-5 Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). These example items will need to be tailored according to the nature of the intervention being implemented and may not be applicable to all interventions. Depending upon the nature of the intervention, other questions may also be needed for a complete process evaluation.