

## Improving grounded theory research in sport and exercise psychology: Further reflections as a response to Mike Weed

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### ARTICLE INFO

#### Article history:

Received 17 July 2009

Received in revised form

16 October 2009

Accepted 11 December 2009

Available online 6 January 2010

#### Keywords:

Qualitative research

Evaluation

Research design

Grounded theory

### ABSTRACT

**Objective:** The purposes of this paper were to respond to and expand upon Weed's (2009) critique of the use of grounded theory methodology in sport and exercise psychology. Our objectives were to clarify and correct some issues and suggest solutions to the valid problems identified.

**Method:** Weed reviewed 12 grounded theory articles published in four sport and exercise psychology journals between 2000 and 2008. We conducted a thorough review of the literature and found Weed's inclusion/exclusion criteria were not consistently applied. The search also appeared incomplete because papers published outside the four journals reviewed were not included. As a result, some of the criticisms raised were unfounded while others were even more prevalent. We have provided a precise and balanced critique of the literature based on eight core characteristics of grounded theory. We have also suggested some practical solutions for improving grounded theory research.

**Conclusion:** The original review identified some important points, particularly that researchers should use grounded theory as a methodology. Researchers in sport and exercise psychology should embrace such criticism and strive to improve their use of grounded theory methodology. To assist with this process we presented a list of tips for optimal conditions for planning grounded theory studies.

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As researchers in the area of sport and exercise psychology, we welcomed Professor Mike Weed's critique of grounded theory research in our discipline (Weed, 2009). The purposes of this paper were to respond to Weed's article (which we refer to as 'the original article') and further examine the use of grounded theory methodology in sport and exercise psychology. Our objectives were to clarify and correct some issues and suggest some solutions to the valid problems identified.

We contextualize our paper by locating the recent emergence of qualitative methods and grounded theory within the broader evolution of the field of sport and exercise psychology. Writing in the first issue of *Psychology of Sport and Exercise (PSE)*, Biddle (2000) reflected there has been a fairly rapid expansion of specialist journals in the area and the field has also become more international, evidenced by the emergence of international editorial boards and use of reviewers from around the world. Despite this growth and diversity, a small number of research perspectives and designs have dominated the literature. For example, Conroy, Kaye, and Schantz (2008) coded articles published in the first 26

volumes of *Journal of Sport & Exercise Psychology (JSEP)*. They found that over the 26-year period an average 84% of articles were original empirical reports. Of those empirical reports, approximately 93% used quantitative data. Compared to fields such as nursing, we are a long way behind in the use and sophistication of qualitative research.

However, the use of qualitative research in sport and exercise psychology has grown over the past few decades. Culver, Gilbert, and Trudel (2003) examined qualitative studies published in the leading sport and exercise psychology journals between 1990 and 1999. Having identified 84 articles that used qualitative data, these studies were primarily characterized by the use of one-time interviews and inter-rater reliability tests to ensure the consistency of analysis. Brustad (2008) suggested that the reliance on a few types of qualitative methods or techniques (e.g., interview, content analysis, etc.) limits knowledge generation, and noted that a more diverse range of qualitative methodologies are starting to be published, including grounded theory. Therefore, qualitative research in general, and grounded theory in particular, are relatively new research approaches in our field that are now being used more regularly. By critically examining methodological issues in published grounded theory studies we hope to help advance the methodological sophistication of research in our the field.

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## Grounded theory research in sport and exercise psychology

In the original article studies published between 2000 and 2008 in the four sport and exercise psychology journals with the highest impact factors in the year 2007 were reviewed. These journals were *PSE*, *JSEP*, *Journal of Applied Sport Psychology (JASP)*, and *The Sport Psychologist (TSP)*. The search term “grounded theory” was used to examine “the electronic archives” of the journals (Weed, 2009, p. 503). This search produced 12 articles. Inclusion/exclusion criteria were not reported, but it was claimed the studies represented “research labeled grounded theory in sport and exercise psychology” (p. 503).

We conducted several searches of the sport psychology literature to confirm the evidence base (Fig. 1). The first author conducted a Boolean search of Sport Discus on June 4, 2009, using the keywords “grounded theory” (all text field selected), and “sport psychology” (no field selected) or “exercise psychology” (no field selected) limited from January 2000 to December 2008 and peer reviewed (scholarly) articles only. The initial search returned 1191 hits. Changing the Boolean operators and conducting separate searches for sport psychology and exercise psychology refined the search. Hence, a follow up search was run (June 4, 2009) using the keywords “grounded theory” (all text field selected), and “sport psychology” (no field selected) and this produced 27 hits. A third search was run (June 4, 2009) using the keywords “grounded theory” (all text field selected) and “exercise psychology” (no field selected) which produced 30 hits. For thoroughness, and to include articles that may not be indexed in Sport Discus, a Google Advanced Scholar search was conducted limited to 2000–2008 with ‘all of the words’ “sport psychology” ‘the exact phrase’ “grounded theory” and ‘at least one of the words’ “qualitative” (slightly different search terms were used because Sport Discus and Google Advanced Scholar have different search parameters). This produced 253 hits. The same Google Advanced Scholar search was conducted using “exercise psychology” in place of “sport psychology.” This search produced 175

hits. These search procedures were replicated by the second author on June 6, 2009 and yielded identical results.

Titles and abstracts from all searches were reviewed for relevance, and all theses/dissertations, conference abstracts/proceedings, clearly irrelevant studies (e.g., not sport and exercise psychology, not qualitative data), and articles returned more than once in the respective searches were immediately removed. Articles (including borderline cases in which it was difficult to establish from title/abstract whether the studies used grounded theory) were obtained and examined. We included articles if (a) the authors had directly claimed the use of grounded theory in the text and (b) there were multiple references to grounded theory methodology techniques. Studies that did not meet these criteria were excluded from our analysis, with the exception of those studies included in the original article.

Our search revealed two issues. First, relevant manuscripts *within* the four journals searched in the original article were not included in the analysis. For example, Dionigi (2007) published a study in *JSEP* examining older adults’ beliefs about the psychological benefits of resistance training. She used the term theoretical sampling, alluded to the iterative process by describing interaction of data collection and analysis, the constant comparative method, coding, and referred to the use of theory in her analysis. These are all techniques that can be considered core characteristics of grounded theory (Weed, 2009). The following studies were also excluded from the original article: Concepcion and Ebbeck’s (2005) study of physical activity experiences among survivors of domestic violence published in *JSEP*; Gucciardi, Gordon, and Dimmock’s (2008) *JASP* study of mental toughness in Australian Rules football players; Buman, Omlil, Giacobbi, and Brewer’s (2008) study of ‘Hitting the Wall’ in marathon runners; and, Giacobbi et al.’s (2004) *TSP* study of stress and coping among university athletes. All refer to multiple aspects of grounded theory and were published in the four journals reviewed in the original article; presumably these studies should have been included in the original article. To summarize, the original article reported 12 grounded theory studies across the four journals. If we

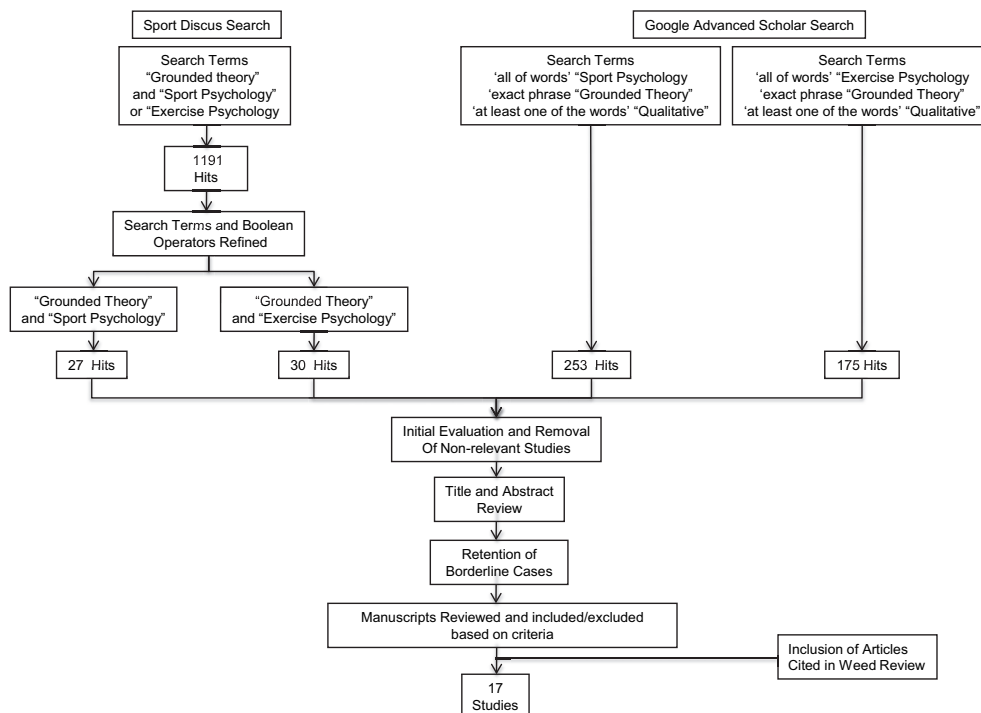


Fig. 1. Flow diagram of search and retrieval strategies. Note. Original searches were completed by the first author on June 4th 2009 and then replicated by the second author on June 6th 2009. All searches produced identical results.

included all 12 of the studies used, our search produced 17 studies. Thus, the original search produced an incomplete knowledge base upon which the critique of grounded theory was based.

Second, we also questioned the inclusion/exclusion criteria used in the original article. For example, a study by Pummell, Harwood, and Lavallee (2008) was included, the aim of which was to “examine perceptions of within-career transitions” (p. 427) among equestrian event riders. Pummell et al. reported that microanalysis was used (essentially as a content analysis technique)<sup>1</sup> and that themes were derived from the data rather than forced onto the data, appropriately citing Strauss and Corbin (1998) as sources. However, they made no claim that it was meant to be a grounded theory study. Our search revealed numerous other examples (that were not included in the original article) in which the authors basically did a content analysis but cited a grounded theory source (these studies were not included in our review). For example, Grindstaff and Fisher (2006) cited Strauss and Corbin (1998) but did content analysis in the absence of other grounded theory techniques. Tracey (2003) stated “The analysis was also based on the general concept of grounded theory proposed by Glaser and Strauss (1967)” (p. 282) but again only completed a basic content analysis. It is not clear why the Pummell et al. study would be included in the original article but not the studies by Grindstaff and Fisher and Tracey as all three referred to grounded theory.<sup>2</sup>

The search completed in the original article was incomplete. Furthermore, by limiting the search to four journals, other studies published in respected multidisciplinary journals were not included. These limitations undermined some of the arguments put forward in Weed's paper. For example, based on the 12 articles obtained, it was reported that 32 of the 34 authors of the 12 studies identified had only contributed to one paper. This led Weed to conclude there was no identifiable “cadre of authors” which may be indicative of “no real commitment to or interest in the appropriate application of grounded theory in sport and exercise psychology” (p. 503). But this conclusion was based on an incomplete review of the four journals studied and did not include articles published by the same researchers beyond these four journals. The danger of forwarding arguments based on incomplete evidence is creating a strawperson argument (i.e., an argument based on misrepresentation; for an example in sport and exercise psychology, see Wankel, 1997). If the evidence is incomplete, the conclusions drawn may be either unfounded or even more prevalent than supposed.

Evidence contradicted the conclusion that researchers in sport and exercise psychology have no real commitment to or interest in the appropriate application of grounded theory because they have only published one or two studies. For example, Bringer et al. published a precursor to their TSP study (Bringer, Brackenridge, & Johnston, 2006) which described their original grounded theory in the *Journal of Sexual Aggression* (Bringer, Brackenridge, & Johnston,

2002), as well as two methodological papers on the use of computer software programs when developing grounded theories in the journals *Qualitative Research* (Bringer, Brackenridge, & Johnston, 2004) and *Field Methods* (Bringer, Johnston, & Brackenridge, 2006). Similarly, Giacobbi has been involved on several papers that used grounded theory methods (e.g., Buman et al., 2008; Giacobbi, Hausenblas, Fallon, & Hall, 2003; Giacobbi et al., 2004; Morgan & Giacobbi, 2006), as has Holt (e.g., Corbin & Holt, 2005; Holt & Dunn, 2004; Holt, Tamminen, Black, Sehn, & Wall, 2008).

### The methods police

Weed (2009) argued grounded theory should be used as a total methodology and that researchers should not simply pick and mix different methods (techniques). We tend to agree with him. If researchers simply pick methods at will and claim to have conducted grounded theory research they may unwittingly end up creating their own, unproven, methodologies. Eight core characteristics of a grounded theory (an iterative process, theoretical sampling, theoretical sensitivity, codes, memos, and concepts, constant comparison, theoretical saturation, fit, work, relevance and modifiability, and substantive theory) were proposed in the original article. This is fair list of characteristics and certainly captures the essence of most variants of the methodology (also see Corbin & Strauss, 1990, 2008).

Such criteria lists may be useful for judging the quality of grounded theory research when carefully applied to published studies. However, combining such criteria to provide a summative yes/no evaluation of whether or not the studies are grounded theories at all (see Table 1 of Weed, 2009) was, in our view, too simplistic. For example, it was reported as ‘unclear’ whether Holt and Dunn's (2004) study of talent development had sufficient conditions for grounded theory. Yet a commentary on this study has been published in the *Sage Research Methods in the Social Sciences* text in a chapter titled ‘grounded theory’ (Corbin & Holt, 2005). Furthermore, one (of the two) studies identified in the original article as meeting sufficient conditions for grounded theory was Sabiston, McDonough, and Crocker's (2007) analysis of breast cancer survivors' involvement in dragon boat racing. However, Sabiston et al. reported that they were unable to engage in a fully iterative process because of the logistical sampling demands they faced, and commented “it is recognized that this is a limitation of this study; however, every effort was made to be as close to the intent of these methods as possible” (p. 423). This was a good example of fair reporting by the authors, but it was hard to establish why one would conclude that this study met all the conditions for grounded theory when the authors themselves acknowledged this limitation.

Although the list of eight characteristics was fair, a summative application of such criteria to studies contrasts with the thinking of the originators of one variant of grounded theory. Corbin and Strauss (2008, pp. 305–307) provided 10 criteria for judging the quality of research using their methodology. But, Corbin (in Corbin & Strauss, 2008, p. 305) noted “I do not believe that all these criteria must be applied to all qualitative research methods or even to other grounded theory methods. Making judgments about research is difficult because so much depends on who is doing the research, its purpose, and the method that is used.” Here, Corbin recognized the problem of even applying her criteria to other studies using grounded theory.

In the 1990s and early 2000s debates raged in the area of nursing research about how to evaluate and judge grounded theory. For example, Wilson and Hutchinson (1996) published an article titled ‘Methodological mistakes in grounded theory’ in which they went so far as to suggest that any published grounded theory must include a visual diagram for it to be considered

<sup>1</sup> Although there are no universally agreed upon terms to describe the varieties of basic qualitative analysis, content analysis has been defined as “referring to any qualitative data reduction... that takes a volume of qualitative material and attempts to identify core consistencies and meanings. Case studies, for example, can be content analyzed” (Patton, 2002, p. 453). In the sport and exercise psychology literature, the results of a content analysis are often presented as a hierarchical list of themes and sub-themes. This could be considered a descriptive type of analysis because it does not include the theory-building attempts associated with grounded theory methodology.

<sup>2</sup> We included the Pummell et al. (2008) study in Table 1 for consistency with the Weed (2009) article and to show that it used few techniques associated with grounded theory. But we acknowledge that the authors did not actually set out to create a grounded theory. Similarly, we included the Torregrosa, Boixadós, Valiente, and Cruz (2004) study because it was in Weed's review. We excluded the Tracey (2003) and Grindstaff and Fisher (2006) articles because they did not meet our inclusion criteria, nor were they assessed in the original article.

**Table 1**  
Evaluating grounded theories in sport and exercise psychology.

Criteria for grounded theory (Weed, 2009)									
Authors	Topic	Iterative process <sup>a</sup>	Theoretical sampling <sup>b</sup>	Theoretical sensitivity <sup>c</sup>	Codes, memos & concepts <sup>d</sup>	Constant comparison <sup>e</sup>	Theoretical saturation <sup>f</sup>	Fit, work, relevance, modifiability <sup>g</sup>	Substantive theory <sup>h</sup>
Bishop, Karageorghis, and Loizou (2007)	Sport players' use of music to affect emotion	Some: Pilot interviews prior to main interviews (p. 587). Early analysis of interview data (p. 591)	No: Convenience sample (p. 587); purposeful sample (p. 588)	Sensitizing concepts used to create interview guide (p. 588)	Yes (no memos) (p. 591)	Partial; Applied to data & concepts, not literature) (p. 591)	Claimed (p. 591)	Not Addressed	Yes (p. 593)
Bringer, Brackenridge, et al. (2006) and Bringer, Johnston, et al. (2006)	Coaches' perceptions of sexual exploitation in sport	Some: Continuation of new data collection/analysis based on previous GT study (p. 468)	Claimed. Used purposeful sampling for this phase as part of wider theoretical sampling (p. 468)	Yes (concepts from previous study used in analysis, p. 469).	Yes (full data analysis reported in previous articles)	Partially reported (comparisons to literature)	Not claimed	Modifiability and need for future research cited (pp. 476–477)	Yes (p. 471)
Buman et al. (2008)	Hitting the wall in marathon running	Some: Focus group convened after initial sampling (p. 288)	No: Purposeful sampling (online survey)	Sensitizing concepts used to create interview guide (p. 286) and during analysis (p. 287)	Coding only (p. 287)	Not explicitly cited but comparison between data implied (p. 287) Reference to existing theory (p. 297)	Not claimed: Implied based on no new data arising from focus group (p. 288)	Not addressed	No: Thematic description
Concepcion and Ebbeck (2005)	Physical activity experiences among survivors of domestic violence	Yes: Repeated interviews (p. 201), limited member checking (p. 202)	No: Purposeful sample (p. 200)	Theory presented but role in guiding initial data collection (and later analysis) not specified.	Coding only (p. 202)	Not explicitly cited but comparison between data and concepts implied (p. 202)	Not claimed (limitation of small sample cited, p. 208)	Not addressed	No: Thematic description
Dionigi (2007)	Exercise among older adults	Yes: Multiple interviews, preliminary analysis between interviews (p. 729)	No: Purposeful sampling (pp. 727–728). [Analysis refocused interviews with same original sample]	Theory used in latter part of analysis to interpret themes	Yes (no memos) (pp. 730–731)	Yes (p. 729)	Claimed (p. 730)	Not addressed	No: Thematic description
Eccles et al. (2002) <sup>i</sup>	Expert cognition in elite orienteering	Very limited interaction (acknowledged, pp. 73–74)	Unclear (appears to be purposeful sampling, pp. 72–74)	Theoretical orientation specified and delayed literature review completed (p. 71)	Yes (p. 72)	Yes (p. 72)	Claimed (p. 74)	Not addressed: But did report that research needed to test the theory (p. 86)	Yes (p. 75)
Giacobbi et al. (2003)	Exercise imagery	No	No (no sampling strategy cited)	Theory used to create interview guide (p. 162). Sensitizing concepts used during analysis (pp. 163–164)	Yes (p. 163)	Yes (pp. 163–164)	Not claimed	Not addressed	No: Thematic description, but 'Conceptual framework' claimed (p. 166)
Giacobbi et al. (2004)	Stress and coping during transition to university	Yes: Focus groups and individual interviews with early analysis (pp. 4–5)	No: Convenience and purposeful sample claimed (p. 4)	Theory used to create interview guide (p. 5). Sensitizing concepts used during analysis (p. 6).	Yes (pp. 6–7)	Yes (p. 6)	Not claimed	Not addressed	Yes (p. 13)
Gucciardi et al. (2008)	Mental toughness in Australian football	Yes: Claimed on p. 265 but not explained in detail	Unclear: (appears to be purposeful sample. p. 265)	Theory used to create interview guide (p. 265)	Yes (pp. 266–267)	Yes (p. 266)	Claimed (p. 265 & p. 266)	Not addressed Relevance of "emerging model" indirectly addressed (p. 267)	Yes (p. 268)
Holt and Dunn (2004)	Talent development in soccer	Yes: Three fieldwork trips (pp. 202–203) and member checking with new sample (pp. 205–206)	Yes (pp. 202–203)	Theory used in analysis (pp. 204–205 & p. 213 [delayed lit review])	Yes (pp. 203–205)	Yes (pp. 203–204)	Addressed but not claimed (pp. 202–203)	Modifiability indirectly addressed (p. 216)	Yes (p. 206).

Holt et al. (2008)	Parental involvement in youth sport	Yes: Two phases of fieldwork (p. 667)	Yes (pp. 667–668)	Conceptual context described (p. 665) and theory used during analysis (p. 672)	Yes (pp. 671–672)	Yes (cited but not explained, p. 672)	Addressed but not claimed (p. 668). “Further saturation” of concepts claimed (p. 670)	Not addressed.	Yes (p. 681)
Morgan and Giacobbi (2006)	Talent development and social support in elite athletes	Simultaneous interaction of data collection and analysis claimed (p. 300) but not explained	No: Purposeful sampling (p. 298)	Sensitizing concepts used during analysis (p. 300)	Yes (p. 300)	Yes (p. 300)	Claimed (p. 300)	Not addressed	Yes (p. 302 & p. 306)
Pummell et al. (2008) <sup>j</sup>	Sport career development/transition in elite athletes	No	No: Purposeful sampling (p. 431)	Interview guide based on literature	Claimed use of microanalysis only (p. 433)	No: Comparison of data to existing literature (p. 433)	Not claimed	Not addressed	No: Thematic description
Rees and Hardy (2000)	Social support experiences of elite athletes	No	No: Purposeful sampling (p. 329)	Interview guide based on literature. Indirectly referred to sensitizing concepts (p. 331)	Yes (pp. 331–332)	Yes (pp. 331–332)	Not claimed	Not addressed	No: Thematic description
Sabiston et al. (2007)	Psychosocial experiences of breast cancer survivors in a sport programme	Yes: But limited interaction, as noted (p. 423)	No: Purposeful sampling (p. 422)	Sensitizing concepts (p. 423) and use of theory in analysis (p. 424).	Yes (p. 423)	Yes (p. 423)	Not claimed	Cited credibility, originality, resonance, and usefulness (Charmaz, 2005) (p. 436)	Partially; Thematic description used to modify existing theory (p. 432)
Seve et al. (2006)	Activity during matches of elite sports people	Not explained	No	No	No Coded “Elementary Units of Meaning” (p. 63)	No Claim comparison with data from previous studies (pp. 63–64)	Not claimed	Addressed “authenticity and relevance of model” (p. 64)	Yes (p. 66)
Torregrosa et al. (2004) <sup>k</sup>	Elite athletes’ images of retirement	No	No	No	No Claimed “list of codes” (p. 37)	No	No	No	No

<sup>a</sup> Was there interaction between data collection and analysis?

<sup>b</sup> Was theoretical sampling used during the data collection/analysis process to redirect sampling?

<sup>c</sup> Did authors explain what guided initial data collection, what sensitizing concepts were used, and/or how theory was used in analysis?

<sup>d</sup> Did the authors use codes, memos, and concepts in their analysis?

<sup>e</sup> Did the authors use constant comparison (data to data, codes, concepts, literature)?

<sup>f</sup> Did the authors claim theoretical saturation?

<sup>g</sup> Did the authors assess the theory they produced using the concepts of fit, work, relevance, and modifiability?

<sup>h</sup> Did the authors present a substantive level theory?

<sup>i</sup> It was exceptionally difficult to evaluate the extent to which grounded theory methodology was used in this study because the description of the methodology was provided separately to the description of the methods.

<sup>j</sup> The authors did not appear to claim this study as a grounded theory.

<sup>k</sup> Grounded theory was listed as a keyword for this study and the term was used in the abstract, but grounded theory was not referred to at all in main text.



grounded theory. Reflecting on such issues, Chamberlain (2000) remarked that some authors took a fundamentalist stance and positioned themselves as the ‘methods police.’ Perhaps Weed’s review, although offered in the spirit of providing a constructive critique, actually reflected this idea of a researcher assuming the role of the methods police for grounded theory research in sport and exercise psychology. But there simply cannot be a single gatekeeper or viewpoint that does justice to such a diverse methodology (see Bryant & Charmaz, 2007; Morse et al., 2009).

### Characteristics of grounded theory studies

Providing a balanced view of the literature and precise analysis of grounded theory studies in sport and exercise psychology may be one way to improve the use of grounded theory. We created Table 1, in which we applied the eight core characteristics of grounded theory to the studies we identified from our search. Rather than positioning ourselves as the methods police, following Corbin and Strauss (2008), we present evidence of our analyses and offer the reader the opportunity to evaluate the extent to which authors embraced grounded theory methodology and judge the quality of these studies. We have clarified and reinforced some of the more valid criticisms Weed presented and then attempted to offer some solutions to the concerns identified.

#### An iterative process

Grounded theory involves an iterative process based on the interaction of data collection and analysis, facilitated via theoretical sampling. That is, data analysis begins as soon as the first data are collected, and there is an interaction between data collection and analysis throughout the study. Grounded theories in sport and exercise psychology varied widely in the extent to which an iterative process was employed (Table 1). In some studies data collection and analysis were clearly intertwined, with initial analysis leading to more data collection, further theoretical sampling, and subsequent analysis. For example, Holt et al. (2008) used a two-phase study that had the hallmarks of this iterative process. However, in several other cases there was only ‘some’ iteration which consisted of researchers engaging in a concurrent process of data collection and analysis (i.e., data analysis started early but it did not redirect data collection). In some cases interview guides were refined from early analysis. Three studies which claimed grounded theory did not report any iterative process (Giacobbi et al., 2003; Rees & Hardy, 2000; Seve, Poizat, Saury, & Durand, 2006) which is a limitation because it constrained researchers’ ability to adequately engage in the other analytic techniques, such as theoretical sampling and constant comparison. The interaction of data collection and analysis from the moment data collection begins is a classic hallmark of grounded theory studies.

#### Theoretical sampling

Theoretical sampling is “sampling on the basis of emerging concepts” (Strauss & Corbin, 1998, p. 73). As data collection and analysis interact they influence the on-going sampling process. In short, rather than just refine the interview guide, theoretical sampling drives the iterative process and is associated with sampling new people and settings to advance theoretical saturation. Although some studies embraced an iterative approach (e.g., Bringer, Brackenridge, et al., 2006; Bringer, Johnston, et al., 2006; Concepcion & Ebbeck, 2005; Holt et al., 2008) our analysis revealed that the absence of theoretical sampling was a major constraint of grounded theory research in sport and exercise psychology (Table 1). Many studies mistakenly used some form of

purposeful sampling based on criteria selected *a priori*. Whereas this is acceptable in some forms of qualitative research (see Patton, 2002), it undermined the iterative process and theory-building aspects of grounded theory.

Bruce (2007) suggested that whereas grounded theory analysis procedures have been well documented, the challenges of sampling and data collection have not been fully addressed. She provided two practical suggestions regarding sampling which may be useful for sport and exercise psychology researchers; the funnel and hourglass sampling strategies (referring to the visual shape of the sampling strategies when they are diagrammed). The funnel strategy drives data collection and analysis to initially obtain a very broad selection of participants’ experiences and then the sampling, driven by concepts identified through analysis, slowly focuses in on key participants, events, and concepts. The hourglass strategy, while also starting broad to gain a range of participants’ experiences, becomes more focused earlier in the study. Then, through the iterative process of data collection and analysis, researchers may realize the need to broaden their initial sampling.

#### Theoretical sensitivity

Weed (2009) criticized researchers who mistakenly believed in a *tabula rasa* approach of entering the field with no knowledge of the research areas and also criticized researchers who approached a study with theoretical frameworks in mind. Our analysis showed that researchers have generally done a good job of explaining the ‘points of departure’ for their work (Table 1). Nearly all the studies had thorough reviews of literature, most explained how the interview guides were created, and several (e.g., Giacobbi et al., 2003, 2004; Sabiston et al., 2007) refer to the use of sensitizing concepts.

Weed argued that Holt et al.’s (2008) study of parental involvement in sport compromised Glaser’s (1978) view of theoretical sensitivity because the first line of the abstract read “[b]ased on ecological systems theory” (p. 663). But later in the article Holt et al. explained that (p. 665):

The conceptual context for a qualitative study represents the theories and findings upon which a study is based (Maxwell, 1996). Given that very few studies, and virtually no theories, have sought to identify and explain constructs of parental behaviors and verbalizations in youth sport contexts, we did not endeavor to explicitly test theory in the present study. Rather, we used relevant previous theories to provide the conceptual context for this study with a view to creating some new insights about parental involvement in youth sport.

They also explained how theory was used to refine the latter stages of the analysis. Thus, theory was used to guide the design of the study and sensitize the researchers to the research context, which is consistent with Strauss and Corbin (1998) views about the use of theory in grounded theory. This example highlighted the problem of applying a Glaserian view of grounded theory to a study that used a Straussian approach.

Although not specific to grounded theory, Sandelowski (1993) provided an excellent article on the use of theory in qualitative research. She recognized that theory can be introduced to qualitative studies at various points in the research process. Theory may inform the conceptual context and research questions, it may be used at some point during the analysis, or even as late as the discussion/interpretation of the results. The key issue, she argued, is that it is incumbent on researchers to clearly articulate their use of theory within a qualitative study. Creswell (2009) also provided a chapter on using theory in qualitative studies. These resources provide good advice for grounded theorists in sport and exercise psychology.

### Codes, memos, and concepts

Our indicated in Table 1, researchers in sport and exercise psychology have demonstrated a strong commitment to the clear and detailed explanation of coding techniques. Weed observed that coding does not define grounded theory methodology. Essentially he argued for researchers to move from descriptive coding to more interpretive concept (and presumably theory) building analysis. We expand on this point by offering the suggestion that grounded theorists should *think theoretically from the start* of their study and not rely on the coding techniques to somehow produce a theory. Theorists produce theories through their diligent use of certain analytic techniques that help them engage in creative modes of thinking (for an example of some challenges a neophyte grounded theorist experienced while trying to think theoretically from the start of a study, see Corbin & Holt, 2005).

### Constant comparison

Constant comparison involves “comparing incident with incident... in order to classify data. As the researcher moves along with analysis, each incident in the data is compared with other incidents for similarities and differences” (Corbin & Strauss, 2008, p. 73). In addition to comparing data with data, data can also be compared with concepts, comparisons can be made between concepts, and with theory. Weed made a valid criticism suggesting that sport and exercise psychology studies often conduct only ‘partial’ constant comparison. Our analysis showed that many studies were limited in the extent to which they embraced an iterative process. Therefore, if studies lacked the iterative process of data collection and analysis, the full use of constant comparison would be highly restricted. Table 1 revealed those studies that lack a high level of iterative process but claimed the use of constant comparison. By planning for interaction between data collection and analysis researchers can more fully embrace the concept of constant comparison.

### Theoretical saturation

Theoretical saturation is “a matter of reaching the point in the research where collecting new data seems counterproductive; the ‘new’ that is uncovered does not add that much more to the explanation at this time” (Strauss & Corbin, 1998, p. 136). Weed suggested that seven of the 12 studies reviewed did not even mention theoretical saturation. We found that five studies claimed theoretical saturation, and one (Buman et al., 2008, which was not included in the original article) implied that theoretical saturation was obtained because new data did not arise from focus groups. Two further studies (Holt & Dunn, 2004; Holt et al., 2008) addressed the issue of theoretical saturation but did not outright claim it. Therefore, the point that theoretical saturation has received limited attention was fair. But the bigger concern is how researchers can assess issues of theoretical saturation.

To provide some guidance regarding how researchers might address theoretical saturation we draw on a useful editorial of *Qualitative Health Research* written by Morse (1995). She identified two important questions: How does the researcher recognize when the results are complete? How does the researcher know when enough data are enough? The answers, she argued, are based on the careful and theoretically justified delineation of the sample. The ‘tighter’ and more restrictive the sample and more clearly delineated the domain, the faster saturation will be achieved. She proposed five principles of saturation for qualitative research: (a) select a cohesive sample, which will provide faster saturation but less generalizability; (b) saturation will be achieved faster if theoretical sampling is used; (c) sample all variations in the data until each negative case

perspective is saturated; (d) saturated data are full and complete and the theory does not have gaps; and (e) the more complete the theoretical saturation the easier it is to develop a comprehensive theoretical model. Based on this perspective, the principles of theoretical sampling must be followed to fully explore a phenomenon and reach *adequate* theoretical saturation. This again highlighted the need for sport and exercise psychology researchers to more fully embrace theoretical sampling and an iterative process between data collection and analysis.

### Fit, work, relevance, and modifiability

Fit, work, relevance, and modifiability are Glaser and Strauss (1967) original ways to judge the theory, which is the *outcome* of a study. None of the studies we reviewed fully embraced these criteria for assessing a grounded theory (Table 1) – although Sabiston et al. (2007) referred to criteria specifically associated with Charmaz’s variant of grounded theory. Researchers would be well advised to think about how their final grounded theories should be judged because this element is a clear weakness of the current sport and exercise psychology literature. But there are also ways of improving the quality of the research *process* in grounded theory. We would like to highlight that current thinking in the qualitative methodology literature is to move beyond ‘post-hoc’ evaluation of research *outcomes* and focus more on methodological rigor within research *processes* (Morse, Barrett, Mayan, Olson, & Spiers, 2002).

Contrary to Weed (and, it should be noted, Corbin & Strauss, 2008), Morse et al. (2002) argued that reliability and validity<sup>3</sup> remain appropriate concepts for attaining rigor within qualitative research studies. They suggested researchers should implement verification and self-correction strategies during the conduct of the inquiry itself. To them, ‘post-hoc evaluation’ of research is the extent to which reviewers have confidence in the researchers’ ability to conduct research following established norms (e.g., audit trails, memos, member checks, etc.). They suggested that such post-hoc techniques (which could also include assessing the outcome of a grounded theory) do not necessarily improve rigor *within* the research process. Incorporating verification strategies throughout the research process can help enhance validity and reliability by identifying and correcting errors before they are built into a developing model and subvert the analysis. Such verification strategies include investigator responsiveness, methodological coherence, appropriate sampling with respect to the research topic, collecting and analyzing data concurrently, thinking theoretically, and using theory development as the outcome of the research process rather than a framework for moving the analysis along. Taken together, these verification strategies incrementally and interactively build reliability and validity and help ensure rigor. Including verification strategies within the research process along with ways to evaluate the grounded theory outcome would likely strengthen research in our discipline.

<sup>3</sup> There has been considerable debate concerning ways in which qualitative studies can be judged. It is beyond the scope of the current manuscript to extensively engage in this debate and more complete discussions of key issues in sport and exercise psychology are provided by Sparkes (1998) and Sparkes and Smith (2009). These authors highlighted that a number of competing terms for validity and reliability are used in the qualitative literature, and even the very use of these two terms is questionable because they are derived from quantitative or post-positivistic research. They suggested that rather than develop and apply a universal and permanent set of ‘alternate’ criteria for judging qualitative research (i.e., a criteriological perspective), criteria can be viewed as a list of characterizing traits of good research, which are applied to specific studies and bound by time and place (i.e., a relativist perspective). Relating these issues to the current paper, we suggest that rather than rigidly applying standard criteria for judging different types of grounded theory studies, some core characterizing traits of quality research can be identified and thoughtfully applied within the parameters of a given study.

### Substantive theory

Substantive theories are relatively specific to a group and/or a place, and therefore apply most readily to issues within a particular discipline (Strauss & Corbin, 1998). On the other hand, it is possible to use grounded theory to create more abstract and formal theories, which are less specific to group and place and apply to a wider range of issues across disciplines. Weed (2009) identified that only two of the studies reviewed mention substantive theory. Whether the specific term 'substantive theory' is mentioned is moot; the point is whether substantive theories are actually presented. We found nine studies presented a type of substantive theory (Table 1). Nonetheless, we agree with the suggestion forwarded in the original article that grounded theories in sport and exercise psychology are no more than substantive level theories. In fact, a range of theories have been adapted from other psychological disciplines and applied to sport and exercise psychology. For example, Sabiston et al. (2007) used a theory of post-traumatic growth (Tedeschi & Calhoun, 2004) from social psychology to interpret the findings of their study and create a grounded theory of positive psychological growth among breast cancer survivors involved in dragon boat racing.

As grounded theory research in sport and exercise psychology grows we may see attempts to expand the generality of existing grounded theories. But a more pressing concern is when researchers claim the use of grounded theory but present only a thematic description of results.<sup>4</sup> The advice to researchers is to embrace the theory-building and interpretive aspects of grounded theory and seek to produce theories not just thematic descriptions. Perhaps we should strive to produce substantive theories first and then later seek to verify these theories across settings and populations.

### Specifying types of grounded theory

As suggested in the original article, it is important researchers recognize there are multiple forms of grounded theory methodology (with three primary approaches being Straussarian, Glaserian, and Charmaz's constructionist approach). The 'classic split' is reflected by the fundamental differences between Straussarian and Glaserian approaches and the emergence versus forcing debate. Glaser (1992) suggested that the analytic tools in Strauss' approach 'force' the data, and instead argued that theory emerges from the data. But, the notion of emergence implies that "a theory is embedded in the data and it is the task of the analyst to discover what the theory is" (Corbin & Holt, 2005, p. 49). The emergence perspective therefore follows the idea there is 'one truth' in the data, whereas the Straussarian view acknowledges there are multiple realities and multiple ways of interpreting a data set.

Given these subtle, but important, differences, researchers would be well advised to stick with one approach or another rather than trying to meld the variants. Weed claimed that only two studies he reviewed 'hint' at the fact different variants of grounded theory exist (Eccles, Walsh, & Ingledew, 2002; Holt & Dunn, 2004) and concluded that researchers have failed "to even consider which variant of the approach is being used" or "simply haven't understood the methodologies and methods" (p. 508). This conclusion was tenuous because it was based on the omission of a sentence or two in a research article. Researchers should evaluate the overall meaning of the method sections rather than searching for a sentence that identifies which variant was used. For example, Bringer, Brackenridge, et al. (2006) and Bringer, Johnston, et al. (2006) neither provided a review of the variants of grounded theory nor

explicitly stated 'we used Strauss and Corbin's approach.' But Bringer et al. clearly followed a Straussarian approach, evidenced by the fact that there were five references to Strauss and Corbin (1998) in their methods section (there was one reference to the original Glaser & Strauss, 1967 text which provided appropriate historical context). Morgan and Giacobbi (2006) clearly used Charmaz's version of grounded theory (citing her work four times in the method). It would be unrealistic for authors to historically review each type of grounded theory in an empirical article. These are pre-research decisions. Our advice is that in the published article it should be clear to the reader which variant of grounded theory was used. Authors need only show that their approach was appropriate given the research questions posed.

### Creating optimal conditions for grounded theory studies

One of our concerns with the original article was that it did not provide much in the way of suggestions for how grounded theory research can be improved. Following Bruce (2007) we have provided some practical suggestions which may help to create optimal conditions for planning grounded theory studies. These are not fixed, prescriptive criteria but a flexible list offered as tips that may be useful (for perspectives on judging research quality in qualitative research, also see Sparkes, 1998; Sparkes & Smith, 2009).

1. In the planning phase, consider the variants of grounded theory and select the approach that is most relevant to the student/study in question. At this point it may be useful to consider to which variant of grounded theory methodology one's philosophical orientation is best suited.
2. Theses and Dissertations usually require proposals and that students demonstrate an adequate grasp of the literature before they can pursue their research projects. Rather than establishing a theory to test, students can create a conceptual context and identify a series of sensitizing concepts which provide the 'launching pad' for their studies. One strategy here could be for students to focus on the sport and exercise psychology literature in their review/proposal. Then, during the iterative process of data collection and analysis, they may be led to the parent disciplines of psychology or health research to assist with their theoretical interpretations.
3. Plan for the interaction between data collection and analysis. Anticipate that data collection will take twice as long as you think it will. For this reason, the first author now 'dissuades' Masters level students from embarking on grounded theory studies.
4. Remember that some negotiation with institutional ethics boards may be required. We have found that ethics boards can sometimes have trouble with the idea that sampling will change as the study progresses. One specific practical concern is that the interview guides can change over the course of the study. To address research ethics boards concerns we have found it useful upon the initial submission of a study to list all the potential questions that may be asked. Then, if substantially new areas of questioning arise, we send amendments to the ethics board chair. We do not inundate her/him with minor wording changes of course. The same strategy can be used when researchers fully embrace theoretical sampling. Research ethics boards must be contacted if researchers need to sample individuals not identified in their original submissions. For example, if a study began by sampling coaches but analysis was redirected via theoretical sampling to include referees, then research ethics boards should be contacted.
5. Think theoretically from the start. Encourage students to realize that the point of using grounded theory methodology is to create a grounded theory. Grounded theorists should strive

<sup>4</sup> The exception here is Seve et al.'s (2006) study which barely used any grounded theory techniques but did actually present a substantive grounded theory.



to produce theoretical models rather than only a hierarchical list of descriptive themes and sub-themes.

- Build verification techniques into the research process and be self-correcting to help ensure a high degree of methodological rigor, but also consider how the grounded theory outcome can be judged.

## Conclusion

As we have shown, Weed's paper contained some problems in that the search strategy was poorly executed, the breadth of the literature was not fully addressed, and detailed analysis of the studies reviewed was not provided. But we encourage our colleagues in sport and exercise psychology not to dismiss Weed's article. As we have shown, some valid points were raised. In conclusion, we hope that Weed's original article along with the commentary we provide will be useful advancing the methodological sophistication of grounded theory research in sport and exercise psychology.

## Author note

NLH was supported by a Population Health Investigator Award from the Alberta Heritage Foundation for Medical Research and KAT by a Doctoral Scholarship from the Social Sciences and Humanities Research Council of Canada.

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