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Considerations for making informed choices about engaging in open qualitative research

Katherine A. Tamminen [ID][a], A. Bundon [ID][b], B. Smith [ID][c], M. H. McDonough [ID][d], Z. A. Poucher [ID][a] and M. Atkinson[a]

[a]Faculty of Kinesiology and Physical Education, University of Toronto, Toronto, Canada; [b]School of Kinesiology, The University of British Columbia, Vancouver, Canada; [c]Department of Sport and Exercise Sciences, Durham University, Durham, UK; [d]Faculty of Kinesiology, University of Calgary, Calgary, Canada

ABSTRACT

There is currently little guidance that exists for researchers in the sport and exercise sciences on open qualitative research practices. The purpose of paper is to provide researchers with guidance regarding the considerations necessary for making informed decisions about engaging in open research practices within qualitative inquiry. The guidance was developed through a series of four working group meetings with experts in qualitative research and meetings with key stakeholders (study participants, journal editors, and data management experts). The wider open qualitative research literature also informed the guidance. Nine core values were first identified as underpinning the considerations for engaging in open qualitative research practices: Choice (academic freedom and participant autonomy); Plurality not replication; Flexibility and emergent design; Transparency; Relational ethics; Quality; Education; Equity; and Responsibility. Considerations for researchers are then provided in the following areas as they pertain to open science practices in qualitative inquiry: Types of Data; Types of Studies; Participant Groups; Anonymity and Confidentiality; Participant Consent; Storage and Stewardship of Qualitative Data; Knowledge Dissemination and Open Access Publications; Cost, Time, and Resources; and Preregistration of Qualitative Studies. This paper provides an initial framework for identifying considerations for engaging in open qualitative research practices. These considerations will help qualitative researchers make informed decisions about and plan for implementation of open science practices, as well as assessing the risks and benefits of open science practices in qualitative inquiry.

Open science refers to a broad movement across a number of fields of research that introduces significant changes to the ways that scientific studies are conducted, evaluated, and disseminated (Nosek et al. 2015). Open science practices include initiatives such as study pre-registration, sharing methodological procedures and datasets in online repositories (e.g., open methods and open data), and making research findings freely accessible to the public (e.g., open access publications). Founded on principles of transparency, openness, and reproducibility, the open science movement is rapidly gaining momentum, including in the psychological sciences, and especially for quantitative research (Nosek, Spies, and Motyl 2012).

Benefits of open science include increased transparency surrounding research methods and results, opportunities for collaboration between teams of researchers, and access to data for teaching and learning purposes (Haaker and Morgan-Brett 2017; McKiernan et al. 2016; Tamminen and Poucher 2018). Despite the potential benefits of open science, a number of issues and concerns have been raised by researchers engaged in qualitative inquiry about the implications of engaging in open science practices (e.g., Chauvette, Schick-Makaroff, and Molzahn 2019). Among these are concerns about ethics (particularly concerning informed consent, confidentiality, and anonymity of participants), publication and preregistration of open qualitative research, and issues surrounding the collection, storage, and stewardship of qualitative data and project materials (Bishop 2009; Irwin 2013; Tamminen and Poucher 2018). Examples of these are provided throughout this paper; however, some important concerns relate to the types of data are collected in many qualitative studies – in-depth interviews, observations, photos, audio, and textual data – and the challenge of anonymising data sufficiently so that participants cannot be deductively identified if their data were stored and shared for future use (thereby breaching confidentiality; Kaiser 2009). Furthermore, the act of removing information from datasets in an effort to anonymise participants' identities may remove important details and nuances from the participants' experiences that make the data limited or decontextualised, thus undermining the purposes of collecting qualitative data in the first place (Chauvette, Schick-Makaroff, and Molzahn 2019). While discussions of the merits and potential drawbacks of open science have increased within areas of research that are predominantly quantitative (e.g., Kwasnicka et al. 2020; Walsh et al. 2018), there has been limited discussion about open science practices in qualitative research approaches, and there are very few suggestions on whether and how to engage in open science for qualitative researchers in particular. In this paper, we aim to present a synthesis of key considerations for qualitative researchers engaging in open science practices, as well as some core values that underpin qualitative inquiry and inform the way that open science practices may be taken up and used within qualitative projects. As authors, we situate ourselves primarily within the field of sport and exercise psychology; however, the topic of open science practices applies broadly across disciplines.

One of the few papers on open science in sport and exercise psychology was a review of open science practices within published articles in the field (Tamminen and Poucher 2018). Tamminen and Poucher (2018) found that, across quantitative and qualitative studies, the primary means of engagement in open science was by making articles available via open access. In some cases, researchers provided supplementary materials to accompany their publications, but there was little evidence of researchers openly sharing their methods or data, and at the time of their review no published articles had gone through the process of preregistration and conditional acceptance within academic journals in sport and exercise psychology. This review also outlined several key issues specific to qualitative researchers, including concerns about the adoption of open science practices to promote reproducibility or replication of research analyses; the need to protect participants' anonymity and participant consent; decontextualising qualitative data as a threat to the legitimacy of re-using data for different projects; data ownership and control over access to data; and concerns about the constraints imposed by qualitative study preregistration processes (Tamminen and Poucher 2018). However, the aim of their review was not to develop guidelines for researchers engaging in open science practices. We aim to use this work as a springboard to developing guidelines in the near future.

Despite the lack of information on engaging with open science for qualitative researchers, many funding agencies are encouraging or requiring that researchers engage in some form of open science practices as a condition of their funding or awards. The primary way that researchers have been encouraged to engage in open science practices in many parts of the world has been by making the results of research projects openly available through open access publications. For example, in Canada the Tri-Council funding agencies (SSHRC, NSERC, and CIHR) share a policy objective of making the results of the research projects they fund available to the widest audience possible. In line with this objective, researchers of both qualitative and quantitative studies are

required to ensure that publications arising from work funded by one of the Tri-Council agencies are freely accessible within 12 months of the publication date, either through online repositories or as open access publications within journals (Government of Canada 2016a). Policies such as these are not limited to Canada; the Australian Research Council (Australian Government 2018) and UK Research Councils (UK Research and Innovation 2020) both enforce nearly identical policies for the research that they fund.

At this time, researchers across the globe are also being encouraged to preserve and share data in publicly accessible repositories. In doing so, researchers are encouraged to 'consider' issues related sharing data, as well as the ethical and legal obligations that may prohibit them from sharing (Government of Canada 2016b). However, there is a lack of guidance for qualitative researchers wishing to engage in open science practices or who might be asked to make their data or project materials openly available. Given this context, it is important to have a fulsome discussion about the issues that qualitative researchers face in this area and to provide researchers with a voice in this changing landscape as journals, funding agencies, and institutions implement policies and guidelines relating to open science (Bishop 2009). Given the increasing importance being placed on open science practices, the purpose of the present project was to develop information and provide some guidance to qualitative researchers on considerations related to engaging in open science practices. To do this we not only drew on existing literature in other disciplines but, following successful funding, also brought together leading experts in the field to explore critical issues for qualitative researchers engaging in open science practices.

Process: identifying core values and key considerations

We engaged in four working group meetings with experts in qualitative inquiry in sport and exercise psychology, as well as seven meetings with various stakeholder groups including potential participants (e.g., athletes, administrators, and parents), journal editors, a qualitative research group, data management experts, and members of ethics boards. The outcome of these meetings was the identification of core values and key considerations for researchers so that they can make informed decisions about engaging in open science practices in qualitative inquiry.

Working group meetings

A series of four virtual/online working group meetings were held between May-July 2020; each meeting was three hours in length. The meetings were led by the first author and were attended by the five co-authors who have expertise in qualitative inquiry. The working group members have expertise in the uses of various qualitative methodologies and have conducted numerous studies using qualitative approaches among diverse groups of participants, as well as chapters and textbooks on qualitative methodologies. The first author (KT) led the current project, as she had previously published a review (along with ZP) on open science in sport psychology and the implications of engaging in open science practices for qualitative researchers. Collectively, the working group members also serve on the editorial boards or as Editors of prominent journals including *Qualitative Research in Psychology; Qualitative Research in Sport, Exercise and Health; International Review of Sport and Exercise Psychology; Methods in Psychology; Health Psychology Review; Psychology of Sport and Exercise; Journal of Sport & Exercise Psychology;* and *Sociology of Sport Journal*. The working group members also serve as executive members within societies including the *International Society for Qualitative Research in Sport and Exercise* (QRSE); the *North American Society for the Psychology of Sport and Physical Activity* (NASPSPA); and the *Canadian Society for Psychomotor Learning and Sport Psychology* (SCAPPS). To assist transparency and provide an audit trail, detailed notes of the meetings were taken by three undergraduate research assistants. Prior to the first meeting, the attendees were asked to review published research literature and grey

information about open science and implications for qualitative inquiry (e.g., Chauvette, Schick-Makaroff, and Molzahn 2019; Tamminen and Poucher 2018).

The meeting topics were decided based on issues previously identified in published articles about the implications of open science practices for qualitative researchers (e.g., Chauvette, Schick-Makaroff, and Molzahn 2019; Fielding, 2004; Kuula, 2011; Tamminen and Poucher 2018). The first meeting consisted of an overview and brief introduction to the topic and purpose of the working group meetings, and the members discussed their thoughts on the critical issues and potential challenges of engaging in open science in qualitative research. The topic of discussion for the second meeting centred on ethical concerns, anonymity, confidentiality, and consent. The topic of discussion for the third meeting was the pre-registration of qualitative studies, and publishing research and conducting secondary analysis using open qualitative data. The topic of discussion in the fourth meeting concerned the storage and stewardship of qualitative data, and further discussion about making informed choices about engaging in open science practices within qualitative research projects. Research papers from the literature were shared between meetings to help inform discussions.

Stakeholder meetings

In addition to the working group meetings, six meetings were held with different stakeholder groups to further inform this work. One meeting was conducted with youth sport coaches, parents of youth athletes, and elite athletes and para-athletes as representatives of potential participant groups in qualitative studies (N = 6 participants). Two meetings were held with editors from leading journals in sport and exercise psychology (N = 4 participants), and three meetings were held with information and data management experts, and members of university research ethics boards (N = 8 participants). During these meetings, the lead author presented an overview of the issues and considerations identified by the working group and sought feedback and input on these topics from the various stakeholder groups. The stakeholder meetings lasted between 1–1.5 hours each; detailed notes were taken during all meetings and were shared with the working group members. Each member of the working group had access to a shared online folder containing notes from all meetings; in addition to the meeting notes, other resources such as journal articles were shared with working group members.

Throughout the working group and stakeholder meetings, and iterative engagement with the literature, the authors collaboratively contributed to the identification and development of the core values and the considerations for making informed decisions about engaging in open qualitative research practices outlined below. For example, during the first working group meeting, the goals for the project and meetings were identified (to explore critical issues arising when engaging in open science in qualitative research; consider whether and how open science practices are useful or possible within qualitative approaches) and the members discussed outcomes and outputs that would be useful for the broader community of qualitative researchers, such as a manuscript identifying key issues and principles that are important to consider when engaging in open science, guidelines about topics to consider when engaging in open science practices, webinars, conference presentations, and teaching resources for researchers (meeting notes, 27 May 2020). At the end of the second meeting, the working group members identified a list of initial 'foundational principles' – hereafter described as 'core values' – that we felt were important for guiding the engagement in open science practices in qualitative inquiry, as well as an initial list of 'best practices' – hereafter described as 'considerations' – for engaging in open qualitative research (meeting notes, 9 June 2020). Following the second meeting, this list of initial core values and key considerations was summarised by the first author and presented back to the working group members during the third and fourth meetings for feedback and comments (meeting notes, 25 June 2020). At the end of the fourth meeting, a summary and overview of these topics was presented and discussed, and the key points to be addressed in the manuscript were discussed and gaps were noted for further

elaboration (meeting notes, 9 July 2020). The writing of the different sections of the manuscript was divided among the co-authors, although the first author coordinated and led the writing of the manuscript.

Core values

Considerations for engaging in open science practices in qualitative research need to be underpinned by core values consistent with qualitative research generally, and by the philosophical perspectives and methodologies used in a particular research project. Much of the discussion of open science practices has roots in quantitative research conducted from a postpositivist perspective (e.g., Nosek et al. 2015). As such, many existing open science practices were designed to address issues that are not necessarily relevant for, or that may even be at odds with, qualitative research (Chauvette, Schick-Makaroff, and Molzahn 2019). For example, a post-positivist philosophy values replication of analyses by a researcher who was not involved in the conduct of the original research, to indicate that analyses are unbiased. Conversely, research conducted from a constructivist standpoint values the multiple realities of participants and researchers, and would not expect two researchers to come to identical conclusions if analysing the same data. Therefore, the practice of making data openly available to other researchers for re-analysis may not meet the same needs in qualitative research as intended for quantitative research. Despite these differences, we felt that at least some open science practices could be useful within qualitative research, albeit for potentially different purposes and aims. Prior to identifying practical considerations for engaging in open science practices in qualitative research, we identified core values that should be considered when making decisions about open science in qualitative research (see Figure 1).
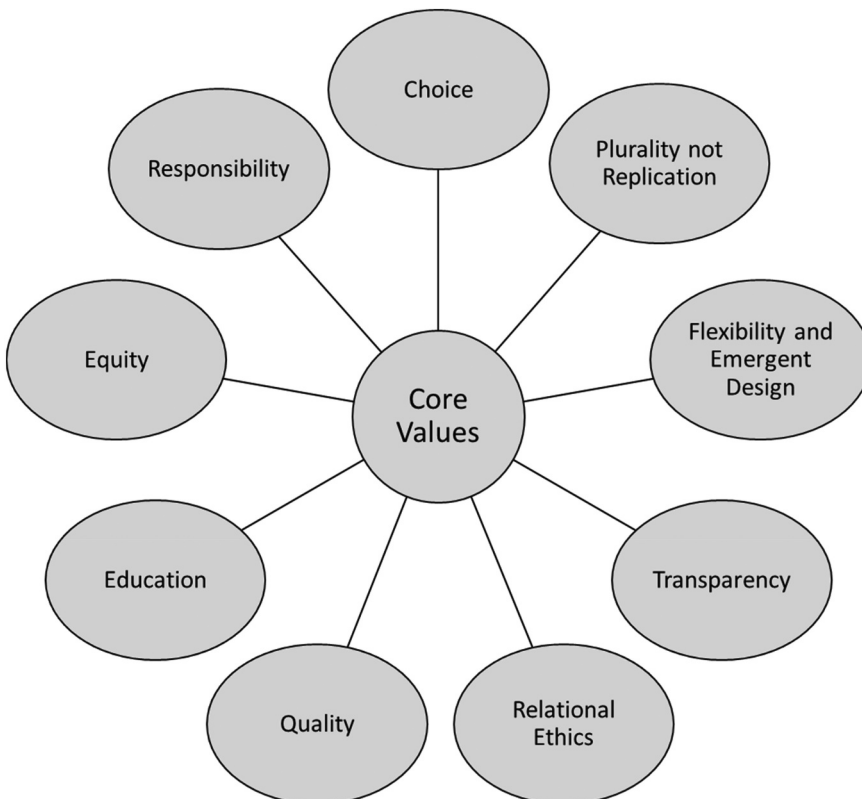

Figure 1. Core values underpinning the considerations for engaging in open qualitative research practices.

Choice: academic freedom and participant autonomy

The first core value is academic freedom for researchers and autonomy for participants to choose whether and how to engage in open research practices. Researchers themselves are often in a good position to decide the extent to which their project materials and data can be stored and shared for future use. Researchers can choose to engage in a number of open science practices that range on a continuum from less risky to more risky (e.g., sharing project materials such as interview guides or open access publications vs. sharing datasets). Researchers should be empowered to make decisions about the appropriateness of engaging in open science practices within the context of their project. Given the potential for researchers to be investigating topics that can be highly sensitive, or to be conducting research among participant groups that are potentially identifiable, researchers are often in a good position to decide which aspects of their projects are appropriate and amenable for open science. For example, researchers may be working on sensitive topics or with participants who are identifiable (e.g., elite athletes) or from marginalised groups, or researchers may be working with data that is not easily de-identified (e.g., photos, videos).

Equally, participants should retain the autonomy to choose whether they wish for their data to be stored and shared for future use. Participant autonomy is associated with the ethical principle of respect for persons and involves the 'ability to deliberate about a decision and to act based on that deliberation,' while 'respecting autonomy means giving due deference to a person's judgement and ensuring that the person is free to choose without interference' (Government of Canada 2018, 6). Open science practices impact the ethical principle of respect for persons in that participants may not appreciate the implications and risks associated with storing and sharing data for secondary use or re-analysis, thereby limiting the extent to which they can provide informed consent for the use of their data (Ross, Iguchi, and Panicker 2018; Ryen 2004). Participant autonomy is especially important when research is co-constructed, participatory, or community-based, and there are several potential ethical, legal, and social risks for participants involved in qualitative research that increase when their data may be stored and shared for future re-use. For example, research with participants who have engaged in illicit or illegal behaviours (e.g., doping in sport) or discussing sensitive topics (e.g., athlete maltreatment, mental illness) may risk consequences to their social relationships or may face legal risks if their identities can be ascertained through the information shared in the course of participating in a study (for more information on the risks to participants, see Kaiser 2009; Walford 2005; see also the sections below on *Topics and Participant Groups*, and *Participant Consent*). Researchers engaging in qualitative inquiry should make themselves aware of the potential risks to participants, explain these prior to participants deciding whether to have their data stored for future use, and in co-constructed, participatory, or community-based research work with them to find democratic solutions. At all times, the researcher and the participant should retain their autonomy to decide the extent to which they wish to engage in open science practices, particularly the storing and sharing of qualitative data for future use.

Plurality not replication

A second core value underpinning choices for engaging in open science practices in qualitative inquiry is the importance of *methodological and analytical pluralism*, rather than replication as a driving motivation for engaging in open science practices. The push towards greater openness in quantitative, postpositivist scientific research has been driven partly by the move towards facilitating researchers' ability to replicate previous studies and findings, to be able to 'confirm' or verify previous results (Shrout and Rodgers 2018). However, replication is not usually a goal for researchers engaging in qualitative research. As Wolcott (1995) noted, replication (like reliability) remains beyond the pale for research based on qualitative methods like interviews, observation, story completion, and autophotography:

> Ordinarily, fieldworkers do not try to make things happen at all, but whatever the circumstances, we cannot make them happen twice. When something does happen more than once, we do not for a minute insist that this repetition is exact. (Wolcott 1995, 167)

In other words, 'we cannot step into the same stream twice!' (Sparkes and Smith 2009, 180). Qualitative researchers, therefore, need to recognise the circumstances that render replication as less than relevant to their concerns and, equally, qualitative research should not be judged by standards associated with replication.

None of this means that qualitative data cannot be used by different researchers if openly accessible. Whilst the goal is not replication, one option is to engage in analytic or interpretive pluralism, recognising that 'different researchers will approach the same data from different positions or perspectives' (Chauvette, Schick-Makaroff, and Molzahn 2019, 3). This is the application of multiple qualitative analytic methods to the same dataset, by the same or different researchers, to explore different aspects of the participants' social worlds (Clarke, Caddick, and Frost 2016; Frost et al. 2010). Analytic pluralism can enable 'different interpretive possibilities to be explored,' thereby promoting the development of 'richer, nuanced and more complex understandings of phenomena than one analytic technique could offer alone' (Clarke, Caddick, and Frost 2016, 370). Therefore, engaging in open science practices (particularly storing and sharing project materials, data, and analytic/project notes) is supported for the purposes of methodological and analytic pluralism, not for replication or verification.

Flexibility and emergent design

A third core value that informs the choices qualitative researchers make concerning open science practices is *flexibility and emergent design* in qualitative inquiry. Emergent design is a core feature of qualitative inquiry, wherein 'data collection and analysis procedures . . . evolve over the course of a research project in response to what is learned in the earlier parts of the study' (Morgan 2008, 245). Given this principle, it is impossible to fully know in advance what aspects or topics within a qualitative study will be most important to follow. While qualitative studies may begin with ideas about what topics to investigate, and how to collect data from appropriate sources (Morgan 2008), researchers must be able to be flexible in their approaches to data collection and analyses to pursue interpretations as they are developed throughout the study. The flexible, iterative, and curiosity-driven nature of qualitative inquiry makes it impossible and inappropriate to 'lock in' predetermined specific operational variables, state testable hypotheses, or finalise either instrumentation or sampling schemes ahead of conducting the study. The principle of flexibility and emergent design is a core feature and strength of qualitative inquiry, and as such, they should not be sacrificed when engaging in open science practices.

Transparency

Transparency deals with the idea that researchers should disclose their research process and make it clear how they arrived at their conclusions (Tuval-Mashiach 2017; Yardley 2000). In quantitative research, transparency is often associated with reproducibility of results, but doing so is problematic for qualitative research because it can be in conflict with the underlying philosophies used in qualitative research (Pratt, Kaplan, and Whittington 2019). Therefore, in the qualitative context, transparency typically applies to clarity in describing the purpose, the rationale for the context, and how the study was conducted, and showing that conclusions are reasonable and based on data (Pratt, Kaplan, and Whittington 2019), with the understanding that interpretations and conclusions are necessarily tentative and contextually situated. Within qualitative research, focusing only on replicability is at odds with the underlying philosophical assumptions and aims of qualitative research which assert that while there may exist an independent physical reality, discovering a reality independent from the researcher is a chimera (Smith and McGannon 2018). However,

engaging in open science practices for the purpose of enhancing transparency in qualitative research could be valuable by helping researchers to understand how research decisions were made in a qualitative study. Therefore, the principle of transparency applied to qualitative inquiry goes beyond simply attempting to replicate previous analyses by sharing methods and data with other researchers.

Relational ethics

The concept of *relational ethics* suggests that ethical decisions occur in the context of relationships, and that there is a need to consider the complexity and responsibilities at play in these dynamic interactions. Relational ethics emphasises mutual respect, connection, and dignity between the researcher, participants, and communities (Ellis 2007). It acknowledges that these relationships, and therefore ethical decisions, are dynamic and may evolve over time. Relational ethics involves consideration of the human connection and boundaries we have with others; maintaining mutual respect; and acknowledging the diverse social and historical contexts of lived experiences, and the emotional, physical, and social spaces in which ethical decision making occurs. Ethical decision making is complex, subjective, and interactional, and therefore relational ethics focuses more on asking questions than solving problems (Bergum and Dossetor 2005). From this perspective, questions about the ethical implications of open science practices must be considered in the context of each study and the evolving relationships among researchers, participants, and communities.

Quality

Open science practices should be used to improve the *quality* of qualitative research. Likewise, practices that impede study quality should be questioned or rejected. There are many philosophies underlying different approaches to qualitative research; therefore, there are multiple perspectives on how to judge the rigour or quality of qualitative research that are aligned with those philosophies (Sparkes and Smith 2009). It is important to choose quality criteria that align with the philosophical approach used in a particular study (Burke 2016), which means that there is not a universal set of criteria used to assess the quality of all qualitative research. Similarly, judgements about whether particular open science practices are appropriate will vary across studies, and should be made in light of the applicable philosophy and quality criteria. Identifying the appropriate quality criteria for a given study up front is important for considering the appropriate application of open science practices in the research, because doing so makes it possible to consider whether particular practices will improve or detract from study quality (for example, see the section below on preregistration or conditional acceptance of registered reports for qualitative studies).

Education

Open qualitative research practices also call for considerations about what these might bring to *education*, and our pedagogy in particular. Rather than simply telling students about qualitative research in undergraduate or postgraduate research modules, or using just your own research as the exemplar, students' learning experiences could potentially be enhanced by showing them and encouraging them to work with multiple and different examples of qualitative designs, ethics forms, data, and analyses that are openly available. Access to such resources and examples would help to expand students' awareness of qualitative research beyond approaches that are based on deductive and quantitative in nature and would provide opportunities for experiential learning (Knight 2016). For instance, by showing examples of different data sets students might learn more about what qualitative research is about, how interview data might be transcribed, how digital data might be represented, how observational data is recorded, and what quality data looks like and does not look like in relation to different types of data (e.g., interview data), and what different kinds of

knowledge can be created from different types of data. Datasets can also be used as secondary data and for analytical learning opportunities (Corti and Thompson 2007). When different analytic processes are made open students could get insights into what different types of analyses look like and how researchers went about doing each type of analysis. They could also use openly accessible data sets to practice their analytical skills and learn from the ways their interpretations were similar and/or different from the results published. In such ways, open access practices might play a part in developing thoughtful, insightful, and critical graduates of qualitative research, and students' knowledge of what qualitative research is about and how it can be done might be enhanced

Showing different qualitative data sets and encouraging students to work with them might further help students with different backgrounds and experiences connect with research while also challenging taken-for-granted assumptions (Wendt and Gone 2012). Attempts to decolonise education may be improved through access to and critically working with secondary data emphasising the experiences of people who are Black, Indigenous, or People of Colour, for example. However, the practice of sharing datasets for educational or analytic purposes beyond the original research study must be considered in the historical context of colonialism and racism, wherein researchers have engaged in abuses of power when conducting research among Black and Indigenous peoples in particular. There exists a history of researchers collecting data and using it unethically, without participants' consent or for purposes beyond the initial study for which consent was provided, or not providing the results of their research back to the communities where the data were collected (MacDonald, Stanwick, and Lynk 2014). These actions violate participants' rights concerning informed consent for the use of their data, as well as their right to ownership, control, access, and possession of their data, and they prevent communities from benefitting from the research to which they contributed (for more information, see the First Nations Information Governance Centre; https://fnigc.ca/ocap). Therefore, while education is an important core value for engaging in open science practices and sharing qualitative data, it should be considered within a broader discussion of participants' rights and abuses of power among Black and Indigenous people in research studies. This issue has also been recognised in much participatory, and community-based research that is frequently underpinned by a commitment to exploring together social, cultural and political conditions that shape the lives and experiences of community members and where participants and researchers work together to analyse data and co-create knowledge (Frisby et al. 2005). For those researching in these contexts, the notion that data could be analysed by others who do not have relationships with the original participants would 'miss the point' of participatory research and risks reinforcing the binary between researcher and the researched that participatory work is meant to destabilise.

Equity

Another core principle underlying open qualitative research practices is the principle of *equity*. Equity, in access to higher education and research opportunity, concerns practices that minimise or avert unnecessary and avoidable differences that are unfair and unjust; it implies that everyone should have a fair opportunity to engage in research and that none should be disadvantaged from this opportunity (cf. Whitehead 1992). Thus, researchers from different geographic locations or within different institutions should not be limited from participating in and contributing to qualitative research, for example due to financial constraints or challenges collaborating internationally. Open science practices such as open methods and open data may support the principle of equity in providing access to a broader group of researchers and students who may currently be unable to engage in qualitative inquiry. Furthermore, qualitative researchers have been calling for approaches to science and modes of inquiry that are 'collaborative, communicative, communitarian, context-centered, moral project(s)' (Denzin and Lincoln 2008, 46), and which centre social action and promote 'civic social science' as a model for universities and scientists. Open science practices can

help broaden the 'reach' of research by disseminating research findings openly, therefore supporting the principle of equity in access to research results.

Responsibility

A final principle identified as important for making informed decisions about engaging in open qualitative research practices was the notion of researcher responsibility. This principle concerns the researcher's responsibility to the participants with whom they are engaging throughout the course of their project; responsibility to research funding agencies; responsibilities to academic or other institutions; and the responsibility to be aware of and abide by ethical and moral principles related to participant dignity, confidentiality, and trust (Government of Canada 2018). Researchers should be responsible to their participants to ensure that participants are aware of the ways that their data may be stored and used, and when making data available for future use, 'researchers must be mindful of their responsibility to safeguard participant privacy and may have to code or anonymize the data to do so' (Government of Canada 2018, 56). The principle of researcher responsibility also extends to the stewardship of data. For example, researchers cannot simply post a qualitative dataset in an online repository and absolve themselves of responsibility for it; researchers must take responsibility in ensuring appropriate steps have been taken to inform participants of the storage and potential uses of the data, to anonymise data appropriately, and in implementing appropriate safeguards in the storage and stewardship of the data (e.g., access restrictions). Ross and colleagues noted that:

> given the ease with which reidentification is possible with broad data sharing and current and future technologies, there is need for a more cautious approach such as calibrated levels of access and prospective review requirements depending on the sensitivity of the original data, probability and magnitude of risks of harm, and/or the intent and scope of the secondary use. (Ross, Iguchi, and Panicker 2018, 140)

Researchers have been found to lack training about seeking informed consent from participants in research studies, and the processes for ensuring participant comprehension about study procedures also vary widely across researchers (Nusbaum et al. 2017). Therefore, given the additional potential risks and implications when engaging in open science practices, in qualitative inquiry, enhanced training for researchers on their responsibility to participants is particularly important and necessary.

Considerations for making informed choices about open qualitative research

Informed by the core values outlined above, nine key considerations for making informed choices about engaging in open qualitative research practices are identified below (see Figure 2). In general, in the sections below we do not provide specific guidance on *what* data or materials should be made openly available or *how* to proceed with de-identifying sensitive information for storage and re-use; these issues need to be considered within the context of the study that a researcher is conducting. It is our intent to provide a brief overview of the kinds of questions researchers should consider when deciding whether to engage in open qualitative research practices and to what extent their project is amenable to open science practices. For a more comprehensive overview of risks to participants, please see the Portage Network'sSensitive Data Toolkit for Researchers Glossary of Terms, Risk Matrix, and Informed Consent Language: https://portagenetwork.ca/news/new-sensitive-data-tools.

Storage and stewardship of qualitative data and project materials

Considerations about the storage and stewardship of qualitative data should include an assessment of (a) where the data will be stored, (b) who will control access to the data,
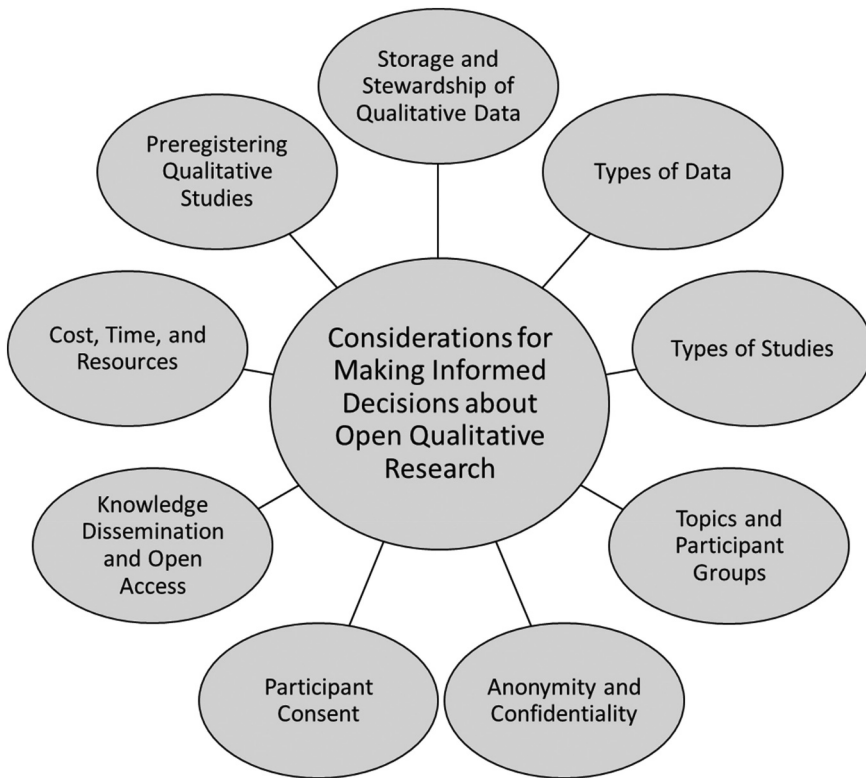
Figure 2. Overview of considerations for making informed choices about engaging in open qualitative research.

and (c) what levels of security are necessary for the data and project materials (see Figures 3 and 4). Depending on the topic of inquiry, the type of study or methodological approach, the types of data and materials to be stored, and the participant groups and risk of identification, researchers may choose to store qualitative project materials and data in online repositories, or they may determine that it is not appropriate to make the data and materials available online for future research and teaching purposes. A 'least-restrictive' option is to store data and materials in an online repository with no restrictions on access to the data or materials; this is viewed as the 'least secure' option for minimally-sensitive data and project materials, as anyone can view, download, and use the files. A more restrictive option is the storage of project materials and data in an online repository, where access to the data is managed by the primary researcher, who decides whether to grant access in response to requests from others to view and use the files. Researchers could also provide 'stepped access' to make some files and data openly available, while other data or files with more sensitive or potentially identifying information can be shared upon request or following more stringent access procedures (e.g., following ethics approval to access the data; McGrath and Nilsonne 2018).

Another option is for researchers to deposit their project materials and data in an online repository that is managed by a third-party organisation (e.g., Qualitative Data Repository in the United States: https://qdr.syr.edu/about, UK Data Service: https://www.ukdataservice.ac.uk/deposit-data.aspx, Australian Data Archive: https://ada.edu.au/). The researcher can specify the restrictions on the data and who should be allowed to access the materials (e.g., only grant access to requests from researchers with institutional affiliations; only grant access to researchers who have received ethical approval to access the data, etc.), but requests to access the data are managed by the

Storing and Sharing Qualitative Project Materials and Data

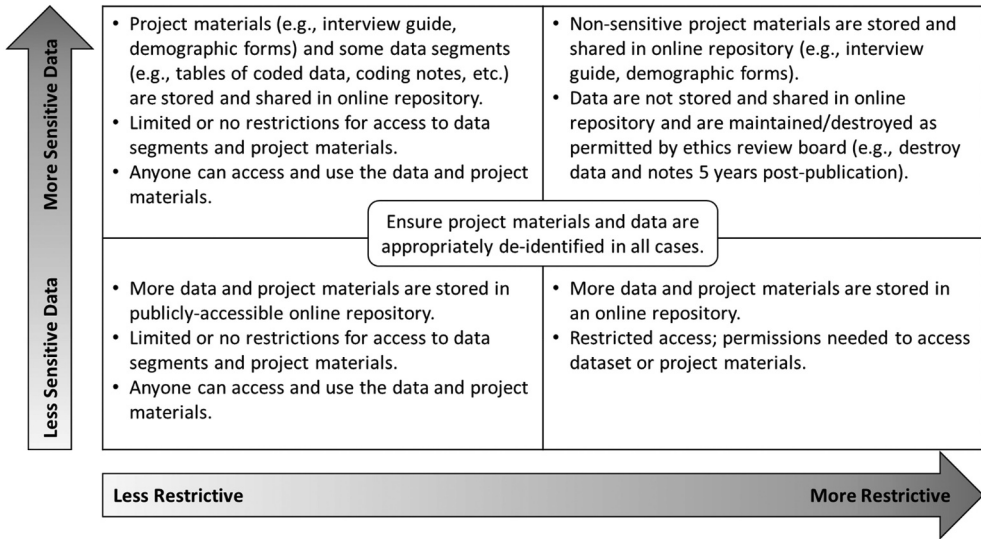| More Sensitive Data	• Project materials (e.g., interview guide, demographic forms) and some data segments (e.g., tables of coded data, coding notes, etc.) are stored and shared in online repository. • Limited or no restrictions for access to data segments and project materials. • Anyone can access and use the data and project materials.	• Non-sensitive project materials are stored and shared in online repository (e.g., interview guide, demographic forms). • Data are not stored and shared in online repository and are maintained/destroyed as permitted by ethics review board (e.g., destroy data and notes 5 years post-publication).
Less Sensitive Data	• More data and project materials are stored in publicly-accessible online repository. • Limited or no restrictions for access to data segments and project materials. • Anyone can access and use the data and project materials.	• More data and project materials are stored in an online repository. • Restricted access; permissions needed to access dataset or project materials.

> Ensure project materials and data are appropriately de-identified in all cases.

Less Restrictive ➡ **More Restrictive**

Figure 3. Considerations regarding the storage and sharing of qualitative project materials and data.

Storage, Stewardship, and Permissions

Online Repository, Permissions Needed, External Data Steward	**Online Repository, Publicly Accessible**
• Data and project materials are stored in an openly-available, searchable online repository. Meta-data information describes the contents of the project. • Data and project materials are managed and permissions granted by data repository/ organization (researcher does not control access to data). • Restrictions and permissions for accessing data can be set by the researcher when depositing data into repository. **Online Repository, Permissions Needed, Researcher Controls Access** • Data are stored in an openly-available, searchable online repository. Meta-data information describes the contents of the project. • Access to data and project materials is granted by the researcher. • Controls and restrictions for accessing data are set and granted by the researcher.	• Data and project materials are stored in publicly-accessible, searchable online repository. Meta-data information describes the contents of the project. • Access to data and project materials is freely granted to the public. • No controls or restrictions in place for accessing the project materials or data.

Most secure (most sensitive data) ➡ **Least secure (least sensitive data)**
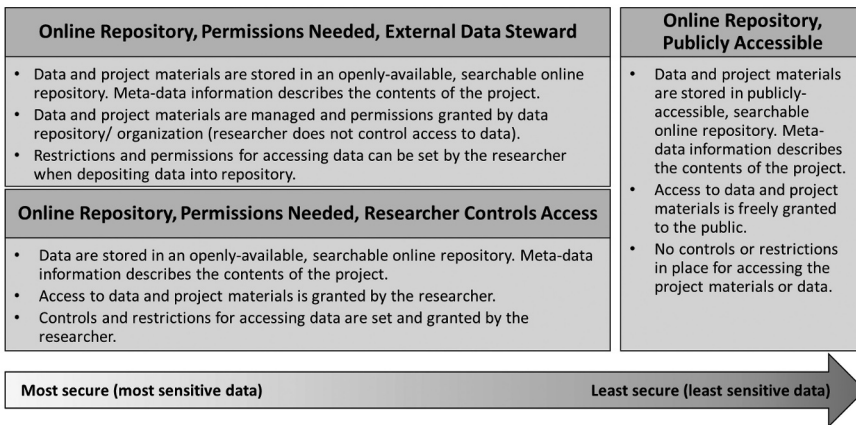
Figure 4. Considerations regarding the stewardship of data and project materials in different types of repositories.

repository/organisation and not by the primary researcher. This option would be useful for the long-term storage of data beyond the lifetime of the primary researcher, to ensure that future researchers may be able to access the data. In determining whether or not data should be stored and shared for future use, participant autonomy and informed consent is critical, as well as researcher autonomy and academic freedom to decide when it is appropriate to store and share data.

Researchers might use data sharing agreements and confidentiality agreements to explicitly describe the permitted uses of the data and the conditions for storing and re-sharing the data by subsequent researchers. For example, if a primary researcher provides a secondary researcher with access to a sensitive dataset, agreements about how the secondary researcher may use and store

the data should be stipulated. The use of data sharing agreements and confidentiality agreements is common and examples of these are typically furnished by academic institutions and universities to outline the conditions under which data may be accessed, used, and stored. The use of these data sharing and confidentiality agreements may be more important to consider when storing and sharing sensitive data in which participants are more likely to be identified, whereas they may not be necessary for less-sensitive data or in cases where participants are not likely to be identified.

Regardless of the level of restriction on data that is stored and shared, datasets should be cited when they are accessed and subsequently used (it is common practice for datasets to be automatically assigned a doi upon deposit into a repository) and researchers can also indicate copyright, re-use, and distribution restrictions for their open data (for more information on copyright for open data, see https://opendatacommons.org or https://creativecommons.org/share-your-work).

Types of data

Denzin and Lincoln (2011) describe the practice of doing qualitative research as 'a set of interpretive, material practices that make the world visible' by 'turning the world into a series of representations, including fieldnotes, interviews, conversations, photographs, recordings and memos to self' (3). In recent years, there has been a proliferation of qualitative studies that make use of digital representations including social media content, online conversations on public and private channels, and what Lupton (2018) has termed 'lively data' that includes digital networked content representing individuals' going about the activities of their daily lives (GPS files, step counts, and biometric data). The sheer diversity of data types creates challenges for engaging in open science as few repositories have the capacity to store or share all possible forms of representations that constitute the datasets of qualitative researchers. Moreover, few projects rely on a single type of data but rather collect and produce multiple types of data that collectively represent what was observed. For this reason, the first step in considering what types of data will be made open is a practical one and involves asking what types of data *can be* made open? And, more importantly, what types of data can be made open in a way that is accessible and useable to others? (see Figure 5)

From a purely logistical standpoint (as ethical and methodological issues are addressed below), text-based data is the most readily stored and shared. A logical entry point for qualitative researchers considering engaging in open science is to share text-based materials produced as part of the study design such as recruitment documents, interview guides, demographic forms, and codebooks. Not only are these materials technologically easy to share, but they pose the least risk for harm to participants as they do not include personal or identifying information. Sharing these types of materials, or engaging in 'open methods', adds transparency to the research process and this can be valuable to others teaching or learning qualitative methods. It can also provide those reading the final research outputs with important background context about how data were generated.

Moving beyond study materials, other forms of text-based materials that are easily shared (from a technical standpoint) could include interview transcripts and coded excerpts of transcripts. While these require more care in sharing because they include participant information, text-based data is the most readily edited and identifying information can removed before posting. Visual materials in digital formats, including photographs, videos, and social media posts can also be made open but researchers need to take into account both the challenges associated with long-term storage of large files and also whether or not the materials need to be redacted to maintain confidentiality and anonymity (and whether they have the technological skills needed to carry out this task, as this task is more complicated than with entirely text-based content). Networked datasets or datasets that include multiple types of data pose the most challenges in terms of making them open. First, as previously stated, the system for archiving
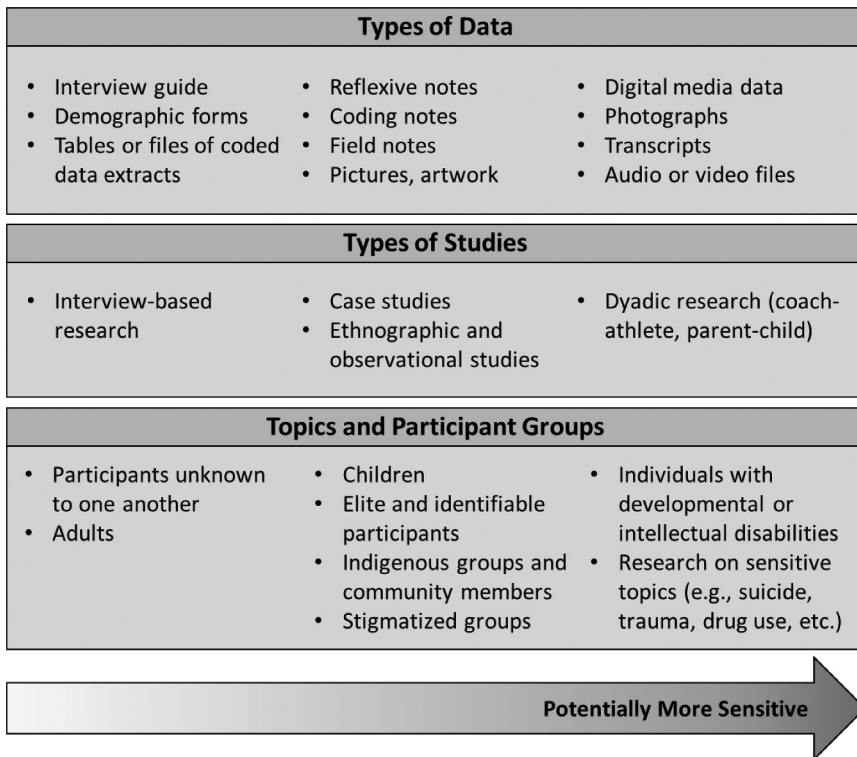
Types of Data		
• Interview guide • Demographic forms • Tables or files of coded data extracts	• Reflexive notes • Coding notes • Field notes • Pictures, artwork	• Digital media data • Photographs • Transcripts • Audio or video files
Types of Studies		
• Interview-based research	• Case studies • Ethnographic and observational studies	• Dyadic research (coach-athlete, parent-child)
Topics and Participant Groups		
• Participants unknown to one another • Adults	• Children • Elite and identifiable participants • Indigenous groups and community members • Stigmatized groups	• Individuals with developmental or intellectual disabilities • Research on sensitive topics (e.g., suicide, trauma, drug use, etc.)

Potentially More Sensitive →

Figure 5. Considerations regarding the types of data, types of projects, and participant groups that may be more or less sensitive, and therefore may require additional precautions when engaging in open science practices (e.g., when sharing data in an online repository).

one type of data might not be suitable for handling another type, requiring the researcher to split the data. Second, the researcher will need to take multiple measures to ensure that identifying or sensitive information is removed in individual files and also that it is not possible for those accessing the data to 'deductively' identify individuals when the data is looked at as a whole again (for more information and suggestions about removing identifying information from data and assessing potential risks when sharing data, see the Portage Network's Sensitive Data Toolkit for Researchers Glossary of Terms, Risk Matrix, and Informed Consent Language: https://portagen etwork.ca/news/new-sensitive-data-tools/). With each step of de-identification, the chance that important connections and context will be lost increases, thereby obscuring the complexity and richness of the data.

Types of studies

Consideration also needs to be paid to the context and conditions in which the data are collected or produced. Qualitative inquiry is a 'practice' or 'craft', and qualitative researchers employ a number of strategies as they seek to interpret or represent a particular phenomenon of interest (i.e., the research topic). While a comprehensive overview of all possible types of qualitative research or qualitative methodological traditions is beyond the scope of this manuscript, it can be helpful to think of qualitative research as on a spectrum from 'collect' to 'observe' to 'participate'. Studies that collect pre-existing materials include various forms of documents and media analysis. These types of studies are the most readily conducive to open science practices as they frequently draw on data that is already public in some way. Examples include newspaper articles, (some) social and digital

media content, and policy documents. Engaging in open science for these types of studies can be as simple as archiving documents or creating an annotated bibliography so that others can readily access the data without the same investment of time and resources required on the part of the original researcher. Archiving can also be a useful practice when the researcher wants to ensure that the data remains public for future research; while today's digital landscape means that accessing material can be as quick as clicking a button, there is also a high degree of possibility that materials will deleted or moved by the original poster.

As stated by Thorpe and Olive (2016), it can be difficult to fully differentiate studies that use observation methods from those that include participatory methods, and most qualitative research in sport and exercise involves both to a lesser or greater extent. However, on the 'observer' end of the spectrum are those studies that involve watching and speaking with individuals, while on the 'participant' end of the spectrum is research in the ethnographic traditions or informed by community-based and participatory action research frameworks. Decisions about whether or not these types of studies should be made open are complicated. Researchers need to consider how they got 'access' to these lifeworlds, on what conditions they were granted access, and who would be harmed or helped by sharing the work. For example, while it might be easy to assume that community-based or participatory action research is the most 'sensitive' in that it can require years for researchers to build relationships with communities, in some cases this type of research is a very good candidate for open science. These strong and long-term relationships create opportunities to engage participants in conversations about possible implications of sharing the work and, in some cases, making the work public can also facilitate opportunities to acknowledge the contributions of community members, make visible the experiences of marginalised groups, and/or facilitate collaborative action based on the findings of the work.

Topics and participant groups

Research on particular topics and with different participants groups might align or not align with the core values of open qualitative research laid out in the first part of this manuscript. Qualitative researchers in sport and exercise explore a wide range of topics and engage with groups that include athletes of all ages, those volunteering and working in sport, spectators and sports fans, protestors of mega-sport events, exercisers, and more. There has also been growing attention paid to groups who have traditionally been excluded from and marginalised by sport or exercise cultures including members of disability communities, LGTBQ+ communities, and racialised communities.

When making decisions about which topics are suitable for open research practices, qualitative researchers need to consider both the topic being examined and the population being engaged, and how the combination of these factors creates risk or value for those involved. For example, interviews with Olympic athletes who experienced a particularly dramatic event will be very hard to make anonymous due to their already public profile. Research with or about individuals who engage in illegal or stigmatising practices such as doping could have very damaging effects if made public. Case studies of organisations or interviews conducted with dyads (for example, athlete-coach, youth participant-parent) have the potential to damage relationships if shared and the researcher needs to consider that although they may have left the 'field', the participants still need to engage with each other. In some instances, it may be advisable to implement an embargo that stipulates that the full data set can only be made open after a given period of time has passed to minimise the risk of potentially negative impacts on those involved.

In the case of research that involves vulnerable people or marginalised groups, concerns about risks to participants about making work open should be part of an ongoing discussion with those involved, and participant and community autonomy is paramount. However, we would also like to acknowledge that while the risks may be greater for these individuals and communities, so too can the benefits. As stated above with regards to participatory action research, sharing of research with and about marginalised groups or taboo topics, if done in a thoughtful and deliberate manner, can

itself be a form social action and can bring visibility to the issues and groups that have been underrepresented in past research.

Anonymity and confidentiality

Among the greatest challenges to the use of open data in qualitative research are the fears associated with sharing potentially identifying data with other researchers. In the (proto)typical qualitative research process, participants are generally assured that responses provided or various recorded observations made of them will be de-identified to the greatest extent possible. In a standard research scenario, few others will ever be able to access raw or de-identified notes, transcripts, videos, pictures, diaries, or other forms of recorded information on participants. Indeed, a central component of building trust and rapport with research participants are assurances that all data will remain both anonymous and confidential. Depending on the nature of what is recorded and how it is stored (e.g., text only, video, audio recordings, photographs, etc.), sharing these qualitative notes/documents can pose a series of challenges to blanket assurances, as sensitive or potentially identifying information might be unintentionally shared (see Figure 6). The identities of participants in research involving highly specific topics, esoteric practices, small communities, or high-profile groups (potentially quite easily linked to where the research was first conducted), for example, might be suspected or inferred through a close inspection of data by others. This might be the case, in particular, for focus group research and qualitative research involving mass amounts of observational or visual data. Though the use of pseudonyms, participant numbers of codes, and generic rather than specific information about participants are standard means of protecting individuals from being *directly* identified, additional steps may be required to add other layers of protection to ensure participants may not be *indirectly* identified (Kaiser 2009).

Open sharing of qualitative data might involve the selective editing or removal of participant responses, information, observations, images, conversations or other forms of recorded data that provide important 'clues' about participant identity (for example, 'a 21 year old female varsity basketball player from a large university in southwestern Ontario' could quite easily be linked to the researcher's university or nearby university) or contextual information about people that links them to known events, associations, or other persons. Qualitative researchers often refrain from disclosing such data in their own studies, and so such information might be standardly redacted, removed, or otherwise edited out of shared data. In general, we feel data redaction or removal poses no significant challenge to the quality or depth of open access data. 'Preparing' the data to be shared along these lines simply means extra diligence and reflexivity about participant anonymity and

Anonymity, Confidentiality, and De-identification of Qualitative Data

• Participant names, identifying information, details are not removed or anonymized • Participants may want their name associated with their data • Considerations around participant consent are greater when the data are more identifiable (e.g., when there is less de-identification of the data)	• Some details have been removed or changed to attempt to de-identify the participants • Use of pseudonyms, participant numbers • De-contextualizes the data somewhat	• Many details have been removed or changed to attempt to de-identify the participants • Use of pseudonyms, participant numbers • Remove or change context and details about events • De-contextualizes the data

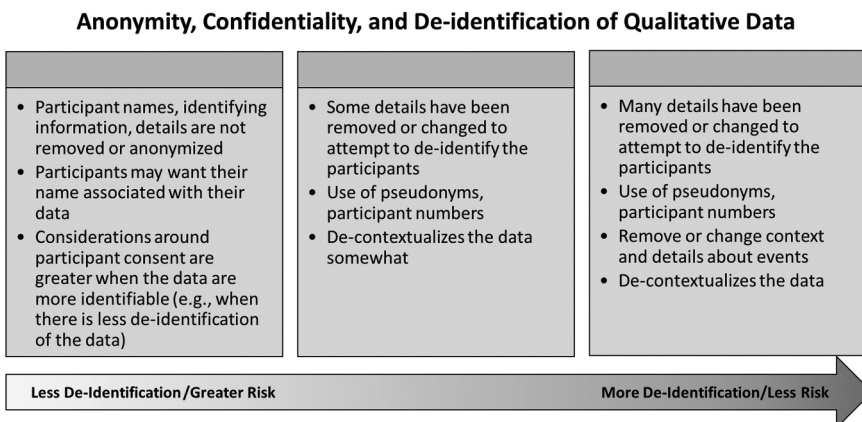Less De-Identification/Greater Risk → More De-Identification/Less Risk

Figure 6. Considerations regarding anonymity, confidentiality, and the de-identification of participant information in qualitative data.

confidentiality and carefully editing out information that is directly or indirectly identifying (perhaps with footnoted explanations as to why for other researchers to see). It also means qualitative researchers intent on sharing data in an open access format would be clear with participants of these editing processes during discussions about informed consent.

Participant consent

Pursuant of and in alignment with a focus on relational ethics in qualitative research processes, information regarding both the form and content of open access sharing should be addressed with participants at the outset of the research and as an ongoing process throughout the study (Grinyer 2009). Participants must be made aware of what data will be shared, how data will be shared, who might potentially gain access to their data and for what research or teaching reasons, where the data will be physically stored and in what format, and for how long the data will be retained. All of the aforementioned details should be clearly articulated in a consent document and explained thoroughly to participants. Ethical research practice also involves letting participants know that the data may be used in a range of ways. First, data will be used in a *defined way* by the researchers themselves (i.e., for the purpose of the study at hand) or, if doing co-constructed or participatory research, with participants. Second, data could potentially be used by the researchers themselves *comparatively* in their own future research. Third, in the case of open data sharing, data might serve for *broad use* by different research communities. For example, broad use of data pertaining to a study of athletes recovering from cancer could include research conducted by others on the same topic, research conducted on other populations of people recovering from cancer, or even research conducted on the generic subject of personal recovery. Broad use could also include the use of raw data such as interview transcripts in research methods classes to teach students how to code data.

Perhaps most important is that participants should be provided with a range of consent options for an open access study (see Figure 7). Participants can simply consent to the sharing of data openly for research and teaching purposes. In this scenario, withdrawal is only possible until the moment in which data are uploaded and stored in a virtual repository. Participants could also be provided the option to share *some* data openly and/or for limited purposes (say, for teaching but not with other researchers). Sub-options

Participant Recruitment and Consent

• Participant consents to participate in study but does not consent to share data openly for other research or teaching purposes.
• Issues of consent may be more important for very sensitive topics, groups, and populations.
	• Participant consents to share some data openly for teaching and/or research purposes.
	• Options for what data to share and in what form:
	  • De-identified data (e.g., full transcript)
	  • De-identified data with some sections redacted
	  • De-identified coded data extracts
	• Consider researcher and participant burden to review and redact data.
		• Participant consents to have data shared openly for teaching and research purposes.
		• Consider researcher and participant burden to review and redact data.

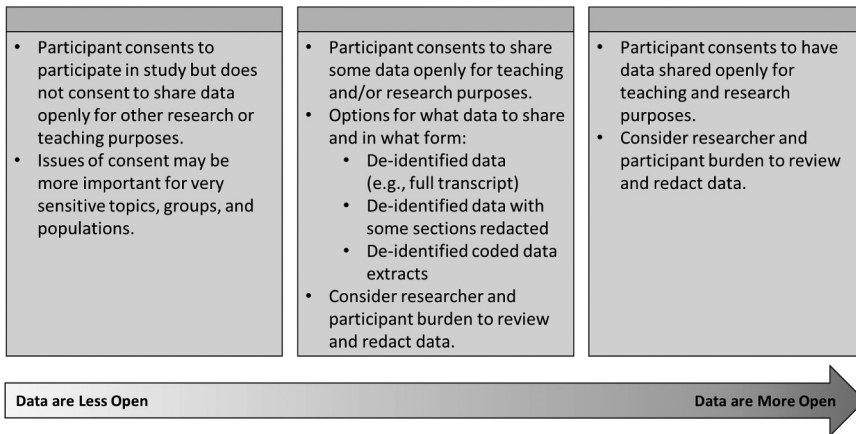**Data are Less Open** ⟶ **Data are More Open**

Figure 7. Considerations regarding procedures for participant consent to share data. Information about the potential for open sharing of data should be communicated to participants before they decide to participate, following principles of relational ethics. Participants should be allowed to decide after they have participated in the study whether they want their data to be stored and shared for future research and teaching purposes; consent should be an ongoing process.

here could include sharing full or partial transcripts, transcripts but not audio recordings, select visual data but not others, or portions of observational data. In the process of discussing anonymity and confidentiality, the possibility of blocking out or removing potentially identifying information should be noted as should other de-identification steps relevant to the research methods. Participants may be provided the option of reviewing their own transcripts to edit or redact information; however, being cautious about the burden of the research process on participants, screening and editing could be undertaken by researchers. Finally, participants should be made aware that they have the right to consent to participate in the study but not the sharing of their data. While it might be tempting to establish willingness to share data as an inclusion criterion in an open access study, when relational ethics is applied it becomes unethical to do so in practice, because it potentially pushes especially vulnerable, marginalised, or otherwise sensitive persons out of research processes (Smith 2008). Such is a matter of both equity and justice in the research process. Failure to provide this option may also establish a potentially coercive research context in which participants feel they must consent to sharing their data openly or will not be included in the research at all (for a discussion of the ethical concerns related to consent for secondary analysis of qualitative data, see Grinyer 2009)

Knowledge dissemination and open access

Knowledge dissemination and making the results of research available open access to other researchers and to the public is an important open science practice. Researchers may engage in a range of activities to share their research that are more or less difficult and costly, including posting versions of academic articles as 'green' open access papers (i.e., unformatted proofs of accepted articles; these may be subject to embargo periods; for more information see: https://v2.sherpa.ac.uk/romeo/about.html), sharing a summary of results through research reports and infographics, developing webinars and videos, presenting results at academic and non-academic conferences, and publishing articles as open access for a fee within academic journals (i.e., 'gold' open access; see Figure 8).

Cost, time, and resources

When making informed choices about engaging in various open science practices, researchers should also consider the cost, time, and resources required. For example, researchers wishing to prepare qualitative data to be stored and shared in a repository will require time to anonymise the dataset and prepare a metadata information file describing the contents of the dataset so that it is discoverable by other researchers. Furthermore, the incentive structure of academic publishing does not widely support researchers in allocating time and resources to producing datasets and metadata to be shared with others (Mosconi et al. 2019), although supporting and incentivising such activities can increase researchers' engagement in open science practices (Ali-Khan, Harris, and Gold 2017).

Knowledge Dissemination and Open Access Publications

• Green open access papers • Summary report of research findings	• Webinars • Brief videos of research project • Infographic of research project	• Gold open access papers • Conference presentations

Less Difficult & Costly ————————————————————————————— **More Difficult & Costly** →
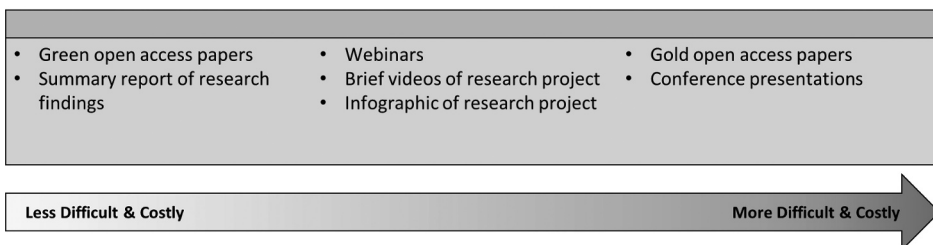
Figure 8. Considerations regarding knowledge dissemination and open access publication of research findings.

A considerable amount of time may also be required of participants after their initial engagement in the research project to review their data prior to storing it in a repository, to ensure that they are comfortable with the information that is included in the data to be stored and shared with other researchers. It is important to consider participant burden and inform participants about these processes throughout the research process as part of the informed consent process. It is also important to consider when working on international projects that different universities across the globe have different resources which, in turn, has implications for when, how, and who can engage in various open science practices.

Preregistration of qualitative studies

In quantitative research, preregistering research studies or submitting studies for conditional acceptance and publication within academic journals (e.g., registered reports) has been promoted as a way of limiting the extent to which researchers might engage in various intentional and unintentional research practices leading to the publication of statistically significant results (Nosek, Spies, and Motyl 2012). Preregistering hypotheses and detailed analysis plans is becoming widely accepted as an open science practice for quantitative, postpositivist research, and it serves an important purpose for these forms of inquiry and in addressing some of the problems identified in projects using quantitative approaches. Despite the value of preregistration for quantitative studies, we feel there is limited value in preregistration of qualitative research projects. There are also several potential drawbacks and limitations to this practice for qualitative researchers.

The value of study preregistration rests partially on the premise that researchers can submit their hypotheses and analysis plans, and an article can be conditionally accepted for publication as long as the researcher follows these procedures exactly, without deviation. Taking a parallel approach to preregistering qualitative studies would unduly constrain researchers' analytic focus, narrowing the scope of a study and limiting the researcher's flexibility to pursue interpretations as they unfold during the study, thereby violating the principle of emergent design that underpins qualitative inquiry. Simply put, it seems impossible that reviewers of preregistered qualitative studies could 'conditionally accept' a preregistered report for a qualitative project, as there would be no way of ensuring the quality or richness of a qualitative project from the proposed project description alone. In such a scenario, journal editors would be risking offers of conditional acceptance for qualitative projects that may end up as rigid, homogenous examples of qualitative research that lack depth and richness. Preregistration may be seen as useful by some as a way to encourage transparency and reduce publication bias (Chambers and Tzavella 2020; Haven and Van Grootel 2019); however, the problems within quantitative studies that are mitigated with preregistration processes and registered reports are not relevant within qualitative inquiry (e.g., reducing 'p-hacking' and selective publication of statistically significant results, reducing 'unnoticed flexibility'; Nosek et al. 2019). Therefore, it would be inappropriate for qualitative researchers to engage in pre-registration simply because it is an open science practice advocated for improving the quality of quantitative, postpositivist research studies. Preregistration risks stifling the artful and responsive use of methods, theoretical creativity as a process, and the flexibility that are all central to qualitative research – and its strength (for further discussion of preregistration in qualitative research, see Haven and Van Grootel 2019).

Summary and conclusion

In this paper, we outlined nine key considerations for researchers to make informed decisions about engaging in open science practices in qualitative research projects. These considerations cover a range of issues including the storage and stewardship of qualitative data and project materials, the types of data and studies undertaken in qualitative inquiry, the specific topics and participant groups researchers are investigating, issues of anonymity and confidentiality, participant consent,

knowledge dissemination, study preregistration, and the costs and resources required to engage in open science practices. Underpinning these key considerations are core values important for qualitative inquiry, including maintaining choice (participant autonomy and academic freedom), plurality of perspectives (not replication of analyses), flexibility and emergent design, transparency, relational ethics, quality, education, equity, and responsibility.

There are several possibilities that are created when considering engagement with open science practices for qualitative researchers. Engaging in open science practices such as open access to presentations and publications of research results can help to disseminate knowledge to broader groups of potential stakeholders beyond academic circles (McKiernan et al. 2016). Increased accessibility of project materials alone (e.g., interview guides, information letters, forms and materials with no participant information included in them) could provide information for other researchers to draw on when designing their own projects. These documents could also serve as artefacts in their own right as evidence of ways that researchers develop, design, and implement research procedures. Creating repositories of qualitative data can provide other researchers with access to data that may otherwise be difficult to obtain; sharing qualitative data could provide opportunities for secondary analysis through multiple pluralistic lenses and perspectives; multiple datasets could potentially be combined for greater breadth of knowledge generation; and sharing data could provide students with enhanced educational opportunities when learning about qualitative analysis (Corti and Thompson 2007). Historical analyses of stored datasets could lead to lines of inquiry on the construction of research inquiry topics and trends within fields of research; for example, future analyses may examine stored datasets to examine how the topics of 'positive youth development' or 'athlete activism' or 'disability' are constructed and discussed with participants across decades of research, and how discussions of these topic change over time or how they are approached by researchers from different cultural or geographic backgrounds (for an example of how such an approach has been used in health research, see Dodds et al. 2020).

For each of the potential possibilities that might be presented by engaging in open science practices, there are equal or greater potential risks that must be weighed by the researcher. These risks are related primarily to the open sharing of qualitative data. First and foremost, the potential risks to participants are paramount, which entails that researchers must adhere to ethical and moral principles of confidentiality, anonymity, and participant dignity (American Psychological Association 2017; Government of Canada 2018). Researchers should consider the potential for participants to be identified if their data is shared for future research or teaching purposes in an online repository, and take appropriate steps to reduce the downstream risks to participants. Of utmost importance, researchers should tell participants how and where their data will be stored, in what form, for how long, and who may potentially have access to it (e.g., publicly accessible, accessible only by researchers, etc.). Participants should maintain the autonomy to decide whether and how their data is stored and used for future research and teaching purposes.

Additional risks of storing and sharing data include the possibility that some researchers may capitalise on the labour of others who have spent time and energy building relationships and developing connections with communities of participants (Bishop 2009; Riley et al. 2019). There is also a risk that secondary researchers may not properly credit or acknowledge the data that were created by the original researcher (Laine 2017). A reliance solely on open access data and analyses when teaching also risks leaving students as graduates *of* qualitative research but with little experience of *doing* qualitative research. That includes the learning experiences that can come from making decisions and mistakes when designing research, being reflexive during the research process, being immersed in the field and collecting data, working ethically with people, and the analytical generative practice of transcribing data or making field notes. There is the risk that students end up thinking that designing a qualitative study or collecting data is simple and straightforward to do if they do not engage in designing their own studies or collecting their own

data. Students can also miss out on the fun that can come with doing qualitative research and the stories gathered during the process that can serve as useful companions for learning in the future. Accordingly, whilst openly accessibly qualitative data may help enhance education, we should not forget that carrying out research is vital to learning the craft of qualitative research and becoming a qualitative researcher.

Final thoughts

There are no clear-cut answers or 'blanket' policies that can be made for qualitative researchers when approaching the topic of open qualitative research practices. Some practices are simpler and more straightforward than others, with fewer potential risks (e.g., open access presentations and publications), whereas other practices are complicated, involve rigorous planning, and have much greater potential risks (e.g., sharing qualitative data). Because of the complex issues associated with implementing these practices within qualitative research, decisions about engaging in open qualitative research practices must take into consideration a number of critical questions, including issues related to ethical concerns, participant confidentiality, consent, the sensitivity of the topic and the types of data collected, and the resources and costs associated with open qualitative research practices, to name a few. Therefore, when considering whether a researcher should engage in open qualitative research practices or make data open access, the simple response is 'it depends' – it depends on the various issues reviewed in this paper, and likely others that remain to be raised and further discussed.

The implications of the 'it depends' response is twofold. First, journals editors, researchers, grant funders, and university administrator should not prescribe that all qualitative data and project materials should be made open access. A universal approach is to be avoided. Second, more dialogue and guidance is needed among qualitative researchers and other stakeholders to help editors, researchers, grant funders, and administrators to navigate these issues so that decisions can be disciplined, reflexive, and informed. Forcing qualitative researchers to conform to externally imposed open science practices poses a real threat to high quality, rigorous, ethical, and rich qualitative research. At this stage in the infancy of open qualitative research, rushing to jump on the open science bandwagon would be an injustice to the complexities of qualitative research; we cannot afford to jump ahead without considered discussions if qualitative research is to flourish in ethical, intellectual, moral, and impactful ways. Moving forward, this paper provides an initial framework for identifying considerations that can help qualitative researchers make informed decisions about and plan for implementation of open science practices, as well as assessing the risks and benefits of open science practices in qualitative inquiry.

Notes on contributors

Katherine Tamminen is an Associate Professor in the Faculty of Kinesiology and Physical Education at the University of Toronto. Her research in sport psychology draws on qualitative and quantitative approaches to examine stress and coping, as well as social and interpersonal aspects of emotion and emotion regulation. She also conducts research on youth athletes' experiences in sport and the roles of parents and coaches in youth sport. She is currently the President of the Canadian Society for Psychomotor Learning and Sport Psychology (SCAPPS) and serves as a Member at Large for the International Society for Qualitative Research in Sport and Exercise.

Andrea Bundon is an Assistant Professor in the School of Kinesiology at the University of British Columbia and a Principal Investigator at the International Collaboration on Repair Discoveries (ICORD). Her research spans the sociology of sport and critical disability studies. Her work is qualitative and draws on community-based research methodologies to explore the intersections of sport, physical activity, health, disability and social inclusion.

Brett Smith, Professor of Disability and Physical Activity, is President of the International Society of Qualitative Research in Sport and Exercise. His research on disability, physical activity and sport is underpinned by ideas from psychology, sociology, public health, and critical disability studies. It is also often co-produced. Brett is an appointed core member of the new UK Chief Medical Officers' Physical Activity Expert Committee for Communications. He is also Director of Research in the Department of Sport and Exercise Sciences, Durham University.

Meghan McDonough is an Associate Professor in the Faculty of Kinesiology at the University of Calgary. Her research examines the role of social relationships in physical activity and health behaviour. She examines these questions in a variety of populations, particularly people living with a chronic disease, marginalized populations, and older adults. She uses both qualitative and quantitative methodology in her research, and teaches a graduate course in qualitative methodology.

Zoë Poucher is a fourth-year PhD candidate whose research explores the mental health of elite athletes. Her other research interests include athletic identity, social support in sport, coach-athlete relationships, and organizational stressors in sport. Zoe specializes in the use of qualitative methods and has a certificate in Advanced Training in Qualitative Health Research Methodology from the Centre for Critical Qualitative Health Research at the University of Toronto.

Michael Atkinson is a Professor in the Faculty of Kinesiology and Physical Education at the University of Toronto. His research focuses on ethnographic methodologies and visual methods, and he has authored/edited 11 books, with most showcasing qualitative methods in sport and physical cultural studies (with several specifically devoted to qualitative research methodologies in sport and exercise). Most recently, Michael's work has turned to the politics and poetics of different representational forms in qualitative research, and the pressing need to make qualitative research more accessible to diverse populations.

ORCID

Katherine A. Tamminen 🔟 http://orcid.org/0000-0003-0880-4428
A. Bundon 🔟 http://orcid.org/0000-0002-6287-4788
B. Smith 🔟 http://orcid.org/0000-0001-7137-2889
M. H. McDonough 🔟 http://orcid.org/0000-0002-4930-8888
Z. A. Poucher 🔟 http://orcid.org/0000-0002-5278-0219

References

Ali-Khan, S. E., L. W. Harris, and E. R. Gold. 2017. "Point of View: Motivating Participation in Open Science by Examining Researcher Incentives." *Elife* 6: e29319. doi:10.7554/eLife.29319.001.

American Psychological Association. 2017. "Ethical Principles of Psychologists and Code of Conduct (2002, Amended Effective June 1, 2010, and January 1, 2017)." http://www.apa.org/ethics/code/index.html

Australian Government. 2018. "ARC Open Access Policy Version 2017.1." https://www.arc.gov.au/policies-strategies/policy/arc-open-access-policy-version-20171

Bergum, V., and J. B. Dossetor. 2005. *Relational Ethics: The Full Meaning of Respect*. Hagerstown, MD: University Publishing Group.

Bishop, L. 2009. "Ethical Sharing and Reuse of Qualitative Data." *Australian Journal of Social Issues* 44: 255–272. doi:10.1002/j.1839-4655.2009.tb00145.x.

Burke, S. 2016. "Rethinking 'Validity' and 'Trustworthiness' in Qualitative Inquiry: How Might We Judge the Quality of Qualitative Research in Sport and Exercise Sciences?" In *Routledge Handbook of Qualitative Research in Sport and Exercise*, edited by B. Smith and A. C. Sparkes, 330–339. Abingdon: Routledge.

Chambers, C., and L. Tzavella. 2020. "Registered Reports: Past, Present and Future." Unpublished paper available on OSF. doi:10.31222/osf.io/43298.

Chauvette, A., K. Schick-Makaroff, and A. E. Molzahn. 2019. "Open Data in Qualitative Research." *International Journal of Qualitative Methods* 18: 1–6. doi:10.1177/1609406918823863.

Clarke, N., N. Caddick, and N. Frost. 2016. "Pluralistic Data Analysis: Theory and Practice." In *Routledge Handbook of Qualitative Research in Sport and Exercise*, edited by B. Smith and A. C. Sparkes, 368–381. Abingdon: Routledge.

Corti, L., and P. Thompson. 2007. "Secondary Analysis of Archived Data." In *Qualitative Research Practice: Concise Paperback Edition*, edited by C. Seale, G. Gobo, J. F. Gubrium, and D. Silverman, 297–313. London: SAGE Publications.

Denzin, N., and Y. S. Lincoln. 2011. "Introduction: The Discipline and Practice of Qualitative Research." In *The SAGE Handbook of Qualitative Research*, edited by N. Denzin and Y. S. Lincoln, 1–19. 4th ed. Thousand Oaks: Sage.

Denzin, N. K., and Y. S. Lincoln. 2008. *The Landscape of Qualitative Research*. London: Sage Publications.

Dodds, C., P. Keogh, A. Bourne, L. McDaid, C. Squire, P. Weatherburn, and I. Young. 2020. "The Long and Winding Road: Archiving and Re-Using Qualitative Data from 12 Research Projects Spanning 16 Years." *Sociological Research Online* 1–19. doi:10.1177/1360780420924044.

Ellis, C. 2007. "Telling Secrets, Revealing Lives: Relational Ethics in Research with Intimate Others." *Qualitative Inquiry* 13 (2): 3–29. doi:10.1177/1077800406294947.

Fielding, N. 2004. "Getting the most from archived qualitative data: Epistemological, practical and professional obstacles." *International Journal of Social Research Methodology* 7: 97–104. doi:10.1080/13645570310001640699.

Frisby, W., C. J. Reid, S. Millar, and L. Hoeber. 2005. "Putting 'Participatory' into Participatory Forms of Action Research." *Journal of Sport Management* 19: 367–386. doi:10.1123/jsm.19.4.367.

Frost, N., S. M. Nolas, B. Brooks-Gordon, C. Esin, A. Holt, L. Mehdizadeh, and P. Shinebourne. 2010. "Pluralism in Qualitative Research: The Impact of Different Researchers and Qualitative Approaches on the Analysis of Qualitative Data." *Qualitative Research* 10 (4): 441–460. doi:10.1177/1468794110366802.

Government of Canada. 2016a. "Tri-Agency Open Access Policy on Publications." http://www.science.gc.ca/eic/site/063.nsf/eng/h_F6765465.html

Government of Canada. 2016b. "Tri-Agency Statement of Principles on Digital Data Management." http://www.science.gc.ca/eic/site/063.nsf/eng/h_83F7624E.html

Government of Canada. 2018. "Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans." https://ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf

Grinyer, A. 2009. "The Ethics of the Secondary Analysis and Further Use of Qualitative Data." *Social Research Update* 56 (4): 1–4. https://sru.soc.surrey.ac.uk/SRU56.pdf

Haaker, M., and B. Morgan-Brett. 2017. "Developing Research-Led Teaching: Two Cases of Practical Data Reuse in the Classroom." *Sage Open* 7 (2): 1–9. doi:10.1177/2158244017701800.

Haven, T. L., and L. Van Grootel. 2019. "Preregistering Qualitative Research." *Accountability in Research* 26 (3): 229–244. doi:10.1080/08989621.2019.1580147.

Irwin, S. 2013. "Qualitative Secondary Data Analysis: Ethics, Epistemology and Context." *Progress in Development Studies* 13: 495–306. doi:10.1177/1464993413490479.

Kaiser, K. 2009. "Protecting Respondent Confidentiality in Qualitative Research." *Qualitative Health Research* 19 (11): 1632–1641. doi:10.1177/1049732309350879.

Knight, C. J 2016. "Teaching qualitative research." *In Routledge Handbook of Qualitative Research in Sport and Exercise*, edited by B. Smith and A. C. Sparkes, 409-423. Abingdon: Routledge.

Kuula, A. 2011. "Methodological and ethical dilemmas of archiving qualitative data." *IASSIST Quarterly* 34/35:12-17. doi:10.29173/iq455.

Kwasnicka, D., G. A. Ten Hoor, A. Van Dongen, E. Gruszczyńska, M. S. Hagger, K. Hamilton, N. Hankonen, et al. 2020. "Promoting Scientific Integrity through Open Science in Health Psychology: Results of the Synergy Expert Meeting of the European Health Psychology Society." *Health Psychology Review* 1–17. doi:10.1080/17437199.2020.1844037.

Laine, H. 2017. "Afraid of Scooping – Case Study on Researcher Strategies against Fear of Scooping in the Context of Open Science." *Data Science Journal* 16 (29): 1–14. doi:10.5334/dsj-2017-029.

Lupton, D. 2018. "Lively Data, Social Fitness and Biovalue: The Intersections of Health Self-Tracking and Social Media." In *The SAGE Handbook of Social Media*, edited by J. Burgess, A. Marwick, and T. Poell, 562–578. London: Sage.

MacDonald, N. E., R. Stanwick, and A. Lynk. 2014. "Canada's Shameful History of Nutrition Research on Residential School Children: The Need for Strong Medical Ethics in Aboriginal Health Research." *Pediatrics & Child Health* 19 (2): 64. doi:10.1093/pch/19.2.64.

McGrath, C., and G. Nilsonne. 2018. "Data Sharing in Qualitative Research: Opportunities and Concerns." *MedEdPublish* 7: 1–8. doi:10.15694/mep.2018.0000255.1.

McKiernan, E. C., P. E. Bourne, C. T. Brown, S. Buck, A. Kenall, J. Lin, D. McDougall, et al. 2016. "How Open Science Helps Researchers Succeed." *eLife* 5 :1–19, e16800. doi:10.7554/eLife.16800.

Morgan, D. 2008. "Emergent Design." In *The SAGE Handbook of Qualitative Research Methods*, edited by L. M. Given, 246–248. London: Sage.

Mosconi, G., Q. Li, D. Randall, H. Karasti, P. Tolmie, J. Barutzky, M. Korn, and V. Pipek. 2019. "Three Gaps in Opening Science." *Computer Supported Cooperative Work (CSCW)* 28 (3): 749–789. doi:10.1007/s10606-019-09354-z.

Nosek, B. A., E. D. Beck, L. Campbell, J. K. Flake, T. E. Hardwicke, D. T. Mellor, A. E. Van't Veer, and S. Vazire. 2019. "Preregistration Is Hard, and Worthwhile." *Trends in Cognitive Sciences* 23 (10): 815–818. doi:10.1016/j.tics.2019.07.009.

Nosek, B. A., G. Alter, G. C. Banks, D. Borsboom, S. D. Bowman, S. J. Breckler, S. Buck, et al. 2015. "Promoting an Open Science Culture." *Science* 348 (6242): 1422–1425. doi:10.1126/science.aab2374.

Nosek, B. A., J. R. Spies, and M. Motyl. 2012. "Scientific Utopia: II. Restructuring Incentives and Practices to Promote Truth over Publishability." *Perspectives on Psychological Science* 7 (6): 615–631. doi:10.1177/1745691612459058.

Nusbaum, L., B. Douglas, K. Damus, M. Paasche-Orlow, and N. Estrella-Luna. 2017. "Communicating Risks and Benefits in Informed Consent for Research: A Qualitative Study." *Global Qualitative Nursing Research* 4: 1–13. doi:10.1177/2333393617732017.

Pratt, M. G., S. Kaplan, and R. Whittington. 2019. "Editorial Essay: The Tumult over Transparency: Decoupling Transparency from Replication in Establishing Trustworthy Qualitative Research." *Administrative Science Quarterly* 65 (1): 1–19. doi:10.1177/0001839219887663.

Riley, S., J. Brooks, S. Goodman, S. Cahill, P. Branney, G. J. Treharne, and C. Sullivan. 2019. "Celebrations Amongst Challenges: Considering the Past, Present and Future of the Qualitative Methods in Psychology Section of the British Psychology Society." *Qualitative Research in Psychology* 16 (3): 464–482. doi:10.1080/14780887.2019.1605275.

Ross, M. W., M. Y. Iguchi, and S. Panicker. 2018. "Ethical Aspects of Data Sharing and Research Participant Protections." *American Psychologist* 73 (2): 138–145. doi:10.1037/amp0000240.

Ryen, A. 2004. "Ethical Issues." In *Qualitative Research Practice*, edited by C. Seale, G. Gobo, J. F. Gubrium, and D. Silverman, 230–247. London: Sage.

Shrout, P. E., and J. L. Rodgers. 2018. "Psychology, Science, and Knowledge Construction: Broadening Perspectives from the Replication Crisis." *Annual Review of Psychology* 69: 487–510. doi:10.1146/annurev-psych-122216-011845.

Smith, B., and K. R. McGannon. 2018. "Developing Rigor in Qualitative Research: Problems and Opportunities within Sport and Exercise Psychology." *International Review of Sport and Exercise Psychology* 11: 101–121. doi:10.1080/1750984X.2017.1317357.

Smith, L. J. 2008. "How Ethical Is Ethical Research? Recruiting Marginalized, Vulnerable Groups into Health Services Research." *Journal of Advanced Nursing* 62: 248–257. doi:10.1111/j.1365-2648.2007.04567.x.

Sparkes, A. C., and B. Smith. 2009. "Judging the Quality of Qualitative Inquiry: Criteriology and Relativism in Action." *Psychology of Sport and Exercise* 10: 491–497. doi:10.1016/j.psychsport.2009.02.006.

Tamminen, K. A., and Z. A. Poucher. 2018. "Open Science in Sport and Exercise Psychology: Review of Current Approaches and Considerations for Qualitative Inquiry." *Psychology of Sport and Exercise* 36: 17–28. doi:10.1016/j.psychsport.2017.12.010.

Thorpe, H., and R. Olive. 2016. "Conducting Observations in Sport and Exercise Settings." In *Routledge Handbook of Qualitative Research in Sport and Exercise*, edited by B. Smith and A. C. Sparkes, 124–138. Abingdon: Routledge.

Tuval-Mashiach, R. 2017. "Raising the Curtain: The Importance of Transparency in Qualitative Research." *Qualitative Psychology* 4 (2): 126–138. doi:10.1037/qup0000062.

UK Research and Innovation. 2020. "RCUK Open Access Policy." https://www.ukri.org/funding/information-for-award-holders/open-access/open-access-policy/

Walford, G. 2005. "Research Ethical Guidelines and Anonymity." *International Journal of Research & Method in Education* 28 (1): 83–93. doi:10.1080/01406720500036786.

Walsh, C. G., W. Xia, M. Li, J. C. Denny, P. A. Harris, and B. A. Malin. 2018. "Enabling Open-Science Initiatives in Clinical Psychology and Psychiatry without Sacrificing Patients' Privacy: Current Practices and Future Challenges." *Advances in Methods and Practices in Psychological Science* 1 (1): 104–114. doi:10.1177/2515245917749652.

Wendt, D. C., and J. P. Gone. 2012. "Decolonizing Psychological Inquiry in American Indian Communities: The Promise of Qualitative Methods." In *Qualitative Strategies for Ethnocultural Research*, edited by D. K. Nagata, L. Kohn-Wood, and L. A. Suzuki, 161–178. Washington, DC: American Psychological Association.

Whitehead, M. 1992. "The Concepts and Principles of Equity and Health." *International Journal of Health Services* 22: 429–445. doi:10.2190/986L-LHQ6-2VTE-YRRN.

Wolcott, H. F. 1995. *The Art of Fieldwork*. Walnut Creek: Altamira Press.

Yardley, L. 2000. "Dilemmas in Qualitative Health Research." *Psychology & Health* 15: 215–228. doi:10.1080/08870440008400302.