Broadening the Participant Pool: A Novel Approach for Remote Research

Abstract

Approaches to psychological research currently focus on convenience samples who tend to be from the global north and lack diversity. Many of these research findings are not validated with different populations, drawing largely from WEIRD (Western, Educated, Industrialized, Rich, and Democratic) populations. This limits cultural considerations and likely leads to over-generalisation of findings. This paper provides insight into a novel approach, created in response to the challenges of the COVID-19 pandemic, which opens research participation up to an infinitely-wider population pool. Exploring gender stereotypes in youth sport, the new methodology allowed participants to take part in the practical research remotely, using an online self-guide. Findings indicate that participants were able to engage with the research approach and the template provides a means of diversifying research without loss of integrity. Researcher reflections are included on the development and implementation of this approach with recognition that this approach is new and future researchers should look to take it on and progress its use further.

Currently research in psychology is largely carried out by and with so-called WEIRD populations. That is, those from Western, Educated, Industrialised, Rich, and Democratic cultures (Nielsen et al., 2017). Many psychological research findings are also not validated with different populations (Henrich et al., 2010; Rad et al., 2018), which limits cultural considerations and likely leads to over-generalisation of findings. If psychological findings are to be truly generalisable across different cultures and within increasingly multicultural populations, then researchers need to address this issue of a lack of cultural diversity.

Within sport and exercise psychology, a lack of research diversity has long been noted as problematic. Duda and Allison (1990) stated the negative impact of a narrow cultural lens:

> "The failure to consider such variability among and between ethnic minorities not only diminishes the importance of their experiences within the sport/exercise domain but also leaves the theoretical understanding of the human condition in these contexts biased and distorted at best." (p. 115)

Greater exploration of ethnic diversity in sport and exercise would help to clarify the role of biological, psychological, or sociological factors in performance and participation differences. Values, role modelling, parenting styles, and peer influences are all possible areas of influence that sit within a cultural context (Duda & Allison, 1990). More recently, the growth of *cultural sport psychology* (CSP) has led to scholars challenging mainstream sport psychology's assumptions. This relatively new movement aims to facilitate greater understanding of marginalised topics and cultural identities and the sociocultural challenges that limit physical activity participation and performance (Blodgett et al., 2015).

Diversity in research participation is not limited to cultural and ethnicity considerations though. It should also include participants with alternative communication needs, those with disabilities, and those outwith urban settings. All these groups often face barriers to research participation (e.g., Harris & Roberts, 2003; Morgan et al., 2005; Woodall et al., 2010). It should also extend to consideration of intersectionality within participant groups. Intersectionality extends

across research disciplines and so an ability to broaden the range of participant pools will undoubtedly benefit our understanding of those who do not fit squarely into 'WEIRD' categories (e.g., Carbado et al., 2014). While specific CSP, cross-cultural, and minority research has a place in broadening the understanding of psychology across more diverse populations (Hall & Maramba, 2001), this paper will present the creation of a novel approach to remote research that has the benefit of broadening the participant pool across all research topics. Our researcher reflections of the development and implementation of this approach are included with recognition that this approach is new and future researchers should look to take it on and progress its use further.

Study Context

The development of this novel methodological approach was driven by necessity to continue researching during the ongoing COVID-19 pandemic. The study took place as part of the final stages of a doctorate programme and aimed to explore the impact of gender stereotype threat on youth sports performance. The original 'plot' of this story was to replicate previous studies of stereotype threat but expanding considerations of moderating factors to include perceived ability and gender identity measures. Stereotype threat is normally induced in research by the researcher making a verbal or providing a written statement of a stereotype around the task (e.g., Hively & El-Alayli, 2014). The research was to be carried out face-to-face with participants taking basketball free-throws and the stereotype threat being introduced verbally by the researcher (or a neutral statement in the control group). When the winter 2020-21 lockdown was announced and all organised sport ceased we were faced with limited options. These included completely changing the focus of the study or finding a way to stick with the original aims. Rather than disrupt the integrity of the research package across the doctorate, we considered if this research could be carried out with COVID-safety in mind. The intended story was rewritten and a new 'plot' was drafted.

[INSERT FIGURE 1 HERE]

Rewriting the story

The decision was made to try and maintain as close a design as possible to the original, since it was created for a specific rationale and to explore specific factors in gender stereotypes. Broadening the participant pool (e.g., including adults or mixed genders) to get a larger data set would have essentially negated the purpose of the study, given its intention to explore specific factors with the specific population (adolescent females). The design was therefore adapted to maintain the focus on the adolescent population. The study design was altered to allow remote research with participants guiding themselves through the experiment.

No previous examples of this approach could be located within the published literature. The closest design match is in health research where participants often take part individually via online self-guided interventions (e.g., Anderson-Bill, 2011; Epton et al., 2013; Shea et al., 2020). In these cases the entire involvement is computer-based; in the current study the internet was used as a tool to deliver the instructions and intervention for a task that took place offline. The design was guided by the aforementioned work in participant-led research in health and remote computer-based research .

British Psychological Society (BPS) guidance on researching during COVID-19 emphasised the importance of maintaining scientific integrity (BPS, 2020) and so this was a key consideration for us. Further, the BPS (2017) guidance on internet-mediated research provided considerations for any research that takes place in the absence of face-to-face co-presence. As a result, whilst our study adaptation was created from necessity and presents a novel approach to research, it was conducted with due attention to integrity and safeguarding of participants. It did not replace the originally planned study per se, but instead adds another layer of evidence to the research base on stereotype threat in adolescents. The intention is to return to the original ‘plot’ when restrictions allow, then

compare the results from the two studies to learn if different methodologies have an impact on the outcomes.

The design we created used a novel, self-guided, independent participation methodological approach. Participants were invited to participate via social media and direct invitation, and were required to have their own basketball and access to a basketball hoop in a COVID safe location (e.g., own garden or local park). They were also required to have access to a personal web-enabled mobile device (e.g., smartphone). Participants were advised to adhere to local restrictions and not to participate if they had any COVID-19 symptoms or were recovering from confirmed COVID-19 infection.

When potential participants decided to access the study, they used an internet link to view an information sheet and an accompanying consent form. If they decided to participate, then they completed the consent form online. Participants under 18 years old provided assent and parents/guardians provided consent within the same form. All those who demonstrated consent were then sent (via email) a link to participant instructions for either the control or experimental group. Group allocation was pseudo-randomised by the lead researcher via the order of completion of the consent form. Consideration was given for cases where the researcher was aware that participants were going to complete the task together (e.g., siblings). In these cases, the participants were allocated into the same group to remove any potential for them to become aware of the different group instructions ('contamination'). The participant instructions (provided online) guided the participants through a basketball task and accompanying questionnaires in a step-by-step format (see Figure 2). Participants completed the task at a basketball hoop available to them and used a personal mobile device (phone/tablet) to follow the instructions and record their data.

[INSERT FIGURE 2 HERE]

Prior to the basketball task (and introduction of stereotype threat) participants completed the sport subscale of the Self-Perception Profile for Adolescents (SPPA; Harter, 1988). All participants then took 10 basketball free-throws and recorded their score. Participants were instructed to take the free-throws in succession, without any time limit, and from the same location. The participants then read one of two statements (stereotype threat or neutral).

Participants were then instructed to immediately take the second 10 free-throws. The number of successful shots was again recorded by the participant as the performance indicator. Throughout the task, participants were reminded of the importance of being honest in their recording of their scores to try and limit inaccuracies. At the end of the study tasks participants were also asked how accurately they had followed the instructions to get an indication of likely error in the reporting. Four participants reported less than 100% accuracy and the lowest reported was 78% (*M*=98.1%). If participants had reported 100% adherence this would have raised concerns about reliability, but the honesty of slightly non-perfect adherence gives more confidence in the approach. Following the basketball task participants completed a questionnaire that included items measuring in-group identification with girls, the Bem Sex Role Inventory - Short (BSRI-S; Bem, 1981), and the assessment of how well they followed the task instructions. A short written debrief was then provided to participants emphasising that the stereotypes introduced were false. This was followed-up with a more detailed participant information sheet via email, including the opportunity to ask the researcher questions and to opt-in to receive the study results.

Researcher reflections & future implications

As the first study of its kind, this research provides us with a number of insights and opportunities. The main challenge encountered was the low conversion rate from initial interest to

participation. Of the 655 people who accessed the information sheet, only 20% converted to in-depth reads, 24 completed the consent form, and 20 took part. The remote nature of the data collection method used in this study did not allow any patterns to be detected in interested parties who did not progress to full involvement. This may be possible in future refinements, although the very nature of remote research will always hold some unknowns in this regard. While the lack of direct contact with potential participants in this approach may be the challenge for conversion rate, future studies should also try slightly different approaches to see if this rate could be improved. It may have been that the two-step (consent then instructions) approach resulted in the drop-off and a more immediate participation route would have better captured the initial interest. This logistical change should be feasible to apply.

This study demonstrated that it is possible for primary sport and exercise performance research to take place without researcher presence. This broadens the scope for future projects. Although it is recognised that this approach reduces researcher control, a measure of participant adherence was included to give insight into the study's rigour in data gathering (i.e., participant honesty = valid, reliable data). The importance of honesty was emphasised to participants throughout their instructions and a self-report measure of adherence to the instructions was included. This showed that participants were generally honest (rated at M=98.1%). This indicates that this methodology can be relied upon and its use could be expanded, but checks should be included to balance for the lack of direct management of rigour from in-person researcher administration.

As a template for future research, this approach likely reduces (or removes) the impact of observer effects. In this specific area of research, observer effects have been shown to moderate the impact of positive race stereotypes on performance in basketball shooting (Kendl et al., 2012) so this may also be relevant for gender stereotypes. Observer gender has also been shown to be significant in a non-sporting context (Iredale et al., 2008) and subtle stereotype threats can be generated

through the administration of research tasks by an out-group member (Marx & Goff, 2005). Being able to reduce the impact of the researcher on participant performance has wide implications for making research 'cleaner' and results more generalisable as it would remove bias created by the prototypical white, male researcher who influences the participant experience.

This design template can open up research to be more equitable and move participant selection beyond the often-used convenience samples. This methodology could remove cultural barriers that currently limit the opportunity for diverse populations, for example participants from cultures where physically being with non-family member males is not permitted. While the WEIRD bias stems from the high proportion of research being carried out by authors at Western universities (99% according to Arnett, 2008), this novel approach would allow a wider scope of participants to be reached, even if research continues to be predominantly led by academics affiliated with the global north, as is likely for the foreseeable future.

Beyond cultural aspects, there is evidence to suggest that adolescents with atypical development are more likely to be sedentary than those with typical development (e.g., Must et al., 2014; Pan, 2008). A research methodology that would allow participants with additional support needs to take part in a familiar setting without the stress of research observation or potentially unsettling social interaction would therefore increase the opportunity to consider a wider population in research. As well as including them within general research findings, this inclusion will allow greater knowledge to be gained to understand the best routes for support and interventions for growing physical activity in these groups.

Further refinement of the methodology is needed, but pandemic restrictions provided the impetus for an alternative route to opening up research participation. This will also allow research to continue during any future disruptions. The Red Queen Hypothesis states that such pandemics are inevitable as organisms must evolve increasingly quickly to keep up with each other (Dodds, 2019). As such, the development of this methodology would provide researchers with some pandemic-

proofing and so should be explored further even whilst other, more traditional options become available again.

Ultimately, participants could have taken part in this research from anywhere in the world. The only requirements were access to a basketball hoop, mobile phone, and understanding of the English language. The language requirement could easily be broadened in future studies where more resource is available, or through the use of online translation tools. If we are to challenge the limitations of current research participation, then researchers need to be brave enough to work differently and break out of the constraints of traditional research methodologies.

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Figures

Figure 1

Original research story 'plot'

Figure 2

Steps in the Novel Methodology