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# BMJ Open

## Lived experiences of disabled individuals in sport: a systematic review protocol

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3 1 **Lived experiences of disabled individuals in sport: a systematic review protocol**  
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3 27 **ARTICLE SUMMARY**  
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6 28 **Strengths and Limitations of this Study**  
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- 9 30
- 10 • First systematic review of the experiences of individuals with disabilities in sport and will  
11 help to provide a basis for future research and inform practice  
12 31
  - 13 32 • The protocol is written in accordance with the PRISMA-P guidelines and registered with  
14 PROSPERO  
15 33
  - 16 34 • This protocol states our *a priori* methods to enable data synthesis from qualitative and  
17 quantitative research, with the overall quality of evidence reported using GRADE  
18 35
  - 19 36 • One limitation is that only articles written in English will be included in the analysis.  
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3 49 **ABSTRACT**  
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6 50 **Introduction:** Sports participation has many physical and psychosocial benefits for individuals with  
7 51 disabilities. The increase in awareness of and participation in disability sport has led to a growth in  
8 52 research in this area; however there is no insight into the lived experiences of individuals with  
9 53 disabilities in sport across different sub-populations and ages. This systematic review will provide a  
10 54 basis for future research and add to the literature to help inform practices.

11 55 **Methods and PRISMA-P:** The phenomenon of interest is the lived experiences of individuals with  
12 56 disabilities in sport. Studies with participants from any background with a physical, visual or mental  
13 57 impairment who participate in sport will be included. There will be no participant age limit and all  
14 58 study designs, except systematic reviews, will be included. Non-English language studies will be  
15 59 excluded. Two independent reviewers will be involved at each stage. The online databases MEDLINE,  
16 60 EMBASE, PsychINFO, CINAHL Plus, Web of Science and SportDiscus will be electronically searched.  
17 61 Grey literature will be searched and relevant sport-related journals will be hand-searched. The Joanna  
18 62 Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) will be used for quality  
19 63 assessment of qualitative studies and the Quality Assessment Tool for Studies with Diverse Designs  
20 64 (QATSDD) will be used if both qualitative and quantitative studies are included. Thematic synthesis  
21 65 will be used to analyse the qualitative studies. If quantitative studies are included, a narrative synthesis  
22 66 will be used to analyse the data and an integration matrix created to juxtapose the data and determine  
23 67 themes. The strength of the overall body of evidence will be assessed and reported using a modified  
24 68 Grading of Recommendations, Assessment, Development and Evaluation (GRADE).

25 69 **Ethics and dissemination:** This systematic review raises no ethical issues. Results will be published in  
26 70 a peer reviewed journal and disseminated to key stakeholders to inform practice.  
27 71

28 72 **PROSPERO registration number:** CRD42020169224  
29 73

30 74 **Keywords:** sport, lived experience, disabled, systematic review  
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## 80 INTRODUCTION

### 81 Rationale

82 Disability sport provides individuals with different impairments the opportunity to experience the  
83 many physical and psychosocial benefits associated with physical activity.[1] However, over 40% of  
84 disabled adults are inactive in the UK and those with a higher number of impairments are most  
85 inactive; nearly half of those with 3 or more impairments reported being inactive.[2] These individuals  
86 also experience higher rates of chronic disease, with 46% of disabled individuals in the United States  
87 experiencing heart disease, cancer, diabetes or a stroke.[3] Research into physical activity in disabled  
88 individuals has demonstrated many benefits to wellbeing including improvements in mental health  
89 and activities of daily living, and increased socialisation, employment opportunities and self-worth  
90 across a wide range of disabilities and age groups.[4-6]

91  
92 Awareness and participation in disability sport has grown in recent years, with Sport England reporting  
93 that approximately 30% of disabled individuals in the UK have an active sports club membership.[7]  
94 The International Paralympic committee, established in 1989,[8] has been credited with the  
95 'Paralympic movement' which is responsible for an increase in sporting opportunities, inclusion of  
96 disabled individuals in sport and raising the profile of elite disability sport.[9-11] At the elite level,  
97 there has been a steady growth in participation at the Paralympic Games, from 3000 athletes and 83  
98 countries at Barcelona in 1992 to 4300 athletes and 160 countries at Rio 2016.[12] Paralympic sport  
99 funding has also grown, with UK Sport investing almost £73 million ahead of the Rio Paralympics  
100 compared to just £10 million for the Sydney Paralympic cycle (2000).[13] Research has suggested that  
101 sports participation is influenced by age and the type of disability, and also that finding the most  
102 appropriate sport for each individual increases and maintains participation.[14]

103  
104 This greater awareness and investment has prompted research into para-sport, where the beliefs,  
105 identities and self-perceptions of disabled athletes have been explored. [15-17] Sport has been found  
106 to promote self and social acceptance and enable a sense of competence and pride in a population of  
107 Paralympic swimmers, however these findings are not transferrable to other sports.[15] Another  
108 study has reported that sport promotes independence and empowerment in para-athletes, giving  
109 them an opportunity to reinvent themselves.[17] However due to the participants' nationality, the  
110 results obtained may be Singaporean phenomena and therefore not transferrable to other countries  
111 and cultures. This review will synthesise the data on the disability athlete experience across sports in  
112 order to determine areas for future research and inform practice in this population. In disabled  
113 veterans, sports participation has been shown to improve quality of life, increasing confidence and

1  
2  
3 114 motivation whilst also providing an opportunity for camaraderie.[18] Additionally, one systematic  
4  
5 115 review has reported that sport and physical activity play a role in improving the wellbeing and  
6  
7 116 rehabilitation of veterans after physical and psychological trauma, facilitating personal growth and  
8  
9 117 development.[19] This study proposed a potentially essential difference between 'sport' and 'physical  
10  
11 118 activity' and the impact on the veterans' wellbeing, and suggested that future research should take  
12  
13 119 this into account. Therefore this systematic review will look specifically at the sport experiences of  
14  
15 120 veterans in order to provide more specific recommendations for research and practice.

16 121

17 122 To the best of the authors' knowledge, this review will be the first to synthesise the literature on the  
18  
19 123 perceived health benefits of sport across different disabled populations and age ranges. Furthermore,  
20  
21 124 as sports participation is influenced by age, [14] it is possible that the sport experiences also differ, so  
22  
23 125 this will be explored in children, adolescent and adults. The synthesis of literature on the disability  
24  
25 126 sport experience in different populations and age groups will provide a basis for future research and  
26  
27 127 offer evidence that can help to inform practice.

## 28 128 **Objectives**

29  
30 129 Aim: To explore the lived experiences of disabled individuals in sport.

- 31  
32 130 1. To examine the perceived health benefits of sport in disabled populations.  
33  
34 131 2. To explore the lived experiences of children and adolescents in sport.  
35  
36 132 3. To explore the lived experiences of elite disability athletes and disabled veterans in sport.

37 133

## 38 39 134 **METHODS**

40  
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42 135 This systematic review protocol follows the Preferred Reporting Items of Systematic Review and Meta-  
43  
44 136 analysis Protocols (PRISMA-P) 2015 statement (See Supplementary file 1). [20] This protocol and  
45  
46 137 search has been designed involving subject-specific expertise in the form of leading experts in the field  
47  
48 138 of elite disability sport (PM, NH) and methodological expertise in the form of extensive systematic  
49  
50 139 review publications (AR, NH). The protocol was registered with the International Prospective Register  
51  
52 140 of Systematic Reviews (PROSPERO) (registration number: CRD42020169224).

53 141

### 54 142 **Eligibility criteria:**

55  
56 143 Eligibility criteria are informed using the Sample, Phenomenon of Interest, Design, Evaluation and  
57  
58 144 Research (SPIDER) concept which is designed for qualitative evidence synthesis. [21] Studies will be  
59  
60 145 eligible for inclusion in this review if they meet the following criteria:



146

147 *Sample:* Individuals with a physical, visual or mental impairment from any background who participate  
148 in sport, either competitively or recreationally. Individuals who are classed as disabled through old  
149 age or a medical condition (e.g. kidney disease, diabetes) will be excluded. There is no age limit on  
150 participants.

151 *Phenomenon of Interest:* The lived experiences of disabled individuals in sport.

152 *Designs:* All types of study designs will be considered. Systematic reviews will be excluded.

153 *Evaluation:* The lived experiences of disabled individuals in sport will be explored, which refers to the  
154 experiences of participating in sport as an impaired individual. The perceived health benefits of sport  
155 participation will be explored.

156 *Research type:* Qualitative research if just qualitative studies are included. Mixed-methods research  
157 both qualitative and quantitative studies are included.

158 Additionally studies written in languages other than English will be excluded.

### 159 **Information sources**

160 The databases Medline (Ovid interface), EMBASE (Ovid interface), PyschINFO (Ovid interface), Web of  
161 Science (Clarivate Analytics interface), CINAHL Plus (EBSCO interface) and SportDiscus (EBSCO  
162 interface) will be searched from database inception to February 2020. Grey literature sources,  
163 including OpenGrey, will be searched. Hand searching of the following journals will be conducted to  
164 complement the search strategy: *Qualitative Research in Sport, Exercise and Health, Psychology of*  
165 *Sport and Exercise, Disability and Rehabilitation, British Journal of Sports Medicine, European Journal*  
166 *of Sports Science* and *International Journal of Sports Science*. The screening of the references of  
167 included studies will also take place. Active researchers who have published literature in this field will  
168 be contacted.

### 169 **Search strategy**

170 The search will be conducted by the lead author (BA) in discussion with a second reviewer. Initial  
171 scoping searches have refined the search terms which will be kept broad to ensure a sensitive search  
172 strategy. Free text searches and subject heading searches will be carried out to ensure completeness  
173 of the search. The search strategy will be consistent however specific search terms will be adjusted  
174 for each database to reflect syntax differences (See Supplementary file 2 for MEDLINE search  
175 strategy).

### 176 **Study records**

1  
2  
3 177 Data management  
4

5 178 The results of the literature search will be imported into EndNote X9 [22] which will be used for data  
6  
7 179 management and reference storage. The citation, abstract and full text for all potentially eligible  
8  
9 180 studies will be stored to allow effective screening. Any duplicates will be removed prior to the  
10  
11 181 selection process.  
12

13 182 Selection process  
14

15 183 Two reviewers will independently screen titles and abstracts of studies to determine inclusion using  
16  
17 184 the pre-determined eligibility criteria. The eligibility criterion of eligible/not eligible/might be eligible  
18  
19 185 will be used to assess the studies. Studies will be excluded if it is clear from the title and abstract that  
20  
21 186 the content is not relevant to the objectives. When a study cannot be excluded based on the title and  
22  
23 187 abstract it will be graded as 'might be eligible'. After title and abstract screening, full-text copies of  
24  
25 188 the potentially relevant studies will be obtained and eligibility determined. Studies published in  
26  
27 189 languages other than English will be excluded. Studies will be also removed if the information available  
28  
29 190 is insufficient for assessment and synthesis, such as full-text copies not being available. These studies  
30  
31 191 will not be included in the synthesis but may be referenced in the discussion. Consensus between the  
32  
33 192 reviewers regarding study selection will be reached through a discussion and in the case where an  
34  
35 193 agreement is not reached a third reviewer will be consulted. Cohen's kappa will be used to assess the  
36  
37 194 chance-corrected agreement, inter-rater reliability, between the two reviewers in assessing the  
38  
39 195 eligibility of articles at the title/abstract stage and the full-text screening stage. [23] The study  
40  
41 196 selection process will be carried out according to the PRISMA flow diagram and reported visually. [24]  
42

43 197 Data collection process  
44

45 198 Data will be extracted from included studies using the standardised qualitative data extraction tool  
46  
47 199 from the Joanna Briggs Institute (See Supplementary file 3). [25] The form will be piloted first to ensure  
48  
49 200 completeness and suitability on five studies and amended if necessary. Data will be extracted  
50  
51 201 independently by two reviewers. In the event of a disagreement, a third reviewer will be consulted. If  
52  
53 202 data are missing or ambiguous, the authors of the study will be contacted via email for the required  
54  
55 203 additional information or any necessary clarification. The authors will receive a follow up email after  
56  
57 204 10 days and if they fail to respond within another 10 days, the study will be excluded.  
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57 206 **Data items**  
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207 Data will be presented in a table and data items will include: participant characteristics, context, study  
208 methods, phenomenon of interest and findings of each included study.

209

### 210 **Outcomes and prioritisation**

211 The experiences of children, adolescents, adults, elite athletes and veterans participating in disability  
212 sport constitute the phenomenon of interest. All experiences reported by these individuals, including  
213 experiences of the benefits, barriers and facilitators to sports participation, will be explored provided  
214 that there is sufficient evidence.

215

### 216 **Risk of bias in individual studies**

217 If only qualitative studies are included in the review, the Joanna Briggs Institute Qualitative  
218 Assessment and Review Instrument (JBI-QARI) will be used to provide a quality assessment (see  
219 supplementary file 4).[26] This tool is appropriate for and coherent in assessing qualitative studies due  
220 to its focus on congruity.[27] Alternatively, if both qualitative and quantitative studies are included the  
221 Quality Assessment Tool for Studies with Diverse Designs (QATSDD) will be used to create a quality  
222 rating score for all included studies (See Supplementary file 4).[28] This tool is suitable for quality  
223 assessment in mixed-methods designs as good validity, inter-rater reliability and test-retest reliability  
224 have been established.[28] A summary of the quality score for each study will be reported in a table.  
225 Two reviewers will independently carry out the quality assessment and if there is a lack of consensus  
226 between the reviewers after a discussion, the third reviewer will be consulted.

227

### 228 **Data synthesis**

229 Thematic synthesis is an appropriate method for the synthesis of qualitative evidence [29] and is based  
230 on thematic analysis, which is used for the analysis of primary research. [30] It will be conducted  
231 following the stages suggested by Thomas et al. [29] for qualitative evidence synthesis in systematic  
232 reviews. One reviewer (BA) will undertake line-by-line coding of the studies. Descriptive and analytical  
233 themes will be generated and two reviewers will review the themes and re-read the studies to ensure  
234 all relevant themes are identified. Should quantitative studies be eligible, a narrative synthesis of the  
235 quantitative studies will be undertaken independent of the qualitative analysis. This will involve a  
236 preliminary synthesis of the results of included studies and an exploration of the relationships within  
237 and between studies. [31] An integration matrix will be used to juxtapose the qualitative and

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2  
3 238 quantitative data to determine agreement or disagreement within identified themes.[32-34] The  
4  
5 239 synthesis will be conducted by BA and checked by two other reviewers with experience in thematic  
6  
7 240 synthesis and narrative synthesis.

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9 241 **Confidence in cumulative evidence**

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11 242 To assess the overall quality and strength of evidence, modified Grading of Recommendations,  
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13 243 Assessment, Development and Evaluation (GRADE) will be used.[35] GRADE is used rate the body of  
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15 244 evidence at the outcome level, [36] and will be modified so that it is suitable for the study designs  
16  
17 245 included in this review. This tool is appropriate as it has been widely adopted to grade the quality of  
18  
19 246 evidence, make recommendations and present summarises of evidence.[36-37] Two reviewers will  
20  
21 247 independently apply this approach and quality will be rated as 'high', 'moderate', 'low' or 'very  
22  
23 248 low'.[35]

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26  
27 250 **DISCUSSION**

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30 251 This systematic review will be the first to synthesise the literature on the lived experiences of disabled  
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32 252 individuals in sport. It will explore the experiences in different age groups, including  
33  
34 253 children/adolescents and adults, as well as in different disabled populations including elite disability  
35  
36 254 athletes and disabled veterans. The paucity of research in this area provides rationale for synthesising  
37  
38 255 the literature on the lived experiences of disabled individuals in sport, and will provide a clear basis to  
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40 256 guide further research and information to help inform practice. This protocol serves to provide a  
41  
42 257 detailed account of the rationale and methods to be used in the proposed systematic review to ensure  
43  
44 258 full transparency of the process. This study raises no ethical issues and any potential biases in the  
45  
46 259 review process will be reported in the discussion section of the final review paper. Any required  
47  
48 260 amendments to this protocol will be reported in the final systematic review and on PROSPERO along  
49  
50 261 with the date, description and rationale for amendment.

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53 263 **Patient and public involvement**

54  
55 264 This study and protocol have been informed through extensive contact with disabled individuals and  
56  
57 265 key stakeholders in the field in both a professional physiotherapy and clinical capacity, and in an  
58  
59 266 athletic capacity through contact with disabled athletes. Since no individual data is needed, disabled  
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3 267 individuals will not be involved in data collection or analysis. Key stakeholders may be contacted for  
4  
5 268 their input to the synthesis and interpretation of findings to inform results.  
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7

## 8 269 **Implications**

9  
10 270 It is anticipated that the findings from this systematic review will provide an insight into the lived  
11  
12 271 experiences of disabled individuals in sport, providing a basis for future research and helping to inform  
13  
14 272 practice.  
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## 19 274 **DECLARATIONS**

### 22 275 **Ethics and Dissemination**

23  
24  
25 276 No ethical approval is required for this systematic review. The findings from this systematic review  
26  
27 277 will be published in peer reviewed journals and disseminated to key stakeholders in disability sport.  
28  
29

### 30 278 **Author Contributions**

31  
32  
33 279 BA is an MSc by Research student at the University of Birmingham. AR and NH are supervisors. PM  
34  
35 280 and NH are experts in the field of disability sport. BA, AR, PM and NH contributed to the systematic  
36  
37 281 review topic. BA drafted the protocol with guidance and feedback from AR and NH. AR, PM and NH  
38  
39 282 reviewed the manuscript and commented on the protocol. All authors have approved and contributed  
40  
41 283 to the final manuscript.  
42

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46  
47 286 profit sectors  
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49

### 50 287 **Competing interests**

51  
52 288 None declared.  
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### 55 289 **Provenance and peer review**

56  
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58 290 Not commissioned; externally peer reviewed.  
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3 291 **Patient consent for publication**  
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6 292 Not required.  
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## Supplementary file 1.

### PRISMA-P 2015 Checklist

#### PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol

Section and topic	Item No	Checklist item	Signpost
<b>ADMINISTRATIVE INFORMATION</b>			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	P1. Lived experiences of disabled individuals in sport: a systematic review protocol
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	Not applicable
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	P1. PROSPERO: CRD42020161224
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	<p>P1. Beth Aitchison            University of Birmingham            Email: <a href="mailto:bla923@student.bham.ac.uk">bla923@student.bham.ac.uk</a></p> <p>Dr Nicola Heneghan            Lecturer in Physiotherapy            School of Sport, Exercise and Rehabilitation Sciences            College of Life and Environmental Sciences            University of Birmingham            Edgbaston, Birmingham,            B15 2TT, UK            Tel: 0121 415 8367            Email: <a href="mailto:n.heneghan@bham.ac.uk">n.heneghan@bham.ac.uk</a></p> <p>Dr Alison Rushton            University of Birmingham</p>

[a.b.rushton@bham.ac.uk](mailto:a.b.rushton@bham.ac.uk)

Paul Martin  
 Paralympic Sport Technical Lead  
 English Institute of Sport  
[Paul.Martin@eis2win.co.uk](mailto:Paul.Martin@eis2win.co.uk)

Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	P9. BA developed the protocol with guidance and feedback from NH and AR. BA is first reviewer and second reviewer is Marc Barr (MB). NH is third reviewer. All authors have contributed to the development of the protocol and will contribute to the data interpretation. All authors have approved the final manuscript.
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	Not applicable
Support:			
Sources	5a	Indicate sources of financial or other support for the review	P9. 'This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.'
Sponsor	5b	Provide name for the review funder and/or sponsor	Not applicable
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	Not applicable
<b>INTRODUCTION</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	P4 and P5. Introduction (rationale)
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	P5. Introduction (objectives)
<b>METHODS</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	P5 and P6. Eligibility criteria
Information sources	9	Describe all intended information sources (such as electronic	P6. Information sources.

		databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	P6 and P7 and supplemental file 2.
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	P7. Data management.
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	P7. Selection process
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	P7 and P8. Data collection process.
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	P8. Data items.
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	P8. Outcomes and prioritisation.
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	P8. Risk of bias in individual studies.
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	P8 and P9. Data synthesis.
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's $\tau$ )	P8 and P9. Data synthesis
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	Not applicable.
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	P8 and P9. Data synthesis.
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	P9. Discussion.

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Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	P9. Confidence in cumulative evidence.
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*From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g764*

For peer review only

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**Supplementary file 2.**

Search strategy for MEDLINE database.

1	Experience*.ti,ab.
2	Benefit*.ti,ab.
3	Involve*.ti,ab.
4	Participa*.ti,ab.
5	1 or 2 or 3 or 4
6	Disab*.ti,ab.
7	Impair*.ti,ab.
8	Wheelchair*.ti,ab.
9	Exp Disabled Persons/
10	(disab* ad5 veteran*).ti,ab.
11	(disab* adj3 athlete*).ti,ab.
12	(para* adj3 athlete*).ti,ab.
13	Paralympi*.ti,ab.
14	6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15	Sports for Persons with Disabilities/
16	Sports/
17	15 or 16
18	5 and 14 and 17

**Supplementary file 3.**

Joanna Briggs Institute data extraction tool for qualitative research.

**JBI QARI Data Extraction Tool for Qualitative Research**

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_

Journal \_\_\_\_\_ Record Number \_\_\_\_\_

**Study Description**

Methodology|

\_\_\_\_\_  
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Method

\_\_\_\_\_  
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Phenomena of interest

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Setting

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Geographical

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Cultural

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Participants

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Data analysis

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Authors conclusions

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Comments

\_\_\_\_\_  
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Complete

Yes

No

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Findings	Illustration form Publication (page number)	Evidence		
		Unequivocal	Credible	Unsupported

Extraction of findings complete Yes  No

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**Supplementary file 4.**

Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research

**JBI Critical Appraisal Checklist for Qualitative Research**

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_ Record Number \_\_\_\_\_

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal:    Include     Exclude     Seek further info

Comments (Including reason for exclusion)

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## Quality Assessment Tool for Studies with Diverse Designs

Criteria	0 = Not at all	1 = Very slightly	2 = Moderately	3 = Complete
Explicit theoretical framework	No mention at all.	Reference to broad theoretical basis.	Reference to a specific theoretical basis.	Explicit statement of theoretical framework and/or constructs applied to the research.
Statement of aims/objectives in main body of report	No mention at all.	General reference to aim/objective at some point in the report including abstract.	Reference to broad aims/objectives in main body of report.	Explicit statement of aims/objectives in main body of report.
Clear description of research setting	No mention at all.	General description of research area and background, e.g. 'in primary care'.	General description of research problem in the target population, e.g. 'among GPs in primary care'.	Specific description of the research problem and target population in the context of the study, e.g. nurses and doctors from GP practices in the east midlands.
Evidence of sample size considered in terms of analysis	No mention at all.	Basic explanation for choice of sample size. Evidence that size of the sample has been considered in study design.	Evidence of consideration of sample size in terms of saturation/information redundancy or to fit generic analytical requirements.	Explicit statement of data being gathered until information redundancy/saturation was reached or to fit exact calculates for analytical requirements.
Representative sample of target group of a reasonable size	No statement of target group.	Sample is limited but represents some of the target group or representative but very small.	Sample is somewhat diverse but not entirely representative, e.g. inclusive of all age groups, experience but only one workplace. Requires discussion of target population to determine what sample is required to be representative.	Sample includes individuals to represent a cross section of the target population, considering factors such as experience, age and workplace.
Description of procedure for data collection	No mention at all.	Very basic and brief outline of data collection procedure, e.g. 'using a questionnaire distributed to staff'.	States each stage of data collection procedure but with limited detail, or states some stages in details but omits others.	Detailed description of each stage of the data collection procedure, including when, where and how data were gathered.
Rationale for choice of data collection tools	No mention at all.	Very limited explanation for choice of data collection tools.	Basic explanation of rationale for choice of data collection tools, e.g. based on use in a prior similar study.	Detailed explanation of rationale for choice of data collection tools, e.g. relevance to the study aims and assessments of tool quality either statistically, e.g. for reliability & validity, or relevant qualitative assessment.
Detailed recruitment data	No mention at all.	Minimal recruitment data, e.g. no. of questionnaire sent and no. returned.	Some recruitment information but not complete account of the recruitment process, e.g. recruitment figures but no information on strategy used.	Complete data regarding no. approached, no. recruited, attrition data where relevant, method of recruitment.
Statistical assessment of reliability and validity of measurement tools	No mention at all.	Reliability and validity of measurement tool(s) discussed, but not statistically assessed.	Some attempt to assess reliability and validity of measurement tool(s) but insufficient, e.g. attempt to establish test-retest reliability is unsuccessful but no action is taken.	Suitable and thorough statistical assessment of reliability and validity of measurement tool(s) with reference to the quality of evidence as a result of the measures used.
Fit between stated research question and method of data collection (Quantitative)	No research question stated.	Method of data collection can only address some aspects of the research question.	Method of data collection can address the research question but there is a more suitable alternative that could have been used or used in addition.	Method of data collection selected is the most suitable approach to attempt answer the research question
Fit between stated research question and format and content of data collection tool e.g. interview schedule (Qualitative)	No research question stated.	Structure and/or content only suitable to address the research question in some aspects or superficially.	Structure & content allows for data to be gathered broadly addressing the stated research question(s) but could benefit from greater detail.	Structure & content allows for detailed data to be gathered around all relevant issues required to address the stated research question(s).
Fit between research question and method of analysis	No mention at all.	Method of analysis can only address the research question basically or broadly.	Method of analysis can address the research question but there is a more suitable alternative that could have been used or used in addition to offer greater detail.	Method of analysis selected is the most suitable approach to attempt answer the research question in detail, e.g. for qualitative IPA preferable for experiences vs. content analysis to elicit frequency of occurrence of events, etc.
Good justification for analytical method selected	No mention at all.	Basic explanation for choice of analytical method	Fairly detailed explanation of choice of analytical method.	Detailed explanation for choice of analytical method based on nature of research question(s).
Assessment of reliability of analytical process (Qualitative only)	No mention at all.	More than one researcher involved in the analytical process but no further reliability assessment.	Limited attempt to assess reliability, e.g. reliance on one method.	Use of a range of methods to assess reliability, e.g. triangulation, multiple researchers, varying research backgrounds.
Evidence of user involvement in design	No mention at all.	Use of pilot study but no involvement in planning stages of study design.	Pilot study with feedback from users informing changes to the design.	Explicit consultation with steering group or statement of formal consultation with users in planning of study design.
Strengths and limitations critically discussed	No mention at all.	Very limited mention of strengths and limitations with omissions of many key issues.	Discussion of some of the key strengths and weaknesses of the study but not complete.	Discussion of strengths and limitations of all aspects of study including design, measures, procedure, sample & analysis.

# BMJ Open

## The experiences and perceived health benefits of individuals with a disability participating in sport: a systematic review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2020-038214.R1
Article Type:	Protocol
Date Submitted by the Author:	05-Jun-2020
Complete List of Authors:	Aitchison, Beth; University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences Rushton, Alison; University of Birmingham, Centre of Precision Rehabilitation for Spinal Pain Martin, Paul; English Institute of Sport Soundy, Andrew; University of Birmingham, Heneghan, Nicola; University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences
<b>Primary Subject Heading</b>:	Public health
Secondary Subject Heading:	Evidence based practice, Public health, Rehabilitation medicine
Keywords:	REHABILITATION MEDICINE, PUBLIC HEALTH, SOCIAL MEDICINE

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Manuscripts



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3 1 **The experiences and perceived health benefits of individuals with a disability participating in sport:**  
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5 2 **a systematic review protocol**  
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8 3 **Authors**  
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3 27 **ABSTRACT**  
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6 28 **Introduction:** Sports participation has many physical and psychosocial benefits for individuals with a  
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8 29 disability. The increase in awareness of and participation in disability sport has led to a growth in  
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10 30 research in this area; however there is little insight into the experiences of children and adolescents,  
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12 31 adults, elite athletes and veterans with a disability participating in sport. This systematic review will  
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14 32 provide a basis for future research and add to the literature to help inform practice.

15 33 **Methods and PRISMA-P:** The phenomenon of interest is the experiences and perceived health  
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17 34 benefits of individuals with a disability participating in sport. There will be no age limit on participants  
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19 35 and all study designs, besides systematic reviews, will be included. Studies in languages other than  
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21 36 English will be excluded. Two independent reviewers will be involved at each stage. The online  
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23 37 databases MEDLINE, EMBASE, PsychINFO, CINAHL Plus, Web of Science and SportDiscus will be  
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25 38 electronically searched from database inception to February 2020. Grey literature will be searched  
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27 39 and several sport-related journals will be hand-searched. The Joanna Briggs Institute Qualitative  
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29 40 Assessment and Review Instrument (JBI-QARI) will be used for quality assessment of qualitative  
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31 41 studies and if both qualitative and quantitative studies are included, the Quality Assessment Tool for  
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33 42 Studies with Diverse Designs (QATSDD) will be used instead. Thematic synthesis will be used to analyse  
34  
35 43 the qualitative studies. If quantitative studies are included, a narrative synthesis will be used to analyse  
36  
37 44 the data and an integration matrix created to juxtapose the data and determine themes. The strength  
38  
39 45 of the overall body of evidence will be reported using modified Grading of Recommendations,  
40  
41 46 Assessment, Development and Evaluation (GRADE).

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43 47 **Ethics and dissemination:** This systematic review raises no ethical issues. Results will be published in  
44  
45 48 a peer reviewed journal and disseminated to key stakeholders to inform practice.  
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49 50 **PROSPERO registration number:** CRD42020169224  
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53 54 **Keywords:** sport, experience, disabled, systematic review  
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3 58 **ARTICLE SUMMARY**  
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6 59 **Strengths and Limitations of this Study**  
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- 9 61
- This is the first systematic review to synthesise evidence on the experiences and perceived health benefits of individuals with a disability participating in sport.
- 11 62
- Rigorous methods will be applied at all stages of the review to inform levels of evidence for individual outcomes.
- 13 63
- Only articles written in English will be included in the analysis.
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## 84 INTRODUCTION

### 85 Rationale

86 Disability sport provides individuals with different impairments the opportunity to experience the  
87 many physical and psychosocial benefits associated with physical activity.[1] These benefits include  
88 improvements in mental health, activities of daily living, socialisation, employment opportunities and  
89 perceived self-worth across a wide range of disabilities and age-groups.[2-4] However, over 40% of  
90 disabled adults are inactive in the UK.[5] Almost half of those with 3 or more impairments, including  
91 a physical disability, chronic health condition or mental health condition, are inactive.[5] Individuals  
92 with a vision, cognitive or mobility disability also experience higher rates of chronic disease. In the  
93 United States, over 40% of disabled individuals experience heart disease, cancer, diabetes or a stroke  
94 compared to just 13.7% of those without a disability.[6]

95  
96 Awareness and participation in disability sport has grown in recent years, with Sport England reporting  
97 that approximately 30% of individuals with a disability in the UK have an active sports club  
98 membership and had participated at least twice in the last month.[7] This is consistent with the  
99 findings of Krane and Orkis [8] who reported that 30% of American adults with disabilities were  
100 regularly participating in sports or physical activity. The International Paralympic committee,  
101 established in 1989,[9] has been credited with the 'Paralympic Movement' which is responsible for an  
102 increase in sporting opportunities, inclusion of individuals with a disability in sport and raising the  
103 profile of elite disability sport.[10-12] At the elite level, there has been a steady growth in participation  
104 at the Paralympic Games, from 2999 athletes and 83 countries at Barcelona in 1992 to 4328 athletes  
105 and 160 countries at Rio 2016.[13] Paralympic sport funding has also grown, with UK Sport investing  
106 almost £73 million in the four year cycle before Rio Paralympics Games compared to just £10 million  
107 for the Sydney Paralympic Games cycle (2000).[14]

108  
109 This greater awareness and investment has prompted research into para-sport, where the beliefs,  
110 identities and self-perceptions of athletes with a disability have been explored. [15-17] At the elite-  
111 level, sport has been found to promote both self-acceptance and social acceptance and enables a  
112 sense of competence and pride. [15] Another study has reported that sport promotes independence  
113 and empowerment in elite para-athletes, giving them an opportunity to reinvent themselves.[17]  
114 These studies were conducted specifically in Paralympic swimmers [15], and in elite Singaporean para-  
115 athletes [17], therefore further investigation may be needed into other sports and countries.

116

1  
2  
3 117 In veterans with a disability, sports participation has been shown to improve quality of life, increasing  
4  
5 118 confidence and motivation whilst also providing an opportunity for camaraderie.[18] Additionally, one  
6  
7 119 systematic review has reported that sport and physical activity play a role in improving the wellbeing  
8  
9 120 and rehabilitation of veterans after physical and psychological trauma, facilitating personal growth  
10  
11 121 and development.[19] This study proposed a potentially essential difference between 'sport' and  
12  
13 122 'physical activity' and the impact on the veterans' wellbeing, and suggested that future research  
14  
15 123 should take this into account.

16 124

17 125 In the general population, the personal and environmental barriers and facilitators to sports  
18  
19 126 participation have been reported to be different in children and adolescents with a disability  
20  
21 127 compared to adults with a disability.[20] For instance, enjoyment and relaxation were the main  
22  
23 128 facilitators to sport in the younger population, whereas health, fitness and goal setting were important  
24  
25 129 to adults.[20] These differences suggest that other aspects of the sport experiences may differ  
26  
27 130 between these populations, such as participant perceived benefits.

28 131

29 132 Therefore the aim of this review is to synthesise the literature on the disability sport experience and  
30  
31 133 participant perceived health benefits of sport in children and adolescents, adults, elite athletes and  
32  
33 134 veterans with a disability. To the best of the authors' knowledge, this review will be the first to  
34  
35 135 synthesise the evidence on the disability sport experience in these different populations and will  
36  
37 136 provide a basis for future research and offer evidence that can help to inform practice.

### 38 137 **Objectives**

39  
40 138 Aim: To explore the experiences and perceived health benefit of individuals with a disability  
41  
42 139 participating in sport.

- 43 140 1. To examine the perceived health benefits of participating in disability sport for children and  
44  
45 141 adolescents, adults, elite athletes and veterans with a disability.  
46  
47 142 2. To explore the experiences of children and adolescents, adults, elite athletes and veterans  
48  
49 143 with a disability participating in disability sport.

50 144

### 51 145 **METHODS**

52  
53 146 This systematic review protocol follows the Preferred Reporting Items of Systematic Review and Meta-  
54  
55 147 analysis Protocols (PRISMA-P) 2015 statement (supplementary file 1).[21] This protocol and search  
56  
57 148 has been designed involving subject-specific expertise in the form of leading experts in the field of  
58  
59 149 elite disability sport (PM, NH) and methodological expertise in the form of extensive systematic review



1  
2  
3 150 publications (AR, NH). The protocol was registered with the International Prospective Register of  
4  
5 151 Systematic Reviews (PROSPERO registration number: CRD42020169224).

6 152

7  
8 153 **Eligibility criteria:**

9  
10 154 Eligibility criteria are informed using the Sample, Phenomenon of Interest, Design, Evaluation and  
11  
12 155 Research (SPIDER) concept which is designed for qualitative evidence synthesis.[22] Studies will be  
13  
14 156 eligible for inclusion in this review if they meet the following criteria:

15 157

16 158 *Sample:* Individuals with a physical, visual or mental impairment from any background who regularly  
17  
18 159 ( $\geq$  once per week) participate in sport, either competitively or recreationally. Individuals who are  
19  
20 160 classed as disabled through old age (eg. >60 years old) or a medical condition (eg. Kidney disease,  
21  
22 161 diabetes) will be excluded. There is no age limit on participants.

23 162 *Phenomenon of Interest:* The experiences of individuals with a disability participating in sport and the  
24  
25 163 perceived health benefits of sport.

26 164 *Designs:* All types of study designs will be considered including phenomenology, grounded theory,  
27  
28 165 discourse analysis, narrative analysis and cross-sectional research. Systematic reviews will be  
29  
30 166 excluded. Studies written in languages other than English will be excluded.

31 167 *Evaluation:* Any reported experiences by individuals with a disability in sport will be explored. The  
32  
33 168 perceived health benefits of sport participation will be explored via studies which have reported  
34  
35 169 participant perceived health benefits

36 170 *Research type:* Research including qualitative methods or where combined with quantitative methods  
37  
38 171 results from both (mixed methods) will be included.

39  
40 172 This systematic review will be qualitative research should the studies retrieved are be qualitative in  
41  
42 173 nature. Should both qualitative and quantitative studies be included in the analysis, the systematic  
43  
44 174 review will be mixed methods.

45  
46 175 **Information sources**

47  
48 176 The databases Medline (Ovid interface), EMBASE (Ovid interface), PyschINFO (Ovid interface), Web of  
49  
50 177 Science (Clarivate Analytics interface), CINAHL Plus (EBSCO interface) and SportDiscus (EBSCO  
51  
52 178 interface) will be searched from database inception to February 2020. Grey literature sources,  
53  
54 179 including OpenGrey, will be searched. Hand searching of the following journals will be conducted to  
55  
56 180 complement the search strategy: *Qualitative Research in Sport, Exercise and Health, Psychology of*  
57  
58 181 *Sport and Exercise, Disability and Rehabilitation, British Journal of Sports Medicine, European Journal*  
59  
60 182 *of Sports Science and International Journal of Sports Science.* The screening of the references of

1  
2  
3 183 included studies will also take place. Active researchers who have published literature in this field will  
4  
5 184 be contacted.

6  
7  
8 185 **Search strategy**

9  
10 186 The search will be conducted independently by the lead author (BA) and a second reviewer. Initial  
11  
12 187 scoping searches have refined the search terms for the databases which will be kept broad to ensure  
13  
14 188 a sensitive search strategy. Free text searches and subject heading searches will be carried out to  
15  
16 189 ensure completeness of the search. The search strategy will be consistent however specific search  
17  
18 190 terms will be adjusted for each database to reflect syntax differences (see supplementary file 2 for  
19  
20 191 MEDLINE search strategy).

21 192 **Study records**

22  
23 193 **Data management**

24  
25  
26 194 The results of the literature search will be imported into EndNote X9 [23] which will be used for data  
27  
28 195 management and reference storage. The citation, abstract and full text for all potentially eligible  
29  
30 196 studies will be stored to allow effective screening. Any duplicates will be removed prior to the  
31  
32 197 selection process.

33  
34 198 **Selection process**

35  
36 199 The lead author (BA) and a second reviewer will independently screen titles and abstracts of studies  
37  
38 200 to determine inclusion using the pre-determined eligibility criteria. The eligibility criterion of  
39  
40 201 eligible/not eligible/might be eligible will be used to assess the studies. Studies will be excluded if it is  
41  
42 202 clear from the title and abstract that the content is not relevant to the objectives. When a study cannot  
43  
44 203 be excluded based on the information provided in the title and abstract it will be graded as 'might be  
45  
46 204 eligible'. After title and abstract screening, full-text copies of the potentially relevant studies will be  
47  
48 205 obtained and eligibility determined. Studies published in languages other than English will be  
49  
50 206 excluded. Studies will also be removed if the information available is insufficient for assessment and  
51  
52 207 synthesis, such as full-text copies not being available. These studies will not be included in the  
53  
54 208 synthesis but may be referenced in the discussion section. Consensus between the reviewers  
55  
56 209 regarding study selection will be reached through a discussion and in the case where an agreement is  
57  
58 210 not reached a third reviewer will be consulted. Cohen's kappa will be used to assess the chance-  
59  
60 211 corrected agreement, inter-rater reliability, between the two reviewers in assessing the eligibility of  
212  
213 212 articles at the title/abstract stage and the full-text screening stage.[24] The study selection process  
will be carried out according to the PRISMA flow diagram and reported visually.[25]

1  
2  
3 214 Data collection process  
4

5 215 Data will be extracted independently by the lead author and second reviewer from included studies  
6  
7 216 using the standardised qualitative data extraction tool from the Joanna Briggs Institute (see  
8  
9 217 supplementary file 3).[26] The form will be piloted first to ensure completeness and suitability on five  
10  
11 218 studies and amended if necessary to include criteria such as study design should the systematic review  
12  
13 219 be mixed-methods in design. In the event of a disagreement between the two reviewers in data  
14  
15 220 extracted, a third reviewer will be consulted. .  
16

17 221

#### 18 222 **Data items**

19  
20 223 Data will be presented in a table and data items will include: participant information, context, study  
21  
22 224 methods, phenomenon of interest and findings of each included study.  
23

24 225

#### 25 26 226 **Outcomes and prioritisation**

27  
28 227 The experiences and perceived health benefits of children and adolescents, adults, elite athletes and  
29  
30 228 veterans with a disability participating in disability sport constitute the phenomenon of interest. All  
31  
32 229 experiences reported by these individuals, including experiences of the benefits, barriers and  
33  
34 230 facilitators to sports participation, will be explored provided that there is sufficient evidence.  
35

36 231

#### 37 38 232 **Risk of bias in individual studies**

39  
40  
41 233 If only qualitative studies are included in the review, the Joanna Briggs Institute Qualitative  
42  
43 234 Assessment and Review Instrument (JBI-QARI) will be used to provide a quality assessment (see  
44  
45 235 supplementary file 4).[27] This tool is appropriate for and coherent in assessing qualitative studies due  
46  
47 236 to its focus on congruity and has been extensively peer reviewed[28, 29] Alternatively, if both  
48  
49 237 qualitative and quantitative studies are included the Quality Assessment Tool for Studies with Diverse  
50  
51 238 Designs (QATSDD) will be used to create a quality rating score for all included studies (see  
52  
53 239 supplementary file 4).[30] This tool is suitable for quality assessment in mixed-methods designs as  
54  
55 240 good validity, inter-rater reliability and test-retest reliability have been established and it allows an in-  
56  
57 241 depth understanding of the included review papers.[30, 31] A summary of the quality score, and  
58  
59 242 converted percentage score, for each study will be reported in a table. Two reviewers will  
60  
243 independently carry out the quality assessment and if there is a lack of consensus between the  
244 reviewers after a discussion, the third reviewer will be consulted. If additional information is required

1  
2  
3 245 from authors, such as an interview topic guide, the authors will be contacted for this information to  
4  
5 246 facilitate quality assessment.  
6

7 247

## 10 248 **Data synthesis**

11  
12 249 Thematic synthesis is an appropriate method for the synthesis of qualitative evidence [32] and is based  
13  
14 250 on thematic analysis, which is used for the analysis of primary research.[33] It will be conducted  
15  
16 251 following the stages suggested by Thomas et al.[32] for qualitative evidence synthesis in systematic  
17  
18 252 reviews. The lead author (BA) will undertake line-by-line coding of the studies and generate  
19  
20 253 descriptive and analytical themes. The themes generated will be reviewed by a further two reviewers  
21  
22 254 (NH/AS). Should quantitative studies be eligible, a narrative synthesis of the quantitative studies will  
23  
24 255 be undertaken independent of the qualitative analysis. This will involve a preliminary synthesis of the  
25  
26 256 results of included studies and an exploration of the relationships within and between studies.[34] An  
27  
28 257 integration matrix will be used to juxtapose the qualitative and quantitative data to determine  
29  
30 258 agreement or disagreement within identified themes.[35-37]The synthesis will be conducted by BA  
31  
32 259 and checked by two other reviewers with experience in thematic synthesis and narrative synthesis.

## 32 260 **Confidence in cumulative evidence**

33  
34 261 To assess the overall quality and strength of evidence, modified Grading of Recommendations,  
35  
36 262 Assessment, Development and Evaluation (GRADE) will be used.[38] GRADE is used rate the body of  
37  
38 263 evidence at the outcome level,[39] and is appropriate as it has been widely adopted to grade the  
39  
40 264 quality of evidence, make recommendations and present summarises of evidence.[39-40]  
41  
42 265 Observational data is usually regarded as low quality, however these studies may be upgraded in  
43  
44 266 quality when there is a 'large magnitude of effect' for instance.[39] Two reviewers will independently  
45  
46 267 assess the overall body of evidence which will be rated as 'high', 'medium', 'low' or 'very low'. A high  
47  
48 268 rating would conclude that further research is not likely to greatly impact on confidence of findings  
49  
50 269 and a low rating would suggest an uncertainty of effect and the need for further research.

51 270

## 53 271 **DISCUSSION**

54  
55  
56 272 This systematic review will be the first to synthesise the literature on the experiences of individuals  
57  
58 273 with a disability participating in sport. It will explore the sport experiences in different populations  
59  
60 274 including children and adolescents, adults, elite athletes and veterans with a disability. The paucity of

1  
2  
3 275 research in this area provides rationale for synthesising the evidence, and will provide a clear basis to  
4  
5 276 guide further research in this area and provide information to help inform practice surrounding  
6  
7 277 participation in disability sport. This protocol serves to provide a detailed account of the rationale and  
8  
9 278 methods to be used in the proposed systematic review to ensure full transparency of the process. This  
10  
11 279 study raises no ethical issues and any potential biases in the review process will be reported in the  
12  
13 280 discussion section of the final review paper. Any required amendments to this protocol will be  
14  
15 281 reported in the final systematic review and on PROSPERO along with the date, description and  
16  
17 282 rationale for amendment.

18 283

#### 20 284 **Patient and public involvement**

23 285 This study and protocol have been informed through extensive contact with key stakeholders in the  
24  
25 286 field in both a professional physiotherapy and clinical capacity, and in an athletic capacity through  
26  
27 287 contact with disabled athletes. Since no individual data is needed, disabled individuals will not be  
28  
29 288 involved in data collection or analysis. Key stakeholders may be contacted for their input to the  
30  
31 289 synthesis and interpretation of findings to inform results.

#### 33 290 **Implications**

36 291 It is anticipated that the findings from this systematic review will provide an insight into the lived  
37  
38 292 experiences of disabled individuals in sport, providing a basis for future research and helping to inform  
39  
40 293 practice.

42 294

#### 45 295 **DECLARATIONS**

##### 48 296 **Ethics and Dissemination**

51 297 No ethical approval is required for this systematic review. The findings from this systematic review  
52  
53 298 will be published in peer reviewed journals and disseminated to key stakeholders in disability sport.

##### 55 299 **Author Contributions**

58 300 BA is an MSc by Research student at the University of Birmingham. AR, AS and NH are supervisors. PM  
59  
60 301 and NH are experts in the field of disability sport. BA, AR, AS, PM and NH contributed to the systematic

1  
2  
3 302 review topic. BA drafted the protocol with guidance and feedback from AR, AS and NH. AR, PM, AS  
4  
5 303 and NH reviewed the manuscript and commented on the protocol. All authors have approved and  
6  
7 304 contributed to the final manuscript.

8  
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10  
11  
12 306 This research received no specific grant from any funding agency in the public, commercial or not-for-  
13  
14 307 profit sectors

15  
16 308 **Competing interests**

17  
18  
19 309 None declared.

20  
21  
22 310 **Provenance and peer review**

23  
24  
25 311 Not commissioned; externally peer reviewed.

26  
27  
28 312 **Patient consent for publication**

29  
30  
31 313 Not required.

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43 417 2008 Apr 24;336(7650):924-6.  
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Supplementary file 1.

PRISMA-P 2015 Checklist

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol

Section and topic	Item No	Checklist item	Signpost
<b>ADMINISTRATIVE INFORMATION</b>			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	P1. The experiences and perceived health benefits of individuals with a disability participating in sport: a systematic review protocol
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	Not applicable
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	P1. PROSPERO: CRD42020161224
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	<p>P1. Beth Aitchison                      University of Birmingham                      Email: <a href="mailto:bla923@student.bham.ac.uk">bla923@student.bham.ac.uk</a></p> <p>Dr Nicola Heneghan                      Lecturer in Physiotherapy                      School of Sport, Exercise and Rehabilitation Sciences                      College of Life and Environmental Sciences                      University of Birmingham                      Edgbaston, Birmingham,                      B15 2TT, UK                      Tel: 0121 415 8367                      Email: <a href="mailto:n.heneghan@bham.ac.uk">n.heneghan@bham.ac.uk</a></p> <p>Dr Alison Rushton                      University of Birmingham</p>

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Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	P11. BA developed the protocol with guidance and feedback from NH, AR and AS. BA is first reviewer and second reviewer is Marc Barr (MB). NH and AS are third and fourth reviewers. All authors have contributed to the development of the protocol and will contribute to the data interpretation. All authors have approved the final manuscript.
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	Not applicable
Support:			
Sources	5a	Indicate sources of financial or other support for the review	P11. 'This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.'
Sponsor	5b	Provide name for the review funder and/or sponsor	Not applicable
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	Not applicable
<b>INTRODUCTION</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	P4 and P5. Introduction (rationale)
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	P5. Introduction (objectives)
<b>METHODS</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting,	P6. Eligibility criteria.

		time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	P6 and P7. Information sources.
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	P7 and supplementary file 2
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	P7. Data management.
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	P7 and P8. Selection process.
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	P8. Data collection process.
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	P8. Data items.
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	P8. Outcomes and prioritisation.
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	P8 and P9. Risk of bias in individual studies.
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	P9. Data synthesis.
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's $\tau$ )	P9. Data synthesis
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	Not applicable.
	15d	If quantitative synthesis is not appropriate, describe the type of	P9. Data synthesis.

		summary planned	
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	P10. Discussion.
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	P9. Confidence in cumulative evidence.

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ*. 2015 Jan 2;349(jan02 1):g764

**Supplementary file 2.**

Search strategy for MEDLINE database.

1	Experience*.ti,ab.
2	Benefit*.ti,ab.
3	Involve*.ti,ab.
4	Participa*.ti,ab.
5	1 or 2 or 3 or 4
6	Disab*.ti,ab.
7	Impair*.ti,ab.
8	Wheelchair*.ti,ab.
9	Exp Disabled Persons/
10	(disab* ad5 veteran*).ti,ab.
11	(disab* adj3 athlete*).ti,ab.
12	(para* adj3 athlete*).ti,ab.
13	Paralympi*.ti,ab.
14	6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15	Sports for Persons with Disabilities/
16	Sports/
17	15 or 16
18	5 and 14 and 17

Ti = title

Ab = abstract

**Supplementary file 3.**

Joanna Briggs Institute data extraction tool for qualitative research.

**JBIR QARI Data Extraction Tool for Qualitative Research**

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_

Journal \_\_\_\_\_ Record Number \_\_\_\_\_

**Study Description**

Methodology|

\_\_\_\_\_  
\_\_\_\_\_

Method

\_\_\_\_\_  
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Phenomena of interest

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Setting

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Geographical

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Cultural

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Participants

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Data analysis

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Authors conclusions

\_\_\_\_\_  
\_\_\_\_\_

Comments

\_\_\_\_\_  
\_\_\_\_\_

Complete

Yes

No

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## Supplementary file 4.

Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research

**JBI Critical Appraisal Checklist for Qualitative Research**

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_ Record Number \_\_\_\_\_

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include  Exclude  Seek further info 

Comments (Including reason for exclusion)

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Quality Assessment Tool for Studies with Diverse Designs

Criteria	0 = Not at all	1 = Very slightly	2 = Moderately	3 = Completely
Explicit theoretical framework	No mention at all.	Reference to broad theoretical basis.	Reference to a specific theoretical basis.	Explicit statement of theoretical framework and/or constructs applied to the research.
Statement of aims/objectives in main body of report	No mention at all.	General reference to aim/objective at some point in the report including abstract.	Reference to broad aims/objectives in main body of report.	Explicit statement of aims/objectives in main body of report.
Clear description of research setting	No mention at all.	General description of research area and background, e.g. 'in primary care'.	General description of research problem in the target population, e.g. 'among GPs in primary care'.	Specific description of the research problem and target population in the context of the study, e.g. nurses and doctors from GP practices in the east midlands.
Evidence of sample size considered in terms of analysis	No mention at all.	Basic explanation for choice of sample size. Evidence that size of the sample has been considered in study design.	Evidence of consideration of sample size in terms of saturation/information redundancy or to fit generic analytical requirements.	Explicit statement of data being gathered until information redundancy/saturation was reached or to fit exact calculations for analytical requirements.
Representative sample of target group of a reasonable size	No statement of target group.	Sample is limited but represents some of the target group or representative but very small.	Sample is somewhat diverse but not entirely representative, e.g. inclusive of all age groups, experience but only one workplace. Requires discussion of target population to determine what sample is required to be representative.	Sample includes individuals to represent a cross section of the target population, considering factors such as experience, age and workplace.
Description of procedure for data collection	No mention at all.	Very basic and brief outline of data collection procedure, e.g. 'using a questionnaire distributed to staff'.	States each stage of data collection procedure but with limited detail, or states some stages in details but omits others.	Detailed description of each stage of the data collection procedure, including when, where and how data were gathered.
Rationale for choice of data collection tool(s)	No mention at all.	Very limited explanation for choice of data collection tool(s).	Basic explanation of rationale for choice of data collection tool(s), e.g. based on use in a prior similar study.	Detailed explanation of rationale for choice of data collection tool(s), e.g. relevance to the study aims and assessments of tool quality either statistically, e.g. for reliability & validity, or relevant qualitative assessment.
Detailed recruitment data and no. returned	No mention at all.	Minimal recruitment data, e.g. no. of questionnaire sent and no. returned.	Some recruitment information but not complete account of the recruitment process, e.g. recruitment figures but no information on strategy used.	Complete data regarding no. approached, no. recruited, attrition data where relevant, method of recruitment.
Statistical assessment of reliability and validity of measurement tool(s)	No mention at all.	Reliability and validity of measurement tool(s) discussed, but not statistically assessed.	Some attempt to assess reliability and validity of measurement tool(s) but insufficient, e.g. attempt to establish test-retest reliability is unsuccessful but no action is taken.	Suitable and thorough statistical assessment of reliability and validity of measurement tool(s) with reference to the quality of evidence as a result of the measures used.
Fit between stated research question and method of data collection (Quantitative only)	No research question stated.	Method of data collection can only address some aspects of the research question.	Method of data collection can address the research question but there is a more suitable alternative that could have been used or used in addition.	Method of data collection selected is the most suitable approach to attempt answer the research question
Fit between stated research question and content of data collection tool e.g. interview schedule (Qualitative)	No research question stated.	Structure and/or content only suitable to address the research question in some aspects or superficially.	Structure & content allows for data to be gathered broadly addressing the stated research question(s) but could benefit from greater detail.	Structure & content allows for detailed data to be gathered around all relevant issues required to address the stated research question(s).
Fit between research question and method of analysis	No mention at all.	Method of analysis can only address the research question basically or broadly.	Method of analysis can address the research question but there is a more suitable alternative that could have been used or used in addition to offer greater detail.	Method of analysis selected is the most suitable approach to attempt answer the research question in detail, e.g. for qualitative IPA preferable for experiences vs. content analysis to elicit frequency of occurrence of events, etc.
Good justification for analytical method selected	No mention at all.	Basic explanation for choice of analytical method	Fairly detailed explanation of choice of analytical method.	Detailed explanation for choice of analytical method based on nature of research question(s).
Assessment of reliability of analytical process (Qualitative only)	No mention at all.	More than one researcher involved in the analytical process but no further reliability assessment.	Limited attempt to assess reliability, e.g. reliance on one method.	Use of a range of methods to assess reliability, e.g. triangulation, multiple researchers, varying research backgrounds.
Evidence of user involvement in design	No mention at all.	Use of pilot study but no involvement in planning stages of study design.	Pilot study with feedback from users informing changes to the design.	Explicit consultation with steering group or statement of formal consultation with users in planning of study design.
Strengths and limitations critically discussed	No mention at all.	Very limited mention of strengths and limitations with omissions of many key issues.	Discussion of some of the key strengths and weaknesses of the study but not complete.	Discussion of strengths and limitations of all aspects of study including design, measures, procedure, sample & analysis.

# BMJ Open

## The experiences and perceived health benefits of individuals with a disability participating in sport: A systematic review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2020-038214.R2
Article Type:	Protocol
Date Submitted by the Author:	13-Aug-2020
Complete List of Authors:	Aitchison, Beth; University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences Rushton, Alison; University of Birmingham, Centre of Precision Rehabilitation for Spinal Pain Martin, Paul; English Institute of Sport Soundy, Andrew; University of Birmingham, Heneghan, Nicola; University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences
<b>Primary Subject Heading</b>:	Public health
Secondary Subject Heading:	Evidence based practice, Public health, Rehabilitation medicine
Keywords:	REHABILITATION MEDICINE, PUBLIC HEALTH, SOCIAL MEDICINE

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Manuscripts



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3 1 **The experiences and perceived health benefits of individuals with a disability participating in sport:**  
4  
5 2 **A systematic review protocol**  
6

7  
8 3 **Authors**  
9

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37 17 **Prospero registration number:** CRD42020169224  
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1  
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3 27 **ABSTRACT**  
4

5 28 **Introduction:** Sports participation has many physical and mental health benefits for individuals with a  
6  
7 29 disability including improved functionality and reduced anxiety. Despite this, a large proportion of  
8  
9 30 individuals with a disability are inactive. This review will be the first to synthesise the literature on the  
10  
11 31 experiences and perceived health benefits of sport participation for children, adolescents, adults, elite  
12  
13 32 athletes and veterans with a disability. Investigation of these phenomena will enable an understanding  
14  
15 33 of the positive aspects and benefits of sport participation specific to each population, which may help  
16  
17 34 to improve participation rates and ultimately improve health through promotion of these benefits.

18 35 **Methods and PRISMA-P:** The phenomena of interest are the experiences and perceived health  
19  
20 36 benefits of individuals with a disability participating in sport. There will be no age limit on participants  
21  
22 37 and all study designs, besides reviews, will be included. Studies in languages other than English will be  
23  
24 38 excluded. Two independent reviewers will conduct the searches, study selection, data collection and  
25  
26 39 quality assessment independently. The online databases MEDLINE, EMBASE, PsychINFO, CINAHL Plus,  
27  
28 40 Web of Science and SportDiscus will be electronically searched from database inception to February  
29  
30 41 2020. Grey literature will be searched and several sport-related journals will be hand-searched. The  
31  
32 42 Quality Assessment Tool for Studies with Diverse Designs (QATSDD) will be used for quality assessment  
33  
34 43 of included studies. Thematic synthesis will be used to analyse the qualitative studies, narrative  
35  
36 44 synthesis will be used to analyse the quantitative studies and the perceived health benefits will be  
37  
38 45 analysed using content analysis. The strength of the overall body of evidence will be assessed and  
39  
40 46 reported using GRADE-CERQual (Grading of Recommendations, Assessment, Development and  
41  
42 47 Evaluation – Confidence in the Evidence from Reviews of Qualitative research) for qualitative studies  
43  
44 48 and GRADE for quantitative studies. These approaches will be applied to mixed-methods studies  
45  
46 49 respectively where necessary.

47 50 **Ethics and dissemination:** This systematic review raises no ethical issues. Results will be published in  
48  
49 51 a peer reviewed journal and disseminated to key stakeholders to inform practice.  
50  
51 52

52 53 **PROSPERO registration number:** CRD42020169224  
53  
54 54

55 55 **Keywords:** sport, experience, disability, systematic review  
56  
57 56  
58 57  
59 58  
60 59  
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1  
2  
3 59 **ARTICLE SUMMARY**  
4  
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6 60 **Strengths and Limitations of this Study**  
7  
8 61

- 9 62
- This is the first systematic review to synthesise evidence on the experiences and perceived health benefits of individuals with a disability participating in sport
- 11 63
- The research team includes researchers and practitioners with methodological and subject specific expertise.
- 13 64
- Only articles written in English will be included in the analysis.
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For peer review only

## 68 INTRODUCTION

69

70 Sport provides individuals with a disability with the opportunity to experience the many physical and  
71 mental health benefits associated with being physically active.[1] These benefits include improved  
72 functionality, endurance and muscle tone, increased socialisation opportunities and a reduction in  
73 anxiety and depression across a range of disabilities and age-groups.[2-4] Despite the positive factors  
74 associated with sport participation, over 40% of adults with a disability are inactive in the UK, with  
75 similar figures reported in the USA (44.3%).[5-7] Furthermore, individuals with a disability also have  
76 higher rates of chronic disease: >40% of Americans with a disability develop heart disease, cancer,  
77 diabetes or have experienced a stroke compared to <14% of those without a disability.[6]

78 The awareness of and participation in sport for individuals with a disability has grown in recent years  
79 as a result of the 'Paralympic Movement', which has been responsible for an increase in sporting  
80 opportunities, inclusion of individuals with a disability in sport and raising the profile of elite disability  
81 sport.[7-9]. This review will focus solely on sport participation, which will be defined as an activity  
82 involving physical exertion with or without a game or competition element, where skills and physical  
83 endurance are either required or to be improved.[10].

84

### 85 Adults

86 Over the past three years the activity levels of adults with a disability have increased.[11] Those  
87 completing  $\geq 150$  minutes per week have increased from 43.6% to 47.3%, and those completing <30  
88 minutes per week have decreased from 42.4% to 39.8%.[11] Similarly, in the USA approximately 30%  
89 of adults with a disability have been found to regularly participate in sports or physical activity.[12].  
90 Despite these positive trends in activity levels, surprisingly the proportion of adults with an active  
91 sports club membership has decreased from 29.4% in 2017-2018 to 21.4% in 2018-2019.[11]

92

### 93 Children

94 Children with a disability are more likely to be less active than their non-disabled peers, with one third  
95 taking part in less than 30 minutes of physical activity per day.[13-14] (Sport England, 2019b; Activity  
96 Alliance, 2020). Additionally, several studies in a range of countries have reported low physical activity  
97 levels and high sedentary levels in children with a disability, suggesting that more needs to be done to  
98 promote their participation in sporting activities to improve overall health.[15-19] However, statistics  
99 published in the UK in 2019 have shown that the inactivity levels of children with a disability aged 11-  
100 16 years have decreased compared to 12 months ago, from 38.1% to 34%, suggesting an increase in  
101 participation.[13]



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3 1024  
5 **103 Elite athletes**

6 104 At the elite level of sport there has been a steady growth in participation at the Paralympic Games,  
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8 105 increasing from around 3000 athletes and 83 countries at Barcelona in 1992 to over 4300 athletes and  
9  
10 106 160 countries in Rio 2016.[20] The funding for Paralympic sport has also grown, with UK Sport  
11 107 investing almost £73 million in the four year cycle leading up to the Rio Paralympic Games compared  
12  
13 108 to just £10 million for the Sydney Paralympic Games cycle (2000).[21] This greater awareness of and  
14  
15 109 investment into elite disability sport has prompted research in this area, with studies exploring the  
16  
17 110 beliefs, identities and self-perceptions of elite disability athletes.[22-24] Despite this, there is still a  
18  
19 111 relatively small body of research in elite sport, with limited research exploring the experiences of elite  
20  
21 112 athletes with a disability.

22 113

23 **114 Veterans**

24  
25 115 Sport participation has been shown to improve quality of life, increase confidence and provide a  
26  
27 116 source of motivation for veterans with a disability.[25] A systematic review has reported that sport  
28  
29 117 and physical activity play a role in improving the wellbeing and rehabilitation of veterans after trauma  
30  
31 118 and facilitating personal development.[26] The authors of the systematic review proposed a  
32  
33 119 potentially essential difference between 'sport' and 'physical activity' and the impact this may have  
34  
35 120 on wellbeing, and suggested that future research should take this into consideration. Furthermore,  
36  
37 121 this review focused on the experiences of disability sport camps and competitions, with no review to  
38  
39 122 date exploring the experiences and benefits of longer term sport participation in this population.

40 123

41 124 A review is required to synthesise the literature in this area as there is a limited understanding of the  
42  
43 125 range of experiences and perceived health benefits of participation in these four populations.  
44  
45 126 Understanding of these phenomena will enable the promotion of the health benefits and positive  
46  
47 127 aspects of sport tailored to the specific populations. This may help to improve participation rates,  
48  
49 128 ultimately improving the health and wellbeing of children, adolescents, adults and veterans. This  
50  
51 129 review will also provide an insight into athletes' experiences at the elite level of sport, contributing to  
52  
53 130 the small body of research, making recommendations for future research and enabling suggestions to  
54  
55 131 improve performance.

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60

## 135 Objectives

136 Aim: To explore the experiences and perceived health benefits of individuals with a disability  
137 participating in sport.

138 .

- 139 1. To explore the experiences of children and adolescents, adults, elite athletes and veterans  
140 with a disability participating in sport.
- 141 2. To examine the perceived health benefits of participating in sport for children and  
142 adolescents, adults, elite athletes and veterans with a disability.

## 143 METHODS

144 This systematic review protocol follows the Preferred Reporting Items of Systematic Review and Meta-  
145 analysis Protocols (PRISMA-P) 2015 statement (supplementary file 1).[27] This protocol and search  
146 has been designed involving subject-specific expertise in the form of an expert in the field of elite  
147 disability sport (PM) and methodological expertise in the form of extensive systematic review  
148 publications (AR, NH, AS). The protocol was registered with the International Prospective Register of  
149 Systematic Reviews (PROSPERO registration number: CRD42020169224).

### 151 Eligibility criteria:

152 Eligibility criteria are informed using the Sample, Phenomenon of Interest, Design, Evaluation and  
153 Research (SPIDER) concept which is designed for qualitative evidence synthesis.[28] Studies will be  
154 eligible for inclusion in this review if they meet the following criteria:

156 *Sample:* Studies which include individuals with a physical, visual or intellectual impairment who  
157 participate in sport, either competitively or recreationally. For studies with children and adolescents,  
158 the participants will be under 18; for studies with adults, the participants will be aged over 18; for  
159 studies with elite athletes, the participants will be of international standard or on the respective  
160 national team; and for studies with veterans the participants will be ex-armed forces members.  
161 Studies which include individuals who are classed as disabled through old age or a medical condition  
162 in isolation (e.g. diabetes) will be excluded. There is no age limit on participants.

163 *Phenomenon of Interest:* The experiences of individuals with a disability participating in sport where  
164 experience includes aspects such as the meaning of sport, the support for participation and the  
165 barriers and facilitators to sport. The second phenomenon of interest is the perceived health benefits  
166 of sport, which include a participant's self-reported benefits and comments suggesting the benefits of  
167 sport. Perceived health benefits include physical health benefits such as increased muscle tone and  
168 weight management, and mental health benefits such as improved confidence and reduced anxiety.

1  
2  
3 169 Studies investigating experiences and/or health benefits of a competition or sport programme less  
4  
5 170 than 6 months in duration were excluded.

6 171 *Designs:* All types of study designs will be considered. Reviews will be excluded. Studies written in  
7  
8 172 languages other than English will be excluded.

9  
10 173 *Evaluation:* Any reported experience by individuals with a disability in sport will be explored such as  
11  
12 174 overall experiences, meaning, barriers and facilitators experienced in sport. The perceived health  
13  
14 175 benefits of sport participation will be explored via studies which have reported participant perceived  
15  
16 176 health benefits in form of a questionnaire or verbally reported benefits.

17 177 *Research type:* Mixed methods research.

## 18 19 178 **Information sources**

20  
21 179 The databases Medline (Ovid interface), EMBASE (Ovid interface), PsycINFO (Ovid interface), Web of  
22  
23 180 Science (Clarivate Analytics interface), CINAHL Plus (EBSCO interface) and SportDiscus (EBSCO  
24  
25 181 interface) will be searched from database inception to February 2020. Grey literature sources,  
26  
27 182 including OpenGrey, will be searched. Hand searching of the following journals will be conducted to  
28  
29 183 complement the search strategy: *Qualitative Research in Sport, Exercise and Health, Psychology of*  
30  
31 184 *Sport and Exercise, Disability and Rehabilitation, British Journal of Sports Medicine, European Journal*  
32  
33 185 *of Sports Science and International Journal of Sports Science.* The screening of the references of  
34  
35 186 included studies will also take place. Active researchers who have published literature in this field will  
36  
37 187 be contacted.

## 38 188 **Search strategy**

39  
40 189 The search will be conducted independently by the lead author (BA, also the first reviewer) and a  
41  
42 190 second reviewer. Initial scoping searches have refined the search terms for the databases which will  
43  
44 191 be kept broad to ensure a sensitive search strategy. Free text searches and subject heading searches  
45  
46 192 will be carried out to ensure completeness of the search. The main body of the search strategy will be  
47  
48 193 consistent across databases however specific search terms will be adjusted for each database to  
49  
50 194 reflect syntax differences (see supplementary file 2 for MEDLINE search strategy).[29]

## 51 195 **Study records**

### 52 196 **Data management**

53  
54  
55  
56 197 The results of the literature search will be imported into EndNote X9 which will be used for data  
57  
58 198 management and reference storage.[30] The reference, abstract and full text for all potentially eligible  
59  
60

199 studies will be stored to allow effective screening. Any duplicates will be removed prior to the  
200 selection process.

#### 201 Selection process

202 The lead author and a second reviewer will independently screen the titles and abstracts of studies at  
203 the same time to determine inclusion using the pre-determined eligibility criteria. The eligibility  
204 criterion of eligible/not eligible/might be eligible will be used to assess the studies. Studies will be  
205 excluded if it is clear from the title and abstract that the content is not relevant to the objectives.  
206 When a study cannot be excluded based on the information provided in the title and abstract it will  
207 be graded as 'might be eligible'. After title and abstract screening, full-text copies of the potentially  
208 relevant studies will be obtained and eligibility determined. Studies will also be removed if the  
209 information available is insufficient for assessment and synthesis, such as full-text copies not being  
210 available. These studies will not be included in the synthesis but may be referenced in the discussion  
211 section. Consensus between the reviewers regarding study selection will be reached through a  
212 discussion and in the case where an agreement is not reached a third reviewer will be consulted. The  
213 kappa statistic will be used to test inter-rater reliability as it assesses the chance-corrected agreement  
214 between the two reviewers in assessing the eligibility of articles at the title/abstract stage and the full-  
215 text screening stage.[31] The study selection process will be carried out according to the PRISMA flow  
216 diagram and reported visually.[32]

#### 217 Data collection process

218 Data will be extracted independently by the lead author and second reviewer from included studies  
219 using the standardised qualitative data extraction tool from the Joanna Briggs Institute (see  
220 supplementary file 3).[33] Piloting on five studies ahead of the main study will ensure completeness  
221 and suitability of the form. The form will be revised if necessary to include a section for study design,  
222 allowing the recording of whether the study is qualitative, quantitative or mixed methods in design.  
223 In the event of a disagreement between the two reviewers in data extracted, a third reviewer will be  
224 consulted.

225

#### 226 Data items

227 Data extracted from the included studies will be presented in a table and the data items will include:  
228 participant information, data collection methods, data analysis methods and phenomenon of interest.

229

## 230 **Outcomes and prioritisation**

231 The experiences and perceived health benefits of children and adolescents, adults, elite athletes and  
232 veterans with a disability participating in sport constitute the phenomena of interest. All experiences  
233 reported by these individuals, including experiences of the benefits, barriers and facilitators to sports  
234 participation, will be explored provided that there is sufficient evidence.

235

## 236 **Quality assessment**

237 Initial scoping searches have suggested that studies with a range of designs will be eligible for inclusion  
238 in this systematic review. Therefore the Quality Assessment Tool for Studies with Diverse Designs  
239 (QATSDD) will be used to create a quality rating score for all included studies (see supplementary file  
240 4).[34] This tool is suitable for quality assessment because it allows the quality assessment of  
241 qualitative, quantitative and mixed-methods designs.[34] The QATSDD allows the appraisal of  
242 qualitative research which is vital for the qualitative research to contribute appropriately to the  
243 systematic review findings.[35] Additionally, good validity, inter-rater reliability and test-retest  
244 reliability have been established with this tool and it allows an in-depth understanding of the included  
245 review papers.[34,-36] A summary of the quality score and converted percentage score for each study  
246 will be reported in a table. The lead author and second reviewer will independently carry out the  
247 quality assessment and if there is a lack of consensus between the two after a discussion, the third  
248 reviewer will be consulted. If additional information is required from authors, such as an interview  
249 topic guide, the authors will be contacted for this information to facilitate quality assessment.

250

## 251 **Data synthesis**

252 Studies will be categorised into one of the four population categories for analysis based on the  
253 participants. For mixed populations, if the ages of participants can be aligned with specific quotations  
254 or results then the findings will be analysed in the respective population. The initial scoping searches  
255 demonstrated to the authors that both qualitative and quantitative studies would likely be included  
256 in the systematic review. Due to the potential heterogeneity in study designs, appropriate analysis  
257 methods will be required specific to the design. If mixed methods studies are included, they will be  
258 analysed qualitatively and/or quantitatively according to the relevance of each phase to the review  
259 objectives.

1  
2  
3 260 Thematic synthesis is an appropriate method for the synthesis of qualitative evidence and is based on  
4  
5 261 thematic analysis, which is used for the analysis of primary research.[37-38] Therefore included  
6  
7 262 qualitative studies will be analysed following the stages suggested by Thomas et al.[37] for qualitative  
8  
9 263 evidence synthesis in systematic reviews. The lead author (BA) will undertake line-by-line coding of  
10  
11 264 the text of included studies according to the content and meaning.[37] Translation will be employed,  
12  
13 265 which is the process of identifying concepts and ideas in one study and recognising them in  
14  
15 266 another.[39] A bank of codes will be created and maintained, which will then be grouped into  
16  
17 267 descriptive themes based on connections between codes[37]. The final stage will involve generating  
18  
19 268 analytical themes through discussing findings with the research team and generating concepts which  
20  
21 269 answer the review questions.[37, 39]

22  
23 270 A narrative synthesis will be conducted to analyse the quantitative studies.[40] This will involve a  
24  
25 271 preliminary synthesis of the results of included studies and an exploration of the relationships within  
26  
27 272 and between studies by comparing the results and generating common themes.[40] An integration  
28  
29 273 matrix will be used to juxtapose the qualitative and quantitative data to determine agreement or  
30  
31 274 disagreement within identified themes.[41-43]

32  
33 275 The perceived health benefits of sport participation will be extracted either from questionnaires or  
34  
35 276 verbally reported interview responses. The benefits will be analysed through content analysis, which  
36  
37 277 involves coding and categorising data to determine the frequency and patterns of the health benefits  
38  
39 278 across the different populations.[44] The lead author will immerse herself in the data and focus on  
40  
41 279 the manifest content of the data.[44] This will involve analysing exactly what is said in the text and  
42  
43 280 developing categories, which will be 'physical health benefits' and 'mental health benefits'.[44-45]  
44  
45 281 The thematic synthesis, narrative synthesis and content analysis will be conducted by the lead author  
46  
47 282 and checked by two other authors with experience in these fields.

### 283 **Confidence in cumulative evidence**

48  
49 284 To assess the overall quality and strength of evidence two different approaches will be utilised. The  
50  
51 285 GRADE-CERQual ('Grading of Recommendations, Assessment, Development and Evaluation'-  
52  
53 286 'Confidence in the Evidence from Reviews of Qualitative research') will be used to assess how much  
54  
55 287 confidence to place in the findings from the qualitative studies.[46] This approach helps provide a  
56  
57 288 transparent, systematic framework to guide the confidence in qualitative synthesis findings and has  
58  
59 289 the potential to increase the usability of the findings from this systematic review.[46] To assess the  
60  
61 290 confidence in the findings from quantitative studies, the Grading of Recommendations, Assessment,  
62  
63 291 Development and Evaluation (GRADE) will be used.[47] GRADE is used rate the body of evidence at  
64  
65 292 the outcome level, and is appropriate for use in this systematic review as it has been widely adopted

1  
2  
3 293 to grade the quality of evidence, make recommendations and present summaries of evidence.[48-49]  
4  
5 294 The lead author will assess the overall body of evidence which will be rated as 'high', 'moderate', 'low'  
6  
7 295 or 'very low' based on the GRADE certainty ratings.[48] A high rating would conclude that further  
8  
9 296 research is not likely to greatly impact on confidence of findings and a low rating would suggest an  
10  
11 297 uncertainty of effect and the need for further research.[46, 48]  
12  
13 298

## 15 299 **DISCUSSION**

17  
18 300 This systematic review will be the first to synthesise the literature on the experiences and perceived  
19  
20 301 health benefits of individuals with a disability participating in sport. It will explore the sport  
21  
22 302 experiences and health benefits in different populations including children and adolescents, adults,  
23  
24 303 elite athletes and veterans with a disability. At the end of the review we will have some insight into  
25  
26 304 both the positive and negative aspects experienced by individuals with a disability when participating  
27  
28 305 in sport. It will provide more information about the meaning of sport, and the barriers and facilitators  
29  
30 306 faced by individuals with a disability. This systematic review will also provide insight into how the  
31  
32 307 sporting experience can be improved for each population based on the experiences reported, with  
33  
34 308 the potential to increase participation in sport through awareness of the barriers faced and the  
35  
36 309 promotion of the positive aspects of sport participation. The findings from this review will provide a  
37  
38 310 clear basis and direction to guide further research based on the areas which are determined to require  
39  
40 311 more investigation following data synthesis. Due to the four populations which will be included in this  
41  
42 312 review, the future research directions and recommendations for practice will be population specific.  
43  
44 313 This will enable specific research groups to take the findings and move forward with future research.  
45  
46 314 This protocol provides a detailed account of the rationale and methods to be used in the proposed  
47  
48 315 systematic review to ensure full transparency of the process. This study raises no ethical issues and  
49  
50 316 any potential biases in the review process will be reported in the discussion section of the final review  
51  
52 317 paper. Any required amendments to this protocol will be reported in the final systematic review and  
53  
54 318 on PROSPERO along with the date, description and rationale for amendment.

55 319

## 56 320 **Patient and public involvement**

57 321 This study and protocol have been informed through extensive contact with key stakeholders in the  
58  
59 322 field in both a professional physiotherapy and clinical capacity, and in an athletic capacity through  
60

1  
2  
3 323 contact with athletes with a disability. Since no individual data is needed, individuals with a disability  
4 324 will not be involved in data collection or analysis. Key stakeholders may be contacted for their input  
5 325 to the synthesis and interpretation of findings to inform results.  
6  
7  
8

## 9 326 **Implications**

11  
12 327 It is anticipated that the findings from this systematic review will provide an insight into the  
13 328 experiences and health benefits of participating in sport for individuals with a disability. It will provide  
14 329 insight into the meaning of sport, the barriers faced, facilitators increasing participation, and the  
15 330 physical and mental health benefits. Due to the exploration of these phenomena in the different  
16 331 population groups, the findings will be population-specific and relevant to specific research groups,  
17 332 personalising the research needed going forward. This review will identify gaps in the evidence and  
18 333 suggest future research, and the findings may underpin policy decision making for the provision of  
19 334 sport for individuals with a disability.  
20  
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## 30 336 **DECLARATIONS**

### 31 337 **Ethics and Dissemination**

32  
33  
34  
35 338 No ethical approval is required for this systematic review. The findings from this systematic review  
36 339 will be published in peer reviewed journals and disseminated to key stakeholders in disability sport.  
37  
38  
39

### 40 340 **Author Contributions**

41  
42  
43 341 BA is an MSc by Research student at the University of Birmingham. AR, AS and NH are supervisors. PM  
44 342 is an expert in the field of disability sport. BA, AR, AS, PM and NH contributed to the systematic review  
45 343 topic. BA drafted the protocol with guidance and feedback from AR, AS and NH. AR, PM, AS and NH  
46 344 reviewed the manuscript and commented on the protocol. All authors have approved and contributed  
47 345 to the final manuscript.  
48  
49  
50

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53  
54  
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56 348 profit sectors  
57  
58  
59

### 60 349 **Competing interests**



1  
2  
3 350 None declared.  
4  
5

6 351 **Provenance and peer review**  
7

8  
9 352 Not commissioned; externally peer reviewed.  
10

11 353 **Patient consent for publication**  
12

13  
14 354 Not required.  
15  
16

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4 [he conduct of narrative synthesis in systematic reviews A product from the ESRC Metho](https://www.researchgate.net/profile/Mark_Rodgers4/publication/233866356_Guidance_on_the_conduct_of_narrative_synthesis_in_systematic_reviews_A_product_from_the_ESRC_Methods_Programme/links/02e7e5231e8f3a6183000000/Guidance-on-the-conduct-of-narrative-synthesis-in-systematic-reviews-A-product-from-the-ESRC-Methods-Programme.pdf)  
5 447 [ds Programme/links/02e7e5231e8f3a6183000000/Guidance-on-the-conduct-of-narrative-](https://www.researchgate.net/profile/Mark_Rodgers4/publication/233866356_Guidance_on_the_conduct_of_narrative_synthesis_in_systematic_reviews_A_product_from_the_ESRC_Methods_Programme/links/02e7e5231e8f3a6183000000/Guidance-on-the-conduct-of-narrative-synthesis-in-systematic-reviews-A-product-from-the-ESRC-Methods-Programme.pdf)  
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Supplementary file 1.

PRISMA-P 2015 Checklist

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol

Section and topic	Item No	Checklist item	Signpost
<b>ADMINISTRATIVE INFORMATION</b>			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	P1. The experiences and perceived health benefits of individuals with a disability participating in sport: a systematic review protocol
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	Not applicable
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	P1. PROSPERO: CRD42020161224
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	<p>P1. Beth Aitchison                      University of Birmingham                      Email: bla923@student.bham.ac.uk</p> <p>Dr Nicola Heneghan                      Lecturer in Physiotherapy                      School of Sport, Exercise and Rehabilitation Sciences                      College of Life and Environmental Sciences                      University of Birmingham                      Edgbaston, Birmingham,                      B15 2TT, UK                      Tel: 0121 415 8367                      Email: <a href="mailto:n.heneghan@bham.ac.uk">n.heneghan@bham.ac.uk</a></p> <p>Dr Alison Rushton                      University of Birmingham</p>

			<a href="mailto:a.b.rushton@bham.ac.uk">a.b.rushton@bham.ac.uk</a>
			Paul Martin Paralympic Sport Technical Lead English Institute of Sport <a href="mailto:Paul.Martin@eis2win.co.uk">Paul.Martin@eis2win.co.uk</a>
			Andrew Soundy University of Birmingham <a href="mailto:a.a.soundy@bham.ac.uk">a.a.soundy@bham.ac.uk</a>
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	P12. BA developed the protocol with guidance and feedback from NH, AR and AS. BA is first reviewer and second reviewer is TBC. NH and AS are third and fourth reviewers. All authors have contributed to the development of the protocol and will contribute to the data interpretation. All authors have approved the final manuscript.
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	Not applicable
Support:			
Sources	5a	Indicate sources of financial or other support for the review	P12-13. 'This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.'
Sponsor	5b	Provide name for the review funder and/or sponsor	Not applicable
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	Not applicable
<b>INTRODUCTION</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	P4 and P5. Introduction
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	P6. Introduction
<b>METHODS</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting,	P6-7. Eligibility criteria.

		time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	P7. Information sources.
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	P7 and supplementary file 2
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	P7.-8. Data management.
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	P8. Selection process
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	P8. Data collection process.
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	P8. Data items.
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	P9. Outcomes and prioritisation.
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	P9. Quality assessment.
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	P9-10. Data synthesis.
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's $\tau$ )	P9-10. Data synthesis
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	Not applicable.
	15d	If quantitative synthesis is not appropriate, describe the type of	P9-10. Data synthesis.

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		summary planned	
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	P11. Discussion.
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	P10-11. Confidence in cumulative evidence.

*From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g764*



**Supplementary file 2.**

Search strategy for MEDLINE database.

1	Experience*.ti,ab.
2	Benefit*.ti,ab.
3	Involve*.ti,ab.
4	Participa*.ti,ab.
5	1 or 2 or 3 or 4
6	Disab*.ti,ab.
7	Impair*.ti,ab.
8	Wheelchair*.ti,ab.
9	Exp Disabled Persons/
10	(disab* ad5 veteran*).ti,ab.
11	(disab* adj3 athlete*).ti,ab.
12	(para* adj3 athlete*).ti,ab.
13	Paralympi*.ti,ab.
14	6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15	Sports for Persons with Disabilities/
16	Sports/
17	15 or 16
18	5 and 14 and 17

Ti = title

Ab = abstract

**Supplementary file 3.**

Joanna Briggs Institute data extraction tool for qualitative research.

**JBIR QARI Data Extraction Tool for Qualitative Research**

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_

Journal \_\_\_\_\_ Record Number \_\_\_\_\_

**Study Description**

Methodology|

\_\_\_\_\_  
\_\_\_\_\_

Method

\_\_\_\_\_  
\_\_\_\_\_

Phenomena of interest

\_\_\_\_\_  
\_\_\_\_\_

Setting

\_\_\_\_\_  
\_\_\_\_\_

Geographical

\_\_\_\_\_  
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Cultural

\_\_\_\_\_  
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Participants

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Data analysis

\_\_\_\_\_  
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Authors conclusions

\_\_\_\_\_  
\_\_\_\_\_

Comments

\_\_\_\_\_  
\_\_\_\_\_

Complete

Yes

No

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## Supplementary file 4.

Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research

**JBI Critical Appraisal Checklist for Qualitative Research**

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_ Record Number \_\_\_\_\_

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include  Exclude  Seek further info 

Comments (Including reason for exclusion)

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Quality Assessment Tool for Studies with Diverse Designs

Criteria	0 = Not at all	1 = Very slightly	2 = Moderately	3 = Completely
Explicit theoretical framework	No mention at all.	Reference to broad theoretical basis.	Reference to a specific theoretical basis.	Explicit statement of theoretical framework and/or constructs applied to the research.
Statement of aims/objectives in main body of report	No mention at all.	General reference to aim/objective at some point in the report including abstract.	Reference to broad aims/objectives in main body of report.	Explicit statement of aims/objectives in main body of report.
Clear description of research setting	No mention at all.	General description of research area and background, e.g. 'in primary care'.	General description of research problem in the target population, e.g. 'among GPs in primary care'.	Specific description of the research problem and target population in the context of the study, e.g. nurses and doctors from GP practices in the east midlands.
Evidence of sample size considered in terms of analysis	No mention at all.	Basic explanation for choice of sample size. Evidence that size of the sample has been considered in study design.	Evidence of consideration of sample size in terms of saturation/information redundancy or to fit generic analytical requirements.	Explicit statement of data being gathered until information redundancy/saturation was reached or to fit exact calculations for analytical requirements.
Representative sample of target group of a reasonable size	No statement of target group.	Sample is limited but represents some of the target group or representative but very small.	Sample is somewhat diverse but not entirely representative, e.g. inclusive of all age groups, experience but only one workplace. Requires discussion of target population to determine what sample is required to be representative.	Sample includes individuals to represent a cross section of the target population, considering factors such as experience, age and workplace.
Description of procedure for data collection	No mention at all.	Very basic and brief outline of data collection procedure, e.g. 'using a questionnaire distributed to staff'.	States each stage of data collection procedure but with limited detail, or states some stages in details but omits others.	Detailed description of each stage of the data collection procedure, including when, where and how data were gathered.
Rationale for choice of data collection tool(s)	No mention at all.	Very limited explanation for choice of data collection tool(s).	Basic explanation of rationale for choice of data collection tool(s), e.g. based on use in a prior similar study.	Detailed explanation of rationale for choice of data collection tool(s), e.g. relevance to the study aims and assessments of tool quality either statistically, e.g. for reliability & validity, or relevant qualitative assessment.
Detailed recruitment data	No mention at all.	Minimal recruitment data, e.g. no. of questionnaire sent and no. returned.	Some recruitment information but not complete account of the recruitment process, e.g. recruitment figures but no information on strategy used.	Complete data regarding no. approached, no. recruited, attrition data where relevant, method of recruitment.
Statistical assessment of reliability and validity of measurement tool(s)	No mention at all.	Reliability and validity of measurement tool(s) discussed, but not statistically assessed.	Some attempt to assess reliability and validity of measurement tool(s) but insufficient, e.g. attempt to establish test-retest reliability is unsuccessful but no action is taken.	Suitable and thorough statistical assessment of reliability and validity of measurement tool(s) with reference to the quality of evidence as a result of the measures used.
Fit between stated research question and method of data collection	No research question stated.	Method of data collection can only address some aspects of the research question.	Method of data collection can address the research question but there is a more suitable alternative that could have been used or used in addition.	Method of data collection selected is the most suitable approach to attempt answer the research question
Fit between stated research question and content of data collection tool e.g. interview schedule (Qualitative)	No research question stated.	Structure and/or content only suitable to address the research question in some aspects or superficially.	Structure & content allows for data to be gathered broadly addressing the stated research question(s) but could benefit from greater detail.	Structure & content allows for detailed data to be gathered around all relevant issues required to address the stated research question(s).
Fit between research question and method of analysis	No mention at all.	Method of analysis can only address the research question basically or broadly.	Method of analysis can address the research question but there is a more suitable alternative that could have been used or used in addition to offer greater detail.	Method of analysis selected is the most suitable approach to attempt answer the research question in detail, e.g. for qualitative IPA preferable for experiences vs. content analysis to elicit frequency of occurrence of events, etc.
Good justification for analytical method selected	No mention at all.	Basic explanation for choice of analytical method	Fairly detailed explanation of choice of analytical method.	Detailed explanation for choice of analytical method based on nature of research question(s).
Assessment of reliability of analytical process (Qualitative only)	No mention at all.	More than one researcher involved in the analytical process but no further reliability assessment.	Limited attempt to assess reliability, e.g. reliance on one method.	Use of a range of methods to assess reliability, e.g. triangulation, multiple researchers, varying research backgrounds.
Evidence of user involvement in design	No mention at all.	Use of pilot study but no involvement in planning stages of study design.	Pilot study with feedback from users informing changes to the design.	Explicit consultation with steering group or statement of formal consultation with users in planning of study design.
Strengths and limitations critically discussed	No mention at all.	Very limited mention of strengths and limitations with omissions of many key issues.	Discussion of some of the key strengths and weaknesses of the study but not complete.	Discussion of strengths and limitations of all aspects of study including design, measures, procedure, sample & analysis.