

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

Design and preliminary validation of the Barriers to Sports Coaching Questionnaire for  
Women in South Africa: An application of the ecological model

Alliance Kubayi<sup>1</sup>, Faye F. Didymus<sup>2</sup>, Heather Morris-Eyton<sup>3</sup> and Julius Jooste<sup>4</sup>

<sup>1</sup>Department of Sport, Rehabilitation and Dental Sciences, Tshwane University of Technology,  
Pretoria, South Africa

<sup>2</sup>Carnegie Research Institute, Leeds Beckett University, Leeds, UK

<sup>3</sup>Sport and Movement Studies, Faculty of Health Sciences, University of Johannesburg,  
Johannesburg, South Africa

<sup>4</sup>Department of Psychology, Northumbria University, UK

Word count: 4850 words

**AOM: This article has been accepted for publication in the Journal of Sports Sciences (RJSP), Published by Taylor & Francis.**

26 **Abstract**

27 The purpose of this study was to develop and preliminarily validate a questionnaire to  
28 examine barriers to coaching that are encountered by women sports coaches in South Africa.  
29 Two series of studies were conducted to assess content and face validity, factorial structure,  
30 and reliability of a new questionnaire. In study one, 40 items were developed based on LaVoi  
31 and Dutove's ecological model of barriers and supports for female coaches and a thorough  
32 literature review. A panel of experts was employed to explore content validity and suitability  
33 of the provisional items. In study two, an initial 35-item questionnaire (the Barriers to Sports  
34 Coaching Questionnaire for Women; BSCQW) was administered to 150 women sports  
35 coaches who were working in South Africa. Principal component analysis was used to reduce  
36 items and determine factorial structure of the questionnaire. Analyses resulted in a 32-item  
37 BSCQW, which consists of intrapersonal, interpersonal, organisational, and socio-cultural  
38 barriers to coaching. The most proximal barriers were organisational ( $M=2.71$ ,  $SD=1.24$ ) and  
39 interpersonal ( $M=2.22$ ,  $SD=1.04$ ). The findings indicate that the overall internal consistency  
40 of the BSCQW was .81, demonstrating that the questionnaire was reliable. Thus, the BSCQW  
41 is a valid tool to assess barriers experienced by women sports coaches in South Africa.  
42 Further rigorous psychometric assessments are warranted.

43 *Keywords:* coaching, equity, gender, psychometrics, sports

AOM: This article has been accepted for publication in the Journal of Sports Sciences (JSSP), published by Taylor & Francis.

## 44 Introduction

45 Sports that are currently played in South Africa date back to the colonial and  
46 apartheid eras. During these periods, sports were managed by a repressive system that  
47 demonstrated racial division and gender inequality (Kubayi, 2018; Surujlal, 2004). Women  
48 were segregated from men in all sports (Kubayi, Coopoo, & Morris-Eyton, 2017), which  
49 marginalised and constrained them for many years (LaVoi & Dutove, 2012). Women coaches  
50 often had limited access to certain parts of society in South Africa, were not allowed to  
51 participate in sports, and were denied opportunities for their own development in the sports  
52 coaching profession (Allison, 2000; Kubayi et al., 2017; LaVoi & Dutove, 2012). However,  
53 after the dismantling of apartheid, sport became a powerful tool during efforts to persuade the  
54 South African government to move away from a discriminatory form of social order  
55 (Segwaba, Vardhan, & Duffy, 2013). While there are currently no sport participation  
56 statistics for South Africa, anecdotal and research evidence suggests that the number of  
57 women participating in sport has subsequently increased dramatically at regional, provincial,  
58 and national levels (Singh & Naidoo, 2017).

59 Despite the female participation rate in sports increasing in South Africa, sports  
60 coaching as a profession is still dominated by men (Kubayi et al., 2017). In South Africa,  
61 only five in 29 coaches were women as of 2015 (Surujlal & Vyas-Doorgapersad, 2015) and  
62 most are coaching at low level (e.g., recreational; Kubayi et al., 2017). Coaching certification  
63 is not currently compulsory for coaches at any level of competition in South Africa (Kubayi,  
64 2016) but this is likely to change following the South African Sports Confederation and  
65 Olympic Committee's launch of the South African coaching pathway in November 2019.  
66 Once the new pathway is confirmed and rolled out, certification and continuous professional  
67 development opportunities should be more widely available. Although there is no data on the  
68 number, type, or qualifications of coaches in South Africa at the current time, many coaches

69 are coaching at the community level as volunteers (Segwaba et al., 2013).

70 Globally, women coaches represent a minority who often feel excluded and  
71 undervalued (e.g., Norman & Rankin-Wright, 2016), are more likely to be placed in  
72 marginalised positions (Hovden & Tionndal, 2017; Whisenant et al., 2002), and typically  
73 receive fewer returns for their investments (Cunningham & Sagas 2002; Sagas &  
74 Cunningham 2004). This can be attributed to the fact that men occupy the majority of  
75 powerful positions in sports at all levels of participation (LaVoi & Dutove, 2012). Kerr and  
76 Ali (2012) indicated that a lack of women coaches is particularly undesirable when  
77 considering that the number of female athletes is increasing. The discrepancy between the  
78 volume of women coaches and athletes leaves female sport participants with limited role  
79 models and perpetuates the cycle of male dominance in coaching (Kerr & Ali, 2012). In  
80 addition, low involvement of women coaches implies that women athletes are unlikely to  
81 continue their sport involvement once they retire from their own athletic career (Kerr &  
82 Marshall, 2007; Knoppers, 1987).

83 A lack of women coaches in positions of power and, thus, limited diversity in the  
84 coaching workforce is not only problematic for women themselves but has ramifications for  
85 all who are involved in sport (Norman, 2011). Indeed, governing bodies that lack diversity  
86 have a significantly decreased pool of high-class coaches from which they can recruit  
87 (Norman, 2011) and reduced organisational performance (Cunningham, 2009). In contrast,  
88 organisations with diversity at the heart of their culture respect differences, tolerate risk and  
89 ambiguity, are future orientated, and have open group membership (e.g., DeSensi, 1995;  
90 Doherty & Chelladurai, 1999). Given the vital role that women coaches play in sport, it is  
91 essential to better understand the factors that may inhibit their continued engagement with the  
92 coaching profession.

93 **Conceptual model**

94 This study is underpinned by the ecological model of barriers and supports (LaVoi &  
95 Dutove, 2012). This model was developed with and for women coaches based on  
96 Brofenbrenner's (1977, 1979) ecological systems theory. The ecological model relates to  
97 intrapersonal, interpersonal, organisational, and socio-cultural barriers (LaVoi & Dutove,  
98 2012) that represent multiple, interwoven levels of influence (i.e., from the most proximal to  
99 the most distal to the coach) and how they affect, impede, or prevent women from seeking or  
100 remaining in the coaching profession (Burton & LaVoi, 2011). Factors that support (i.e.,  
101 facilitate) career advancement and retention are also considered. Intrapersonal barriers are  
102 suggested to be the most proximal level to the coach and include biological, personal, and  
103 psychological factors (e.g., cognition, beliefs, emotions, expertise values, and personality;  
104 LaVoi & Dutove, 2012). Intrapersonal barriers arise within the coaches' minds or self  
105 (Robbins, Gilbert, & Clifton, 2015). For instance, a lack of self-efficacy might be perceived  
106 as an individual barrier, whereby a woman coach does not believe she is sufficiently  
107 competent to coach (LaVoi & Dutove, 2012). Unequal assumptions of competence exist in  
108 sports coaching, with men coaches often assumed to be more competent than women  
109 counterparts (Kilty, 2006). A woman coach may perceive a need to prove herself as capable,  
110 while a man is often accepted based on coaching credentials alone (Kilty, 2006). Researchers  
111 (e.g., Demers, 2009; Messner, 2009) have suggested that women may feel more confident  
112 and competent to coach following engagement with educational opportunities relating to skill  
113 and career development.

114 Interpersonal barriers represent the second most proximal level of the ecological  
115 model and consist of social-relational influences. Interpersonal challenges include a lack of  
116 support from a spouse, parent, friend, or significant other, for example (LaVoi & Dutove,  
117 2012). Kamphoff (2010) reported that women identified a lack of support as critical in their  
118 decision to leave coaching. The third level of the model (i.e., second most distal from the

119 coach) is organisational barriers, which are defined as job descriptions, professional practices,  
120 organisational policies, use of space, and opportunities (LaVoi & Dutove, 2012). This level  
121 includes travel demands experienced by coaches for recruiting players and attending  
122 competitions, which may interfere with family responsibilities and lead to some women  
123 having to choose between coaching and parenting (LaVoi & Dutove, 2012). For women  
124 coaches with children, the working schedule may conflict with family time because childcare  
125 is not typically provided during training, travel, or competition. Indeed, family  
126 responsibilities are often viewed by sport organisations as outside of their control and  
127 interests (Kerr & Marshall, 2007).

128         Socio-cultural barriers are the fourth and most distal aspect of the ecological model.  
129 These barriers encompass cultural systems and norms that indirectly influence women  
130 coaches. For example, the roles of women in the South African context is mainly perceived  
131 as that of carrying out domestic chores (Kubayi et al., 2017). Gender stereotypes associated  
132 with traditional femininity and leadership may affect how a woman coach behaves within the  
133 coaching role (e.g., conforming to feminine norms while simultaneously exhibiting masculine  
134 behaviours to demonstrate competence: LaVoi, Buysse, Maxwell, & Kane, 2007; LaVoi &  
135 Dutove, 2012). Regardless of public policy on gender equity, stereotypes are ever-present  
136 constraints that hinder women's progress to senior coaching positions (e.g., by supporting  
137 the patriarchal control of coaching and oppressing diversity: Norman, 2011). Further, Davis-  
138 Delano, Pollock, and Vose (2009) suggested that women in sports are often perceived to be  
139 less capable and inferior to men. This type of discrimination and stereotypical thinking allows  
140 sexist assumptions to continue and contributes to the subordination of women coaches by  
141 upholding masculine hegemony (e.g., Messner & Bozada-Deas, 2009; Surujlal & Vyas-  
142 Doorgapersad, 2015).

143         Notwithstanding various studies on barriers encountered by women coaches in

144 countries such as Canada (e.g., Demers, 2004), the United Kingdom (e.g., Norman, 2008),  
145 and the United States (e.g., Kamphoff & Gill, 2008; LaVoi, 2013), there is limited  
146 information in this important area of research within a South African context. The few  
147 available peer-reviewed studies (Kubayi et al., 2017; Surujlal & Vyas-Doorgapersad, 2015)  
148 that have investigated barriers experienced by women coaches in South Africa have certain  
149 limitations. For instance, Kubayi et al. (2017) used a measurement instrument that was  
150 developed in Western society and was not specifically applicable to the South African  
151 context. Indeed, women working in developing countries (e.g., South Africa) are likely to  
152 experience unique challenges that may not be apparent in developed countries that more  
153 openly encourage and support sports coaching as a viable profession for women (Kubayi et  
154 al., 2017). In the other relevant study, Surujlal and Vyas-Doorgapersad (2015) identified just  
155 four themes relating to barriers (career path opportunities, gender discrimination,  
156 organisational support, and stereotyping), which is not likely to offer a comprehensive  
157 reflection of constraints encountered by women sports coaches in South Africa. In addition to  
158 these shortcomings, researchers are yet to develop and validate a scale to quantitatively assess  
159 barriers experienced by women coaches in South Africa.

160 The development of new measurement tools is particularly important if we are to gain  
161 a better understanding of the factors that influence women's interest in the coaching  
162 profession. In turn, such measures will act as a crucial step toward addressing the gender gap  
163 in coaching (Moran-Miller & Flores, 2011). LaVoi (2013) reiterated that if societal  
164 stereotypes about gender and leadership that privilege men coaches are to change, male and  
165 female athletes need to be coached by women. Exposure to women role models and leaders in  
166 a context that matters to young people may help to change values and beliefs about women in  
167 positions of power and leadership. Research that contributes to a better understanding of  
168 women's barriers to coaching is essential if we are to make the profession more attractive to

169 women and reduce labour turnover (Kubayi et al., 2017). The results of this study may help  
170 women coaches to reflect on the barriers that can be experienced while also helping sports  
171 organisations to identify the intrapersonal, interpersonal, organisational, and socio-cultural  
172 experiences that affect their daily lives. This study may also assist decision-makers to  
173 develop support opportunities for women coaches and, in doing so, strive for a more positive  
174 climate of respect, tolerance, and inclusiveness in coaching (LaVoi & Dutove, 2012). A  
175 better understanding of barriers in sports coaching may also inform policy regarding the  
176 training, recruitment, and retention of women coaches (Reade, Rodgers, & Norman, 2009).  
177 The current work aimed to systematically develop and rigorously assess a Barriers to Sports  
178 Coaching Questionnaire for Women (BSCQW) via two independent but related studies. The  
179 purpose of study one was to assess the content and face validity of the BSCQW. Study two  
180 aimed to determine the factorial composition of the BSCQW using principal component  
181 analysis (PCA).

### 182 Study 1

183 Study one aimed to develop an initial pool of items that related to the barriers  
184 encountered by South African women sports coaches, and to assess their content and face  
185 validity. These types of validity are essential in the development of an instrument because  
186 they evaluate whether items are relevant to and representative of the target construct (Haynes,  
187 Richard, & Kubany, 1995).

### 188 Method

#### 189 Participants

190 To explore content validity of the items, an expert panel of eight individuals (five  
191 women and three men) was recruited. This panel consisted of seven full- or part-time sports  
192 coaches ( $M_{age}=36.29$ ,  $SD=14.82$ ;  $M_{experience}=13.14$ ,  $SD=12.59$ ) and one academic who  
193 developed the ecological model that underpins this research. The coaches were working at



194 either regional, national, or international level and were involved in sports such as soccer, track  
195 and field, triathlon, tennis, and race walking.

### 196 **Measure**

197 The BSCQW was underpinned by LaVoi and Dutove's (2012) ecological model. To  
198 help develop an initial item pool, a review of literature relating to the barriers experienced by  
199 women coaches was conducted (see e.g., Kamphoff & Gill, 2008; Kubayi et al., 2017;  
200 Kubayi et al., 2018; LaVoi & Dutove, 2012; Surujlal & Vyas-Doorgapersad, 2015). During  
201 this review, literature was searched for, reviewed, and aligned to one of the four levels of the  
202 ecological model. Seventy items were generated and subsequently reviewed by the first three  
203 named authors to assess overlap and duplication. To ensure rigor and agreement when  
204 sifting the items, there were regular discussions among the three authors to reach a consensus  
205 on the inclusion and suitability of the items. Items that were too lengthy, too vague, or lacked  
206 relevance for the target population (i.e., women coaches) were removed (DeVellis, 2011).  
207 After completion of the sifting process, 40 items were included in the preliminary BSCQW.  
208 Each item was scored on a five-point Likert-type scale ranging from one (*strongly disagree*)  
209 to five (*strongly agree*).

### 210 **Data collection**

211 Permission to conduct the study was received from the lead author's university ethics  
212 committee. The preliminary 40-item questionnaire was sent electronically to each member of  
213 the expert panel who was asked to review the items. The aim of the experts' review was  
214 threefold: (1) to determine item clarity, (2) to assess whether the items reflected the subscales  
215 of the ecological model that they were nested within (i.e., their relevance and  
216 representativeness), and (3) to recommend additional items. Clarity can be defined as how  
217 clearly the items are worded and relevance refers to the extent to which each item relates to  
218 specific aspects of the construct being measured. Representativeness can be described as how

219 completely the items (as a whole) encompass the construct (Artino, La Rochelle, Dezee, &  
220 Gehlbach, 2004).

221 Based on feedback from the experts, six items were deleted (e.g., ‘Coach  
222 skills/techniques inadequate for athletes’), one new item was added (‘I travel more than I  
223 would like to’), and nine items were rephrased (e.g., ‘Working schedule’ was modified to  
224 ‘My working schedules are inflexible’). Eight items were reversed (e.g., ‘I do not have access  
225 to coaching mentors’ was reversed to ‘I have access to coaching mentors’). The items were  
226 reverse-coded to minimise response bias (i.e., tendency to respond to items without paying  
227 sufficient attention to their content, Suárez-Alvarez, Pedrosa, Lozano, García-Cueto, &  
228 Cuesta, 2018). At the end of study one, the BSCQW consisted of 35 items that would be  
229 examined for factor structure and reliability in study two.

## 230 Study 2

231 The aims of study two were to examine the factorial structure of the 35-item BSCQW  
232 by means of PCA and to assess the reliability of the questionnaire.

## 233 Method

### 234 Participants

235 The sample consisted of 152 South African women sports coaches, aged between 18  
236 and 54 years ( $M_{age}=30.38$ ,  $SD=9.74$ ), who volunteered to participate. The coaching  
237 experience of the participants ranged from 1 to 31 years ( $M_{experience}=5.69$ ,  $SD=6.65$ ). The  
238 coaches represented the following sports: netball ( $n = 93$ ), athletics ( $n = 27$ ), soccer ( $n = 15$ ),  
239 hockey ( $n = 13$ ), and others ( $n = 4$ ).

### 240 Data collection

241 To begin the process of coach recruitment, we contacted coach educators via sports  
242 federations or, where these individuals were known to the research team, we made contact  
243 directly by phone. Educators were asked to disseminate full details of the study via a

244 participant information sheet to women coaches and were asked not to encourage or  
245 discourage participation. Participants who contacted the research team to show an interest in  
246 taking part in the study were then approached by the principal investigator and fieldworkers  
247 who were trained to administer the questionnaire. An informed consent form and the  
248 BSCQW were distributed to the participants in two ways: face-to-face using hard copies or  
249 electronically via an email. Each participant was required to sign a consent form which  
250 reiterated the purpose of the study and the voluntary nature of participation. The participants  
251 were informed via the consent form and during discussions with the researchers that their  
252 responses would remain anonymous and that they could withdraw from the study at any time  
253 without prejudice. The participants completed the questionnaire independently, which took  
254 between eight and 12 minutes.

### 255 **Data analysis**

256 Descriptive statistics (means and standard deviations) were first used to explore the  
257 data. Prior to conducting PCA, the data were screened for missing values and were cleansed.  
258 No variable in the BSCQW had >5% of missing data so any data not present were assumed to  
259 be missing at random. PCA was used to refine and reduce the number of items and form a  
260 smaller number of coherent subscales (Pallant, 2011). Criteria for extraction for PCA were as  
261 follows: (1) acceptable Kaiser-Meyer-Olkin (KMO) measure of sampling and Bartlett's tests  
262 for sampling adequacy and sphericity, (2) a minimum of 5% explained variance per  
263 component, (3) eigenvalues greater than 1.0 to indicate that a component explained more  
264 variance than any single item, and (4) factor loadings of  $\geq .30$  (Kline, 1994; Tabachnick &  
265 Fidell, 1996). Cronbach's alpha coefficients were used to assess the internal consistency and  
266 reliability of the BSCQW. All statistical analyses were conducted using a Statistical Package  
267 for Social Sciences (SPSS, version 25).

### 268 **Results**

## 269 **PCA and descriptive statistics**

270 The 35 items of the BSCQW were subjected to PCA using direct oblimin oblique  
271 rotation. A four-component solution accounted for a total of 37.19% of the overall variance.  
272 Three items were removed from the pattern matrix because the component loadings were  
273  $<.30$ . PCA with an oblique rotation was then performed on the remaining 32 items of the  
274 BSCQW. The KMO value was .71, which is higher than the acceptable value of .60  
275 recommended by Kaiser (1974). Bartlett's Test of Sphericity (Bartlett, 1954) was significant  
276 ( $\chi^2 = 1396.81$ ;  $df = 496$ ;  $p < 0.000$ ), which supported the factorability of the correlation  
277 matrix (Pallant, 2011). The revised four-component structure explained a total of 39.72% of  
278 overall variance. Table 1 shows descriptive statistics, item loadings, eigenvalues, and  
279 percentage variance explained by each component.

280 [Insert Table 1 here]

281 The first component, *organisational barriers*, accounted for 16.39% of the variance  
282 and consisted of 11 items. The most important organisational barriers encountered by women  
283 coaches were "I am not well paid for my coaching" ( $M=3.20$ ,  $SD=1.45$ ), "I work longer hours  
284 than I would like to" ( $M=3.09$ ,  $SD=1.31$ ), and "I have too many administrative duties"  
285 ( $M=3.07$ ,  $SD=1.36$ ). The second component, labelled *socio-cultural barriers*, explained  
286 10.09% of variance and contained eight items. The most proximal socio-cultural barrier  
287 identified by women coaches was "I am given low status" ( $M=2.34$ ,  $SD=1.15$ ).

288 Five items loaded onto the third component, *intrapersonal barriers*, which accounted  
289 for 7.56% of the variance. "I lack coaching skills to be a successful coach" ( $M=2.58$ ,  
290  $SD=1.12$ ) was identified as the most important intrapersonal barrier among women coaches.

291 The last component, *interpersonal barriers*, explained 5.68% of the variance and included  
292 eight items. The following interpersonal barriers were reported as the most important by  
293 women coaches: "I have difficulties dealing with spectators/parents" ( $M=2.47$ ,  $SD=1.17$ ),

294 “Coaching interferes with my social life” ( $M=2.41$ ,  $SD=1.26$ ), and “Coaching conflicts with  
295 my family commitments” ( $M=2.34$ ,  $SD=1.34$ ). Overall, the most proximal barriers were  
296 *organisational* ( $M=2.71$ ,  $SD=1.24$ ) and *interpersonal* ( $M=2.22$ ,  $SD=1.04$ ).

### 297 **Reliability testing**

298 Table 2 presents the Cronbach’s alpha coefficients of the BSCQW. Despite three  
299 subscales (intrapersonal, interpersonal, and organisational barriers) falling below the  
300 recommended value of .70 as proposed by Nunnally and Bernstein (1994), the values are  
301 acceptable for exploratory research (Hair et al., 2017). The overall internal consistency of the  
302 questionnaire was .81, demonstrating good reliability (Tavakol & Dennick, 2013).

303 [Insert Table 2 here]

### 304 **Discussion**

305 This study aimed to develop and preliminarily validate a questionnaire to assess  
306 barriers experienced by South African women sports coaches. The questionnaire was  
307 systematically and rigorously developed using a comprehensive review of literature, expert  
308 panel review to explore content and face validity, PCA, and Cronbach’s alpha coefficients to  
309 assess internal consistency and reliability. The PCA extracted a four-component factorial  
310 structure of organisational, socio-cultural, intrapersonal, and interpersonal barriers. These  
311 four components consisted of 32 items and formed the provisional BSCQW. The preliminary  
312 analyses show that the BSCQW is a sound psychometric measure of barriers to sports  
313 coaching within the South African context. Indeed, the overall internal consistency of the  
314 BSCQW exceeded the recommended alpha value of .70 (Nunnally & Bernstein, 1994),  
315 suggesting that the questionnaire is a suitable instrument to assess barriers among South  
316 African women sports coaches.

317 The first component of the BSCQW, *organisational barriers*, includes eight items  
318 that relate to the organisational policies, job descriptions, and professional practices (LaVoi

319 & Dutove, 2012). The most important organisational barrier reported by the women coaches  
320 in the current study related to poor remuneration for their coaching work. This finding is  
321 consistent with that of Surujlal (2006) who indicated that women coaches are paid  
322 considerably less than their male counterparts despite the fact that they share identical  
323 credentials. Women coaches have also reported that they work longer hours than they would  
324 like to. In a study of U.S. women coaches, Kamphoff (2010) reported coaching positions as  
325 “nonstop . . . 24-7 job(s)” with no vacations, which disrupted coaches’ chances of living a  
326 “normal life” (p. 367). Another important organisational barrier was that women coaches  
327 performed too many administrative duties, which interfered with their coaching roles. This  
328 finding lends support to Kamphoff (2010) who reported that women coaches had to accept  
329 additional responsibilities (e.g., administration) within the athletic department to increase  
330 their salaries. Consequently, women coaches alluded to supportive administration as key to  
331 coaching success (Kamphoff, 2010).

332 The second component, *socio-cultural barriers*, comprises eight items and refers to  
333 cultural systems, gender ideology, and norms that influence women coaches (LaVoi &  
334 Dutove, 2012). The highest mean score for socio-cultural barriers showed that giving women  
335 coaches low status (e.g., coaching at a lower competitive level) was an important barrier to  
336 coaching. Other empirical evidence has demonstrated that women coaches often encounter  
337 occupational segregation by being assigned to less visible roles (e.g., assistant coach versus  
338 head coach), less competitive recreational levels, less prestigious sports, and to younger  
339 athletes (LaVoi, 2009; LaVoi & Dutove, 2012; Messner, 2009). However, it should be noted  
340 that *socio-cultural barriers* in this study were perceived as those most distal to the coaches.  
341 This means that these barriers were the least important of the four components that we  
342 assessed. This finding highlights that discriminatory gender ideologies may be changing and  
343 that, for those who took part in this study, inclusion of women coaches is increasingly valued

344 (LaVoi & Dutove, 2012; Norman, 2011).

345 The third component, *intrapersonal barriers*, contains five items and relates to  
346 personal factors (e.g., perceived competence, ability to manage stress) that woman coaches  
347 may experience. Women coaches who contributed to this study indicated that they believed  
348 they lacked the coaching skills that are required to be successful coaches. Previous studies  
349 have demonstrated that women coaches who believed they lacked coaching or management  
350 skills, experience, and knowledge were not competent to coach (Demers, 2009; LaVoi &  
351 Dutove, 2012; Messner, 2009). Self-perceptions relating to confidence, competence, and self-  
352 efficacy among women sports coaches act as constraints to their progression (Kilty, 2006;  
353 LaVoi & Becker, 2007; LaVoi & Dutove, 2012). Therefore, women coaches should be  
354 equipped with necessary knowledge and skills by means of formal, informal, and non-formal  
355 education to optimise their coaching confidence (Demers, 2009; LaVoi & Dutove, 2012;  
356 Messner, 2009).

357 The last component, *interpersonal barriers*, includes eight items that relate to a  
358 perceived lack of support from social agents or negative interactions with significant others  
359 (LaVoi & Dutove, 2012). The most important interpersonal barrier that was identified by  
360 women coaches was encountering difficulties when dealing with spectators and or parents.  
361 Spectators and parents have been reported to interfere with coaching duties (e.g., by trying to  
362 influence who should and should not be selected to compete; Harwood, Thrower, Slater,  
363 Didymus, & Frearson, 2019; Kubayi et al., 2017) and the current study suggests that this  
364 interference is a barrier that may have important ramifications for coaches' engagement with  
365 and continuation in the profession. Further, the women coaches who we worked with  
366 acknowledged that their time commitment to coaching interfered with their social life and  
367 family obligations. This is important given the commonplace culture in South Africa whereby  
368 some women still shoulder the majority of family responsibilities (e.g., cleaning, cooking,

369 washing, childcare; Kubayi, Nongogo, & Amusa, 2014). Indeed, Kerr and Marshall (2007)  
370 argued that although there seems to be a shift toward men assuming more domestic  
371 responsibilities globally, including staying at home to raise children, the gendered division of  
372 labour is still prevalent. Our findings relating to interpersonal barriers have important  
373 consequences for coaching in South Africa. The profession needs to become more forward  
374 thinking to accommodate the high expectations of women in both their coaching and personal  
375 contexts until we see a seismic shift in cultural gender equality.

### 376 **Conceptual implications**

377 The ecological model that underpinned this study allowed us to understand some of  
378 the barriers faced by women coaches from those at the most proximal to those at the most  
379 distal levels from the coach (Burton & LaVoi, 2011; LaVoi & Dutove, 2012). While the  
380 ecological model postulates that intrapersonal barriers were the most proximal constraints  
381 experienced by women coaches, the present study suggests that organisational barriers are  
382 perceived to be at the most proximal level among South African women sports coaches. This  
383 finding demonstrates that South African women coaches experience important barriers  
384 relating to the sport club(s) and/or organisation(s) within which they work. A possible reason  
385 for this is that women coaches have minimal power and authority to make their own  
386 decisions (Kubayi et al., 2017). Men play an important role in affecting the progress of  
387 women in coaching because they hold most of the positions of power, decision-making, and  
388 resource allocation. To compound this notion, it has been suggested that men have a lack of  
389 awareness of their power and the power structures within workplace organisations (Kerr &  
390 Marshall, 2007). Based on the results of the current study, the ecological model developed by  
391 LaVoi and Dutove (2012) should be refined for South African women sports coaches who  
392 have a different structure of barriers to that identified in the Western world.

### 393 **Strengths, limitations, and future research**



394 The results of this study should be interpreted in light of some potential limitations.  
395 First, the sample size was small and the results cannot be generalised to the wider South  
396 African coaching population. Second, the women coaches who volunteered in this study were  
397 unevenly distributed across sports, and most of them worked in female-dominated sports  
398 (e.g., hockey, netball). Our sample does, however, reflect the nature of sports coaching in  
399 South Africa where women are underrepresented, usually work with female, rather than male  
400 athletes, and often occupy lower level coaching positions than their qualifications and  
401 experience suggest they should. Our study provides a new tool for understanding some of the  
402 reasons why women in South Africa may choose to coach, and offers insight to some of the  
403 barriers that may prevent them from doing so. Once these reasons are more fully understood,  
404 interventions can be developed to inspire and empower women to consider a career in  
405 coaching and, thus, help neutralise the profession's demographic biases. The BSCQW may  
406 be useful for moving the existing South African coaching system toward greater equality,  
407 helping to highlight the need for improved social networks for women coaches, establishing a  
408 more supportive atmosphere, and changing societal norms about the coaching profession.  
409 Efforts in these areas may increase the number of women coaches in South Africa and, in  
410 doing so, create role models for girls and women (Kubayi et al., 2017; LaVoi & Dutove's,  
411 2012). The presence of women role models will contribute to girls and women valuing their  
412 sport abilities more strongly (Lockwood, 2006) and realising their sport related potential  
413 (Hums, Bower, & Grappendorf, 2007). Further research should include more of a focus on  
414 women coaches in male-dominated sports such as cricket, rugby, and soccer to provide more  
415 varied insight to the barriers encountered by women coaches. Future studies should also  
416 further interrogate the BSCQW with larger samples of women coaches to assess concurrent  
417 validity, factor structure, and test-retest reliability. It would also be interesting to develop a  
418 measure of barriers experienced by men sports coaches in South Africa to facilitate

419 explorations of gender-based similarities and differences.

## 420 **Conclusion**

421 The purpose of this study was to systematically and rigorously develop, and  
422 preliminarily validate, a measure to assess barriers encountered by women sports coaches in  
423 South Africa. The BSCQW is a valid measure of such barriers and can, therefore, be used by  
424 researchers and practitioners alike. The most important barriers to coaching as encountered  
425 by women coaches were low payment, working longer hours, performing too many  
426 administrative duties, having low coaching status, perceiving a lack of coaching skills that are  
427 needed to be successful coach, experiencing difficulties in dealing with spectators and or  
428 parents, and coaching interfering with social and family commitments. It is recommended  
429 that sports clubs and organisations increase remuneration for women coaches to bolster  
430 perceptions of being valued and rewarded appropriately. Salary increases may also encourage  
431 more women to the profession, particularly if policies relating to working hours and  
432 conditions are introduced to facilitate more effective work-life balance and, in doing so, help  
433 coaches to manage their coaching and personal commitments.

**AOM: This article has been accepted for publication in the Journal of Sports Sciences (JSSP), Published by Taylor & Francis.**

434 **References**

- 435 Allison, M. T. (2000). Leisure, diversity and social justice. *Journal of Leisure Research*,  
436 32(1), 2–6. doi:10.1080/00222216.2000.11949876
- 437 Artino, A. R. J., La Rochelle, J. S., Dezee, K. J., & Gehlbach, H. (2014). Developing  
438 questionnaires for educational research: AMEE guide no. 87. *Medical Teacher*,  
439 36(6), 463–474. doi:10.3109/0142159x.2014.889814
- 440 Bartlett, M. S. (1954). A note on the multiplying factors for various chi square  
441 approximations. *Journal of the Royal Statistical Society*, 16(2), 296–298.  
442 doi:10.1111/j.2517-6161.1954.tb00174.x
- 443 Bronfenbrenner, U. (1977). Toward an experimental ecology of human development.  
444 *American Psychologist*, 32(7), 513–531. doi:10.1037/0003-066X.32.7.513
- 445 Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and*  
446 *design*. Cambridge, MA: Harvard University Press.
- 447 Burton, L. J., & LaVoi, N. M. (2016). An ecological/multisystem approach to understanding  
448 and examining women coaches. In N. M. LaVoi (Ed.), *Women in sports coaching*  
449 (pp. 49–62). London, United Kingdom: Routledge.
- 450 Cunningham, G. B. (2009). The moderating effect of diversity strategy on the relationship  
451 between racial diversity and organizational performance. *Journal of Applied Social*  
452 *Psychology*, 39, 1445–1460. doi:10.1111/j.1559-1816.2009.00490.x
- 453 Cunningham, G. B., & Sagas, M. (2002). The differential effects of human capital for male  
454 and female Division I basketball coaches. *Research Quarterly for Exercise and*  
455 *Sport*, 73, 489–495. doi:10.1080/02701367.2002.10609051
- 456 Davis-Delano, L. R., Pollock, A., & Vose, J. E. (2009). Apologetic behaviour among female  
457 athletes: A new questionnaire and initial results. *International Review for the*  
458 *Sociology of Sport*, 44(2-3), 131–150. doi:10.1177/1012690209335524

- 459 Demers, G. (2004). Why female athletes decide to become coaches—or not. *Canadian*  
460 *Journal of Women in Coaching*, 4(5). [http://3361.vws.magma.ca/WOMEN/e/](http://3361.vws.magma.ca/WOMEN/e/journal/july2004/index.htm)  
461 [journal/july2004/index.htm](http://3361.vws.magma.ca/WOMEN/e/journal/july2004/index.htm) 9
- 462 Demers, G. (2009). “We are coaches”: Program tackles the under-representation of female  
463 coaches. *Canadian Journal for Women in Coaching*, 9(2).  
464 <http://23361.vws.magma.ca/WOMEN/e/journal/april2009/index.htm>
- 465 DeSensi, J. T. (1995). Understanding multiculturalism and valuing diversity: A theoretical  
466 perspective. *Quest*, 47, 34–43. doi:10.1080/00336297.1995.10484183
- 467 DeVellis, R. F. (2011). *Scale development: Theory and applications* (Vol. 26). London,  
468 United Kingdom: Sage.
- 469 Doherty, A. J., & Chelladurai, P. (1999). Managing cultural diversity in sport organizations:  
470 A theoretical perspective. *Journal of Sport Management*, 13, 280–297.  
471 doi:10.1123/jsm.13.4.280
- 472 Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least*  
473 *squares structural equation modeling (PLSSEM)* (2nd ed). Thousand Oaks, CA:  
474 Sage.
- 475 Harwood, C. G., Thrower, S. N., Slater, M. J., Didymus, F. F., & Frearson, L. (2019).  
476 Advancing our understanding of psychological stress and coping among parents in  
477 organized youth sport. *Frontiers in Psychology*, 10(July).  
478 doi:10.3389/fpsyg.2019.01600.
- 479 Hanton, S., Fletcher, D., & Coughlan, G. (2005). Stress in elite sport performers: A  
480 comparative study of competitive and organizational stressors. *Journal of Sports*  
481 *Sciences*, 23(10), 1129–1141. doi:10.1080/02640410500131480
- 482 Hovden, J., & Tjonndal, A. (2017). The gendering of coaching from an athlete perspective:  
483 The case of Norwegian boxing. *International Review for the Sociology of Sport*,

- 484 54(2), 239–255. doi:10.1177/1012690217715641
- 485 Hums, M. A., Bower, G. G., & Grappendorf, H. (2007). *Women as leaders in sport: Impact*  
486 *and influence*. Oxen Hill, MD: AAHPERD.
- 487 Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31–36.  
488 doi:10.1007/bf02291575
- 489 Kamphoff, C. S. (2010). Bargaining with patriarchy. *Research Quarterly for Exercise and*  
490 *Sport*, 81(3), 360–372. doi:10.1080/02701367.2010.10599684
- 491 Kamphoff, C., & Gill, D. (2008). Collegiate athletes' perceptions of the coaching profession.  
492 *International Journal of Sports Science and Coaching*, 3(1), 50–72.  
493 doi:10.1260/174795408784089351
- 494 Kerr, G., & Ali, B. (2012). Perceived barriers to achieving gender equity in Canadian  
495 interuniversity sport: Perspectives of athletic directors. *Canadian Journal of Women*  
496 *in Coaching*, 12, 1–7. <https://coach.ca/canadian-journal-women-coaching>
- 497 Kerr, G., & Marshall, D. (2007). Shifting the culture: Implications for female coaches.  
498 *Canadian Journal of Women in Coaching*, 7, 1–4. [https://coach.ca/canadian-journal-](https://coach.ca/canadian-journal-women-coaching)  
499 [women-coaching](https://coach.ca/canadian-journal-women-coaching)
- 500 Kilty, K. (2006). Women in coaching. *The Sport Psychologist*, 20(2), 222–234.  
501 doi:10.1123/tsp.20.2.222
- 502 Kline, P. (1994). *An easy guide to factor analysis*. London, United Kingdom: Routledge.
- 503 Knoppers, A. (1987). Gender and the coaching profession. *Quest*, 39(1), 9–22.  
504 doi:10.1080/00336297.1987.10483853
- 505 Kubayi, N. A. (2015). *Barriers and hindrances experienced by sport coaches in Gauteng*  
506 *Province*. Unpublished Masters thesis. University of Johannesburg, South Africa.
- 507 Kubayi, A. (2018). The relationship between work–family conflict, organisational support,  
508 and job-life satisfaction of South African sports coaches. *International Sports*

- 509            *Studies*, 40(1), 19–28. doi:10.30819/iss.40-1.03
- 510 Kubayi, A., Coopoo, Y., & Morris-Eyton, H. (2017). Work-related constraints in sports  
511 coaching: Perceptions of South African female coaches. *International Journal of*  
512 *Sports Science and Coaching*, 12(1), 103–108. doi:10.1177/1747954116684391
- 513 Kubayi, N.A., Nongogo, P., & Amusa, L.O. (2014). Determinants of sport participation  
514 patterns among learners in Hlanganani rural area of Limpopo Province, South  
515 Africa. *African Journal for Physical, Health Education, Recreation and Dance*,  
516 20(3:1), 1033–1041. <https://hdl.handle.net/10520/EJC164892>
- 517 Kubayi, A., Toriola, A., & Didymus, F. F. (2018). Development and initial validation of an  
518 instrument to assess stressors among South African sports coaches. *Journal of Sports*  
519 *Sciences*, 36(12), 1378–1384. doi:10.1080/02640444.2017.1385264
- 520 LaVoi, N. M. (2009). Occupational sex segregation in a youth soccer organization: Females  
521 in positions of power. *Women in Sport and Physical Activity Journal*, 18(2), 25–37.  
522 doi:10.1123/wspaj.18.2.25
- 523 LaVoi, N. M. (2013). *The decline of women coaches in collegiate athletics: A report on*  
524 *select NCAA Division I FBS institutions, 2012-13*. Minneapolis: The Tucker Center  
525 for Research on Girls and Women in Sport.
- 526 LaVoi, N. M., & Becker, E. (2007). *Where have all the post-Title IX mothers gone?*  
527 *Exploring the scarcity of female coaches in youth sport*. Poster session presented at  
528 the Association of Applied Sport Psychology, Louisville, KY.
- 529 LaVoi, N. M., Buysse, J., Maxwell, H. D., & Kane, M. J. (2007). The influence of  
530 occupational status and sex of decision maker on media representations in  
531 intercollegiate athletics. *Women in Sport and Physical Activity Journal*, 15(2), 32–  
532 43. doi:10.1123/wspaj.16.2.31
- 533 LaVoi, N. M., & Dutove, J. K. (2012). Barriers and supports for female coaches: An

- 534 ecological model. *Sport Coaching Review*, 1(1), 17–37.
- 535 doi:10.1080/21640629.2012.695891
- 536 Lockwood, P. (2006). Someone like me is successful: Do college students need same-gender  
537 role models? *Psychology of Women Quarterly*, 30, 36-46. doi:10.1111/j.1471-  
538 6402.2006.00260.x
- 539 Messner, M. A. (2009). *It's all for the kids: Gender, families, and youth sports*. Berkeley,  
540 CA: University of California Press.
- 541 Messner, M. A., & Bozada-Deas, S. (2009). Separating the men from the moms: The making  
542 of adult sex segregation in youth sports. *Gender & Society*, 23(1), 49–71.  
543 doi:10.1177/0891243208327363
- 544 Moran-Miller, K., & Flores, L. Y. (2011). Where are the women in women's sports?  
545 Predictors of female athletes' interest in a coaching career. *Research Quarterly for*  
546 *Exercise and Sport*, 82(1), 109–117. doi:10.1080/02701367.2011.10599727
- 547 Norman, L. (2008). The UK coaching system is failing women coaches. *International*  
548 *Journal of Sport Science and Coaching*, 3(4), 447–464.  
549 doi:10.1260/174795408787186431
- 550 Norman, L. (2011). Gendered homophobia in sport and coaching: Understanding the  
551 everyday experiences of lesbian coaches. *International Review for the Sociology of*  
552 *Sport*, 47(6), 705–723. doi:10.1177/1012690211420487
- 553 Norman, L. (2013). The challenges facing women coaches and the contributions they can  
554 make to the profession. *International Journal of Coaching Science*, 7, 3–23.  
555 [http://www.ikcdc.net/Bbs\\_M/Bbs\\_M\\_Main.asp?Board\\_Id=3&fbclid=IwAR1ealQgL](http://www.ikcdc.net/Bbs_M/Bbs_M_Main.asp?Board_Id=3&fbclid=IwAR1ealQgLVC61fSx1ON2eVe3dkzxZ7sxPiKMDdzJROJh-7ZkV6AkzYKXBG)  
556 [VC61fSx1ON2eVe3dkzxZ7sxPiKMDdzJROJh-7ZkV6AkzYKXBG](http://www.ikcdc.net/Bbs_M/Bbs_M_Main.asp?Board_Id=3&fbclid=IwAR1ealQgLVC61fSx1ON2eVe3dkzxZ7sxPiKMDdzJROJh-7ZkV6AkzYKXBG)
- 557 Norman, L., & Rankin-Wright, A. J. (2016). Surviving rather than thriving: Understanding  
558 the experiences of women coaches using a theory of gendered social well-being.

- 559 *International Review for the Sociology of Sport*, 53(4), 1–27.
- 560 doi:10.1177/1012690216660283
- 561 Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York City,  
562 NY: McGraw-Hill.
- 563 Pallant, J. (2011). *SPSS survival manual: A step by step guide to data analysis using SPSS*  
564 (4th ed.). Australia: Allen & Unwin.
- 565 Reade, I., Rodgers, W., & Norman, L. (2009). The under-representation of women in  
566 coaching: A comparison of male and female Canadian coaches at low and high  
567 levels of coaching. *International Journal of Sports Science & Coaching*, 4(4), 505–  
568 520. doi:10.1260/174795409790291439
- 569 Robbins, J. E., Gilbert, J. N., & Clifton, A. M. (2015). Coaching stressors in a Division II  
570 historically black university. *Journal of Intercollegiate Sport*, 8, 183–205.  
571 doi::10.1123/jis.2014-0105
- 572 Sagas, M., & Cunningham, G. B. (2004). Does having the “right stuff” matter? Gender  
573 differences in the determinants of career success among intercollegiate athletic  
574 administrators. *Sex Roles*, 50, 411–421. doi:10.1023/B:SERS.0000018895.68011.fa
- 575 Segwaba, J., Vardhan, D., & Duffy, P. (2014). Coaching in South Africa. *International Sport*  
576 *Coaching Journal*, 1(1), 33–41. doi:10.1123/iscj.2013-0042
- 577 Singh, T. L., & Naidoo, L. D. (2017). Assessing gender inequality in South Africa: A case  
578 study of women in sports management. *Journal of Research in Business, Economics*  
579 *and Management*, 8(2), 1407–1428.  
580 <http://www.scitecresearch.com/journals/index.php/jrbem>
- 581 Suárez-Álvarez, J., Pedrosa, I., Lozano, L. M., García-Cueto, E., Cuesta, M., & Muñoz, J.  
582 (2018). Using reversed items in likert scales: A questionable practice. *Psicothema*,  
583 30(2), 149–158. doi:10.7334/psicothema2018.33



- 584 Surujlal, J. (2004). *Human resources management of professional sports coaches*.  
585 Unpublished PhD Thesis, Rand Afrikaans University, South Africa.
- 586 Surujlal, J. (2006). Compensation of professional sport coaches in South Africa. *African*  
587 *Journal for Physical, Health Education, Recreation and Dance*, 12, 1–14.  
588 <https://www.ajol.info/index.php/ajpherd/index>
- 589 Surujlal, J., & Vyas-Doorgapersad, S. (2015). The glass ceiling in sport coaching: Perceived  
590 challenges of female coaches. *African Journal for Physical, Health Education,*  
591 *Recreation and Dance*, November (Supplement 1), 80–94.  
592 <https://hdl.handle.net/10520/EJC183680>
- 593 Tabachnick, B.G., & Fidell, L.S. (1996). *Using multivariate statistics* (3rd ed.). New York  
594 City, NY: Harper Collins.
- 595 Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International*  
596 *Journal of Medical Education*, 2, 53–56. doi:10.5116/ijme.4dfb.8dfd
- 597 Whisenant, W. A., Pederson, P. M., & Obenour, B. L. (2002). Success and gender:  
598 Determining the rate of advancement for intercollegiate athletic directors. *Sex Roles*,  
599 47, 485–491. doi:10.1023/A:1021656628604

AOM: This article has been accepted for publication in the Journal of Sports Sciences (JSSP), published by Taylor & Francis.

600 Table 1

601 *Item loadings, eigenvalues, percentages of variance, and descriptive statistics for the BSCQW.*

	Item loading	<i>M</i>	<i>SD</i>
Organisational barriers (Eigenvalue = 5.25, percentage of variance = 16.39)		2.71	1.24
I work longer hours than I would like to	.76	3.09	1.31
I have too many administrative duties	.75	3.07	1.26
I dislike having to coach during evenings and weekends	.63	2.73	1.36
I travel more than I would like to	.61	2.59	1.18
I am not well paid for my coaching	.61	3.20	1.45
My job is secure	.50	2.43	1.17
I have opportunities to complete professional qualifications	.49	2.36	1.14
I am concerned that my financial incentives are dependent	.49	2.03	1.06
Other people interfere with my coaching decisions	.37	2.50	1.20
I have a lack of opportunity for promotion	.31	2.78	1.17
My working schedules are inflexible	.30	3.03	1.26
Socio-cultural barriers (Eigenvalue = 3.23, percentage of variance = 10.09)		1.90	1.03
I am perceived as unfeminine	.77	1.65	0.88
I am discriminated against for being a women coach	.69	1.76	1.08
People perceive me as a lesbian because of my coaching	.61	1.35	0.74
I am considered to be unattractive	.59	1.67	0.89
I am given low status (e.g., coaching at a lower competitive	.54	2.34	1.15
I do not have women role models to look up to	.49	1.88	1.18
I am treated fairly	.45	2.28	1.20
I am accepted by male coaches	.41	2.25	1.11
Intrapersonal barriers (Eigenvalue = 2.42, percentage of variance = 7.56)		2.22	1.04
I do not feel competent in my coaching role	.79	2.25	1.10
I lack coaching skills to be a successful coach	.78	2.58	1.12
I am able to handle defeat	.65	2.16	1.04
I am able to manage my own experiences of stress during	.63	2.18	0.93
I find it difficult to motivate my athletes	.61	1.91	0.99
Interpersonal barriers (Eigenvalue = 1.82, percentage of variance = 5.68)		2.07	1.07
Coaching conflicts with my family commitments	.69	2.34	1.34
Coaching interferes with my social life	.67	2.41	1.26
I have access to coaching mentors	.53	2.11	1.12
I have difficulties dealing with spectators/parents	.51	2.47	1.17
I am able to help athletes to manage stress of competition	.49	2.20	0.87
I have a lack of support from my close family members	.45	1.67	0.96
My athletes prefer working with male coaches	.39	1.60	0.94
I have personality conflicts with my athletes	.35	1.75	0.93

602

603 Table 2

604 *Reliability analyses of BSCQW.*

605

Subscale	Number of items	Cronbach's alpha
Intrapersonal barriers	05	.62
Interpersonal barriers	08	.64
Organisational barriers	11	.66
Socio-cultural barriers	08	.74
Overall	32	.81

606

**AOM: This article has been accepted for publication in the Journal of Sports Sciences (R.JSP), published by Taylor & Francis.**