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1 Training Monitoring Engagement: An Evidence-Based Approach in Elite Sport

2 Original Investigation

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20 **Abstract**

21 **Purpose:** Poor athlete buy-in and adherence to training monitoring systems (TMS) can be problematic
22 in elite sport. This is a significant issue, as failure to record, interpret, and respond appropriately to
23 negative changes in athlete wellbeing and training status may result in undesirable consequences,
24 such as maladaptation and/or underperformance. This study examined the perceptions of elite
25 athletes to their TMS, and their primary reasons for non-completion. **Methods:** Nine national team
26 sprint athletes participated in semi-structured interviews on their perceptions of their TMS. Interview
27 data was analysed qualitatively, based on grounded theory, and TMS adherence information was
28 collected. **Results:** Thematic analysis showed that athletes reported their main reason for poor buy-in
29 to TMS was a lack of feedback on their monitoring data from key staff. Further, training modifications
30 made in response to meaningful changes in monitoring data were sometimes perceived to be
31 disproportionate, resulting in dishonest reporting practices. **Conclusions:** Perceptions of opaque or
32 unfair decision-making on training programme modifications and insufficient feedback were the
33 primary causes for poor athlete TMS adherence. Supporting TMS implementation with a behavioural
34 change model that targets problem areas could improve buy-in and enable limited resources to be
35 appropriately directed.

36 **Keywords:** high-performance, athlete feedback, adherence, behaviour change, wellbeing.

37

38 **Introduction**

39 An effective training monitoring system (TMS) can positively influence performance through
40 monitoring programme effectiveness and reducing the risk of illness or injury.¹ However, successfully
41 implementing a TMS can be problematic in elite sport, with issues relating to end-user buy-in and a
42 reticence to use scientifically validated measures.^{2,3} This discrepancy between what research
43 advocates and what happens in practice underlines the importance of providing elite sport with
44 feasible, valid training monitoring strategies and solutions to facilitate optimal performance and
45 mitigate athlete maladaptation.⁴

46 Recent guidelines for applied sport practitioners (scientific or medical staff) have suggested specific
47 approaches to overcome some of the issues surrounding training monitoring.⁵ However, an extension
48 of these guidelines is necessary as many sports have customised, often un-validated TMS.³ While it
49 may be scientifically desirable to replace un-validated TMS, careful thought is required on whether it
50 is practically achievable, as this may mean disregarding years of accumulated data. An alternative,
51 which may be more palatable but challenging to achieve, is to address the concerns a custom TMS

52 poses in-situ by assessing their reliability and validity.⁵ Despite the use of a custom TMS, elite sports
53 face significant challenges developing commitment and buy-in from end-users to TMS. In light of these
54 challenges, expanding existing guidelines⁵ to include strategies to promote buy-in and deal with
55 existing TMS problems would further support elite sports in optimising their TMS.⁶

56 By understanding the perspectives of end-users, new evidence-based strategies can be developed to
57 improve user engagement. TMS buy-in and success is more likely when these opinions are addressed,
58 as they can influence buy-in more than the objective benefits of the TMS alone.⁶ Research has begun
59 to explore what end-users want from a TMS,^{7,8} but only a small number of elite athletes' opinions have
60 been gathered.^{2,9} This research has highlighted athletes' need for a user-friendly, cross-platform
61 compatible interface that is not burdensome to complete; however, it has also identified a worrying
62 trend for dishonest or careless reporting in order to meet the sport's adherence requirements.^{2,10}

63 Practitioners are often the driving force behind TMS,³ with their scientific knowledge and inter-
64 personal skills relied upon to make the TMS a success.¹¹ However, there is little or no published
65 evidence of the elite sector using theoretical behaviour change models to support practitioners in the
66 adoption of TMS, despite the hurdles faced during its implementation. This lack of behaviour change
67 underpinning is surprising given that multiple frameworks and taxonomies for behaviour change, its
68 stages and interventions have been proposed.¹² Recently, researchers have advocated a social
69 ecological approach when implementing TMS,² but there does not yet appear to be published
70 evidence of this in practice. The Behaviour Change Wheel,¹⁴ an ecological framework for implementing
71 behaviour change interventions could instead provide elite sport with a structured approach to enable
72 selection of appropriate interventions and guide their subsequent implementation.

73 This study aimed to explore the views of a group of elite athletes who use a TMS and, using an inter-
74 disciplinary and mixed-methods approach, utilise this information to inform intervention strategies to
75 support TMS buy-in.

76

77 **Methods**

78 **Participants**

79 Recruited through convenience sampling, 9 national team female sprint water-sport athletes agreed
80 to take part in this study. The mean age of the athletes was 23.7 ± 2.5 years, with 3.8 ± 2.5 years of
81 their careers spent on a nationally-funded elite programme. All athletes were fully informed, in
82 writing, of the risks and benefits associated with participation, their anonymity was assured and

83 informed consent was gained. Ethical approval was granted through the University of Winchester
84 Ethics Committee.

85

86 **Design**

87 Following an education session on the TMS, athletes recorded daily wellbeing and training monitoring
88 logs for 12 months in a bespoke online platform, while adhering to their normal training programme.
89 Following the 12-month period of engagement with the TMS, all 9 athletes were invited to complete
90 a short questionnaire, followed by one-to-one interviews with the primary researcher.

91

92 **Method**

93 Quantitative information on adherence rates were extracted from the TMS dataset. Due to the 2016
94 Olympic Games, some athletes were not required to complete their monitoring information over the
95 entire 12-month period. Where relevant, this has been indicated in the results.

96 Using a grounded theory approach, semi-structured interview guides (Appendix B) were developed to
97 aid discussion and allow novel insights to emerge.¹⁵ Interviews ranged from 14–27 min in length and
98 were digitally audio-recorded, transcribed verbatim, and then re-checked for accuracy. The interviews
99 commenced with athletes completing a brief questionnaire Appendix A to provide a platform for
100 elaboration within the interview. This was followed by a discussion on the athletes' views on training
101 monitoring practices within their sport

102

103 **Data Analysis**

104 The questionnaire results were collated and interview data were analysed thematically, with NVivo 11
105 Pro (QSR International Pty Ltd., Doncaster, Australia) used to code the interview data. Using an
106 inductive approach, meaningful units of text were attributed to themes and subsequently coded to
107 nodes.¹⁵ This process was repeated multiple times and the nodes evolved to ensure the questionnaire
108 results were accurately reflected. The nodes were subsequently grouped into lower and higher order
109 themes (Table 1). Finally, athletes were sent the transcribed versions of their interviews and the coded
110 themes. Any comments raised were then considered in the construction of the final thematic analysis.

111

112 **Results**

113 Of the athlete's interviewed, 78% were either undecided or disagreed that they received enough
114 feedback from their TMS data (Figure 1a). A further 56% either disagreed or were undecided on
115 whether action was taken when meaningful changes in TM (training monitoring) scores occurred
116 (Figure 1b). The majority of respondents stated that they were honest in their TM responses, with
117 one athlete indicating that they were not (Figure 1c). However, 44% of respondents either agreed or
118 strongly agreed that TM feedback helped optimise their training and performance, with 56%
119 undecided (Figure 1d).

120

121 ******Figure 1 about here******

122

123 Higher and sub order themes are summarised in Table 1 along with the number of meaning units
124 coded from the interview transcripts. The most discussed theme related to feedback and
125 subsequent actions. When the examples of these were analysed, the majority of the remarks were
126 classed as ineffective examples of feedback. Under the Education and Awareness theme, the
127 majority of comments demonstrated a lack of understanding in relation to TM. A comparison of
128 negative and positive reflectivity and ownership under the Athlete Approach theme showed that
129 over half were negative comments.

130

131 ******Table 1 about here******

132

133 **Adherence**

134 Adherence completion rates in the year leading up to the interviews were $62 \pm 20\%$. This figure has
135 been amended to reflect that, due to the competition cycle, 3 of the 9 athletes were not required to
136 complete their monitoring from June 2016 until the August 2016 Olympic Games. Adherence was a
137 high order theme, with athletes making many references to both experiences that have promoted
138 (16 Meaning Units, M.U.) see Table 1, and reduced their adherence to TM (12 M.U.):

139

140 My adherence has been terrible, like full-stop, because when we started (TM) nothing was
141 done with the information. It had no benefit to my training.

142

143 Some athletes failed to see the benefit or value of TM unless there was visible use of the
144 information, consequently their adherence was negatively impacted. However, when the feedback
145 loop was completed, and athletes had confidence in the process, the opposite was true:

146

147 I was in the routine of doing it (TM), and I knew there would be holes in it if I didn't do it, and
148 it motivated [me] to carry on, because I knew I'd see it back.

149

150 Athletes made frequent references to initial difficulties in establishing the habit of completing TM, but
151 how, with time, it formed part of their normal training routine. Disruptions to their normal routine,
152 such as camps or competitions, were reported to negatively impact adherence. Sport-imposed
153 consequences for non-adherence were negatively viewed, with a perception that the consequences
154 weren't consistently applied, that they tailed off during the season, and that they could usually be
155 evaded.

156

157 **Athlete Approach**

158 Athletes demonstrated varied engagement with TM, from actively disliking it, through to being
159 indifferent or transactional:

160

161 If they're still giving the feedback, then we're happy to continue. Whereas if they stopped
162 giving the feedback you stop doing it, it just kind of becomes this. Like well you don't do
163 anything so I'm not going to bother. But if they continue to keep looking and checking, we're
164 happy to keep filling it in.

165

166 Or, at the other end of the spectrum, demonstrating self-reflection and engagement with the
167 information:

168

169 I think as I have grown as athlete actually learnt, actually realised that actually I can be using
170 this into my own kind of needs and benefits and stuff like that, I think now I understand it and
171 use it a bit more in my own processes.

172

173 Athletes indicated that they were usually truthful in their TM reporting. However, some said they were
174 prone to alter their responses during hard training weeks "to try and make you believe you're better
175 than what you are," or if they felt their true response might lead to them being removed from training.
176 Four athletes also felt that the TM process served as negative reinforcement of their fatigue levels,
177 and this was a particular concern during competitions, despite a recognition that the data during that
178 time would be useful.

179

180 **Education and Awareness**

181 It was clear that some athletes lacked an understanding of the purpose and benefits of TM, with 8 out
182 of 9 athletes having comments coded to this theme:

183

184 The coaches do pick up any injuries or anything, and that's why it's sometimes a bit like they
185 already know we've got something sore if we talk to them. Why do we need to put it on
186 this?

187

188 This lack of clarity was exacerbated by some athletes indicating that they were unsure how to best
189 report, interpret, or electronically access information on the online platform. In particular, they
190 found the reporting of the rating of perceived exertion (RPE) and session duration for time trials or
191 during competition problematic, indicating that the calculated session RPE was not always
192 representative of the actual training load they experienced. In contrast, some athletes revealed a
193 deeper understanding of the purpose of TM, demonstrating self-reflective behaviours or indicating
194 they could recognise meaningful patterns:

195

196 Well I think when it comes to injuries it's quite useful. You can kind of, sometimes you can
197 notice a pattern or there is like something creeping up then you would say oh actually this has
198 happened before.

199

200 **Feedback and Act**

201 Athletes identified a broad range of feedback preferences, favouring visual feedback supported by
202 formal or informal discussions. Preferred feedback frequency ranged from weekly to monthly, with a
203 mean of 25 days across all athletes. Athletes were however critical about the feedback and actions
204 taken in light of TM data. Feedback frequency and timing did not appear to meet athlete expectations,
205 with some athletes indicating that they believed the data was not looked at:

206

207 In the beginning when we started using it, nothing came of it, so we'd be filling this thing out.
208 And then you'd come in in the morning and they're like so "how are you today?", and like well
209 if you'd have just read the thing I've already filled out, we wouldn't have to have this
210 conversation. They obviously didn't read it.

211

212 Other athletes mentioned that as they had not been unwell they had not received any feedback and
213 the TM information was therefore not useful to them. One athlete also underlined the importance of
214 linking the wellbeing monitoring data back to training load in order to get a holistic picture of their

215 status. Several athletes reported positive benefits from both formal or informal discussion and
216 exploration of their TM data with staff. Those athletes that indicated they could perceive value in TM
217 gave examples of where the data had been used to benefit their training and recovery:

218

219 I think because they've started applying it to training a bit more, like the actual programme,
220 so they'll check that what you've put in is your perceived kind of output for the week, matches
221 what they wanted...and that they'll actually talk to you about it and give you a bit of feedback.

222

223 Athletes had contrasting views about actions taken based on TM data. Some felt that disproportionate
224 responses were taken when negative changes in TM data were observed, or that the scientific
225 robustness behind some of the decisions was questionable:

226

227 Because if you're tired, and you put tired down, they go oh you're too tired today, and I'm
228 like I'm not too tired. There's tired and then where's the limit...as an athlete you don't want
229 to be told not to train.

230

231 Whereas others felt no action was taken when TM scores changed:

232

233 I've been putting like high fatigue, high fatigue a long time before I'm ill, and it doesn't tend
234 to get hugely picked up on.

235

236 The TM data appeared to prove particularly useful for athletes who perceived they were on the verge
237 of an illness and aided them in identifying 'niggles' before they became significant issues. Overall the
238 athletes depicted a process that worked inconsistently.

239

240 **Planning and Design**

241 The majority of athletes (56%) completed monitoring in addition to what was required by their sport.
242 Additional monitoring most commonly comprised training diaries where technical and subjective
243 information was recorded, food diaries, GPS and/or heart rate data.

244

245 A range of technical issues with the mobile application were apparent, including sign-in issues, the
246 absence of a cross-platform mobile application and problems integrating and accessing the key
247 summary information. Athletes suggested a variety of methods to improve the TM process. These
248 included linking athlete self-report measures and training load data, and ensuring historical
249 information was accessible and well presented. They also requested that the daily use and feedback

250 of TM information became more visible, and that the sport consider allowing athletes the option of
251 picking one question each to allow more ownership over the TM process. Some athletes requested
252 rephrasing questions to allow comparisons to “normal,” as they felt this would give a better indication
253 of meaningful change.

254

255 **Discussion**

256 Research has provided insights into the scientific and technological components of a successful TMS,
257 (e.g. measure reliability/validity, specificity and ease of use).^{1,5} While perhaps intuitive, less has been
258 published on how to achieve desirable behaviours in athletes using a TMS (e.g. consistent, honest
259 reporting). Based on a cohort of elite athletes’ perspectives, this study has focussed on exploring
260 which factors may improve or impair TMS implementation. The primary concerns reported were:
261 disproportionate training modifications in response to meaningful changes in TMS data, and a lack of
262 athlete feedback.

263 When meaningful change was identified in their feedback, some athletes expressed concerns about
264 inconsistent or disproportionate training modifications made by staff (Figure 1b). This is perhaps
265 unsurprising given the lack of consensus of what constitutes meaningful change.¹⁶ For some athletes
266 (Figure 1c) these concerns gave rise to dishonest reporting in order to circumvent their potential
267 removal from training. Previously, dishonest reporting has only been described where punishments
268 were imposed for poor adherence.² Custom un-validated TMS may be at more risk of these
269 behavioural problems as their ability to detect meaningful change is usually unknown. Nonetheless,
270 building a culture of trust with athletes through agreed, transparent and proportionate responses to
271 TM data is likely to help combat these issues.

272 Feedback on their TMS data was reported to be highly valued by all athletes, particularly when it was
273 contextualised and related to training load. This finding was clearer in interview data than the
274 questionnaires (Figure 1a) with the inconsistent results potentially attributable to misinterpretation
275 of questionnaire prompts, or more emotive responses occurring within interviews.¹⁷ Some athletes
276 stated that failure to receive TMS feedback negatively impacted their adherence and perception of
277 TMS efficacy. Previous research has recognised the need for athlete feedback in a TMS,^{9,18} but the
278 powerful transactional relation between adherence and feedback expressed by the athletes, while
279 perhaps unsurprising, has only previously been reported with regards to a sports health surveillance
280 system.⁹ This highlights the need for sports to ensure that their feedback processes for TMS are
281 practical and that they facilitate the exchange of feedback between staff and athletes.⁵

282 When asked how frequently they would like to receive feedback, athletes in this study indicated that
283 every 25 days was acceptable. This was, however, contradicted by feelings of irritation and their
284 perceptions of feedback being ineffective if their daily changes in wellbeing were not scrutinised
285 (Table 1). Obtaining feedback frequency statistics could shed light on these contradictory findings, but
286 as feedback frequency is not indicative of quality, this still may not give a comprehensive picture of
287 how feedback influences adherence.¹⁹

288 While the need for feedback is becoming increasingly evident, what constitutes acceptable feedback
289 content and frequencies in order to maintain adherence is currently not well described. Previously it
290 has been reported that the majority of elite sports collected (55%) and provided feedback (42%) to
291 athletes on TMS data daily,³ but whether or not this feedback rate positively impacted adherence was
292 not reported. Further, while athlete feedback has been deemed important by recent research,⁹ details
293 on the desired frequency or content of feedback have not been outlined. Therefore, in order to
294 preserve TMS buy-in, sports should consider a balance between satisfying the need for athlete
295 requested feedback frequencies, which athletes may under-represent, and the staff workload
296 required for daily feedback.^{1,5,20} Furthermore, the content of feedback should contextualise patterns
297 (current vs. historical) and meaningful changes, in order to promote athlete self-reflection.

298 Despite athlete education sessions preceding TMS implementation, athletes reported that they were
299 unsure how to access and interpret their results. Contrary to previously reported data,^{21,22} athletes
300 also stated that session RPE misrepresented their training loads during time trials and competitions
301 and/or reinforced their fatigue levels. Where this occurs, maintaining the confidence of the athletes
302 in the TMS through discussion of the perceived shortcomings of session RPE and agreeing how to
303 tackle them, e.g. standardised accepted session durations/ratings, and agreed monitoring frequencies
304 around sensitive times (such as competition) may help maintain athlete adherence.

305 Many athletes also felt that there was a mismatch in feedback expectations between themselves and
306 staff, and that they were unsure of the purpose of the TMS in relation to their performance (Figure
307 1d). Perhaps as a result of this poor understanding, which has been reported elsewhere,⁹ athletes
308 indicated that they had modified their TMS scores to improve their own perception of wellbeing.

309 As education sessions are a tool frequently utilised to improve intervention efficacy in elite sport,²³ it
310 may be advisable to review the value of this intervention and to explore additional or alternative
311 methods, such as incentivisation, policy changes, or utilising experienced athletes to mentor new
312 recruits and model expected behaviours. Behaviour change models can provide further guidance.²⁴

313 Poor user-experience, a failure to integrate subjective and objective data and to visualise historical
314 data can cause athletes to become disengaged from TMS use. As discussed elsewhere^{2,5}, these issues
315 need to be overcome to provide a basic foundation for a serviceable TMS. To promote continued
316 engagement with the TMS it is advisable for it to become routinely utilised within the sport.
317 Performance reviews, video/technical analysis, (in)formal coach/athlete discussions, scheduling and
318 routine training programming, can provide avenues to regularly interact with the TMS.⁷ Exploring the
319 use of personalised questions for athletes, incorporating behaviour change theory, promoting
320 reflective behaviours and providing information and advice through the TMS may further support
321 engagement.²⁵

322 As multiple barriers to TMS implementation have been reported,² the next step in TMS evolution may
323 be the application of the methodical approach that a theoretical behaviour change model can provide.
324 While primarily targeting athlete behaviours, there may be utility in broadening the scope of any
325 behaviour change strategy to include other staff members.^{2,14} Behaviour change models could help
326 identify the most effective methods to enhance TMS buy-in, potentially saving time, money and
327 political goodwill.²⁶ Furthermore, an underpinning theory-driven strategy to promote successful TMS
328 implementation has the potential to support TMS buy-in further through increased intervention
329 effectiveness.¹²

330 A recent research focus on TMS has produced evidence for its utility in reducing injury/illness risk²⁷
331 and barriers to implementation.² A broad multi-level approach has been suggested to combat these
332 barriers² and, where possible, this is advisable. However, resource limitations in elite sport may dictate
333 a more targeted approach. Through understanding what factors significantly impact athletes'
334 engagement with TMS, targeted interventions to promote TMS use and behaviour change can be
335 used, thus reducing the time and resource burden of a broader multi-level approach.²⁶ A periodised
336 approach to both TMS use, the provision of feedback and the interventions employed may help
337 alleviate 'at risk' periods of poor adherence, e.g. during competitions.

338

339 **Conclusion**

340 When completed honestly, consistently, and in line with expectations, training monitoring information
341 can trigger wider conversations to support prevention of illness/injury and optimise performance.
342 However, behavioural issues highlighted in this study may prevent this from occurring unless
343 addressed with appropriately timed and selected interventions. If TMS implementation is planned
344 alongside behaviour change tools this could reduce the need to rely on the inter-personal skills of

345 practitioners to promote TMS buy-in, lessening the time and resource burden commonly encountered
346 when implementing a new TMS.^{5,26,28} The use of a planned and periodised approach to TMS use,
347 feedback and intervention implementation may further support the successful use of TMS.

348

349 **Practical Applications**

350 Integrating the use of TMS into daily practice through methods such as coach discussion and video
351 analysis should support athletes engage with TMS. Undertaking a periodised approach to TMS use and
352 feedback, whilst also ensuring clear expectation management on TMS capabilities, use and feedback
353 frequency could further help practitioners maintain buy-in from athletes.

354

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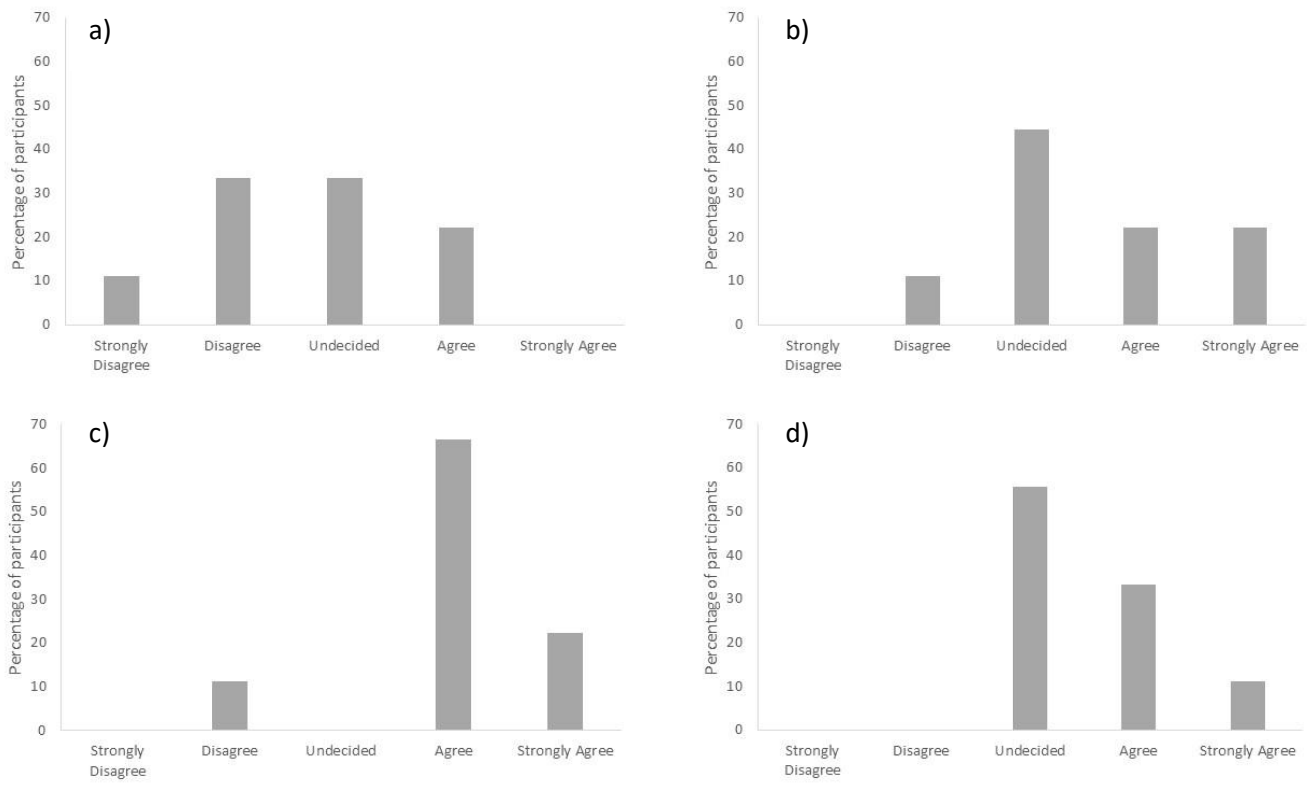


Figure 1.

439

440

441 **Table 1.**

Higher-order themes	Lower-order themes	Meaning units (M.U.)	Number of sources
Adherence	Habit forming and behaviour change	19	5
	Non-adherence consequences	10	8
	Adherence inhibitors	12	8
	Adherence promoters	16	9
	<i>Subtotal</i>	<i>57</i>	
Athlete Approach	Negative reflectivity and ownership	31	9
	Positive reflectivity and ownership	11	8
	Wellbeing definition and impact	28	9
	Monitoring process influences scoring	4	4
	<i>Subtotal</i>	<i>74</i>	
Education and Awareness	Lack understanding of monitoring	26	8
	Demonstrates understanding of monitoring	12	5
	<i>Subtotal</i>	<i>38</i>	
Feedback and Act	Effective examples	38	8
	Ineffective examples	58	9
	Athlete feedback preferences	18	9
	<i>Subtotal</i>	<i>114</i>	
Planning and Design	Additional monitoring	11	9
	Suggested improvements	32	9
	Perceived sensitivity of questions	13	9
	Technical & Equipment issues	12	6
	<i>Subtotal</i>	<i>68</i>	

442

443

444 **Figure 1.** Questionnaire responses by athletes indicating the strength of their feelings towards the
445 following questions: a) “I receive sufficient feedback from the data I enter into AER,” b) “When there
446 are meaningful changes in my TM scores, action is taken.” c) “I respond honestly to TM questions,”
447 and d) “TM and feedback helps optimise my training and performances.”

448
449 **Table 2.** The total number of meaning units and athlete sources attributed to the data themes
450

451 **Appendix A**

452 **Please rate and circle the extent to which you agree with the following questions:**

453 1. I feel I have received sufficient support and education to enable me to understand the reasons
454 for training/wellbeing monitoring

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>

455

456 2. Training/wellbeing monitoring and feedback has helped improve my understanding of my
457 wellbeing.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>

458

459 3. The questions posed in training/wellbeing monitoring are sensitive to changes in my
460 wellbeing.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>

461

462 4. I can identify a meaningful change in my training/wellbeing scores.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>

463

464 5. When there are meaningful changes in my training/wellbeing scores (as determined by either
465 myself or my coach/multi-disciplinary team) action is taken e.g. performing modified training.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>

466

467

468 6. I respond honestly to training/wellbeing monitoring questions.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>

469

470 7. Training/wellbeing monitoring and feedback helps optimise my training and performances.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

471

472 8. I receive sufficient feedback from the data I enter into training/wellbeing monitoring forms.

473 (Feedback could be in any form, such as a presentation, discussion, dashboard on the
474 monitoring app e.t.c)

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

475

476 9. Completing training/wellbeing monitoring is a burden on my time.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

477

478 10. I will continue to use some form of self-monitoring tool in the future.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

479

480 **Appendix B**

481 **Interview Guide**

- 482 1. What is your definition of athlete wellbeing?
483 a. How can wellbeing affect your ability to train/perform?
484 2. Why do you think you are being asked to complete training/wellbeing monitoring?
485 3. What expectations of training/wellbeing monitoring did you have?
486 4. Do you think training/wellbeing monitoring helped your training and performances?
487 5. Do you feel the training/wellbeing questions we are asking are sensitive to changes in your
488 wellbeing?
489 6. Do you feel you answer the training/wellbeing questions honestly?
490 7. What questions do you think we could include to better understand and monitor your
491 wellbeing and response to training?
492 8. Do you feel you received enough information and feedback from the data you entered?
493 a. How would you prefer to receive feedback? (what format, frequency etc)
494 9. Do you think you would be removed, or perform modified training as a result of red flags or
495 meaningful changes in your wellbeing data?
496 10. Did you consistently fill in training/wellbeing monitoring during the last season? (Yes/No)
497 a. Where there certain days or time-points where you stopped completing
498 training/wellbeing monitoring?
499 11. Are there consequences when your wellbeing data is not completed?
500 12. What were the drawbacks (if any) of using training/wellbeing monitoring?
501 13. What recommendations do you have for improvement of training/wellbeing monitoring in the
502 future?
503 14. Would you like to continue to use some form of self-monitoring tool?
504 15. Are you doing any additional monitoring outside of training/wellbeing monitoring?
505 a. What additional monitoring are you doing? (If any)
506
507