

1 **Exploring the sport-alcohol relationship: A longitudinal qualitative study**
2 **of student athlete drinking following the transition out of university**

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8 *Manuscript has been published online as Ahead of Print.*

9 Accepted author manuscript version reprinted, by permission, from Journal Clinical
10 Sport Psychology, 2023, <https://doi.org/10.1123/jcsp.2022-0034>

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Abstract

13 The purpose of this study was to provide new knowledge about the temporal and contextual
14 aspects of the alcohol-sport relationship. Eight UK student-athletes completed the Alcohol
15 Use Disorders Identification Test (AUDIT) in their final year at university, 18 months, and 30
16 months after graduation. They also completed semi-structured interviews about their drinking
17 motives, behaviours, and life circumstances. Results showed that participants reduced their
18 alcohol consumption after leaving university, but despite the onset of some adult
19 responsibilities, most were still drinking at hazardous levels. After university, drinking took
20 place with old friends, new colleagues, and new sporting teammates. At all time points, social
21 drinking motives were the most prevalent. Findings demonstrate a relationship between
22 alcohol and sport that is cemented at university but continues beyond it. Targeted

23 interventions to reduce the role of alcohol in the social experience of sport are needed to
24 support long-term athlete health.

25

26 **Key words:** Maturing out, drinking motives, drinking interventions, drinking behaviours

27

28 Individuals who participate in university sport have been found to engage in more
29 hazardous drinking behaviours than their non-athlete student peers. This includes consuming
30 greater quantities of alcohol, drinking more frequently and engaging in more binge or heavy
31 episodic drinking (Martens, et al., 2006; Partington et al., 2013; Zhou & Heim, 2014).
32 Greater incidence of heavy episodic drinking has been found to be associated with negative
33 personal outcomes such as injury and psychological harm, as well as negative community
34 outcomes including criminal damage and violence (Anda et al., 2002). This relationship
35 between sport participation and hazardous/ harmful alcohol consumption holds across race
36 and gender and has been found in collegiate athletes in multiple countries (Green et al., 2014;
37 O'Brien et al., 2008; Partington et al., 2013). As such, alcohol consumption has been
38 highlighted as one of the most pressing wellbeing concerns in collegiate sport (Chow et al.,
39 2022).

40 Although the links between hazardous and harmful drinking and participation in
41 collegiate sport have been noted, it has been suggested that heavy drinking among students is
42 a harmless expression of youthful high spirits, which they will grow out of once they assume
43 the responsibilities of adult life (Arria et al., 2016; Vik et al., 2003). This phenomenon is
44 referred to as “maturing out” (Conroy et al., 2021; O'Malley, 2004). There is a significant
45 body of research suggesting that individuals do mature out of excessive drinking once they

46 make the transition from adolescence to adulthood (Lee & Sher, 2018; Windle, 2020). This
47 trend towards a reduction in alcohol consumption has been seen generally amongst students
48 following graduation from college (Arria et al., 2016). However, little is known about the
49 maturing out phenomenon in students who are, or have been, athletes.

50 A longitudinal study by Cadigan et al. (2013) found that starting athletic involvement was
51 associated with binge drinking and ceasing athletic involvement with reductions in drinking.
52 However, there is evidence to suggest that for some athletes the relationship between alcohol
53 and sport endures beyond their years of active sporting involvement (Green et al., 2014).
54 These conflicting findings suggest complex contextual and temporal elements to the sport-
55 alcohol relationship that have not yet been explored. Green et al. (2014) argue that there are
56 few detailed longitudinal data sets on athletes and call for both more longitudinal work and
57 more qualitative work to further elucidate the mechanisms underpinning the sport-alcohol
58 relationship. In addition, Green et al. (2014) suggest the need for further study of the
59 relationship between substance abuse and exposure to sport that considers the continued
60 effect on the athlete once time in organised sport has finished.

61 A mechanism that has been used to explain student athlete-drinking behaviour is drinking
62 motives. Cooper (1994), using Cox and Klinger's (1988) motivation model of alcohol use,
63 identified four drinking motive types. These can be categorised as two internally driven
64 motives: coping (drinking to decrease negative emotional states); and enhancement (drinking
65 to increase positive emotional states); and two externally driven motives: social (drinking to
66 be sociable); and conformity (drinking to fit in). Studies of student-athletes have shown that
67 social and enhancement motives are the primary reasons for drinking (Doumas & Midgett,
68 2015).

69 Martens et al. (2005) have suggested that student-athlete drinking motives are likely to be
70 developed from a combination of the general motives identified by Cooper (1994) and sport-
71 related drinking motives that are specific to the sporting environment, such as team-related
72 motives (e.g., pressure from teammates to drink), positive reinforcement (e.g., drinking as a
73 reward for working hard at their sport), and sport-related coping (e.g., drinking to deal with
74 poor performances). Sport-related drinking motives have been found to be useful in
75 predicting alcohol consumption and alcohol-related problems in student-athletes after
76 accounting for demographic variables and general drinking motives (Martens et al., 2005).
77 However, methodological, and statistical limitations of the studies, and inconsistent findings,
78 make it difficult to draw definitive conclusions. Little is currently known about how student-
79 athletes' drinking motives may change as they transition away from university sport.

80 **The Current Study**

81 **Study Aims**

82 The current study aimed to respond to the call by Green et al. (2014) to add to the
83 longitudinal data sets on sport and alcohol. By adopting a longitudinal, predominantly
84 qualitative approach, we aimed to provide new knowledge about the temporal and contextual
85 aspects of the sport-alcohol relationship and, by using drinking motives as a framework, shed
86 light on the underpinning mechanisms. Our aim was to provide information to inform
87 interventions targeted at student-athlete drinking that will support long-term athlete health.
88 We aimed to answer the following questions: How do student-athletes' drinking behaviours
89 change over time following graduation? and what role do drinking motives play in shaping
90 these changes?

91 **Philosophical Approach**

92 Our philosophical position was informed by the practical concerns of applied sport
93 psychologists, clinicians, coaches, and athletes. Our primary focus was to close the gap
94 between academic and applied sport psychology. As such, our approach to this research was
95 situated within the pragmatic stance as described by Giacobbi et al. (2005). Pragmatists
96 choose methods and theories that are useful within a specific context to understand practical
97 problems rather than to reveal truths about the nature of reality (Giacobbi et al., 2005).
98 Giacobbi et al. (2005) make the point that a mixed methods approach in which qualitative and
99 quantitative data is collected in parallel can enable researchers to bring different
100 epistemological views and interpretations to the research, and as a result provide a more
101 comprehensive answer to the research question. In this research, we adopted what Giacobbi
102 et al. (2005) term a ‘parallel-simultaneous dominant-less dominant design,’ with the
103 qualitative method being the dominant method and the quantitative method being the less
104 dominant method.

105

106

Methods

107 Participants

108 Participants were purposefully selected (Creswell & Clark, 2017) from a wider sample
109 of 261 final year undergraduate students (82 men, 179 women) who had already participated
110 in the initial phase of a longitudinal survey-based quantitative study on student drinking
111 (Jankowski, 2018). Participants were selected because they had self-identified in the initial
112 survey as playing sport whilst at university, either for a university team or an external team.
113 Of the wider sample of 261 students, 50 students self-identified as playing sport whilst at
114 university.

115 All 50 students that met the selection criteria of playing sport whilst at university were
 116 contacted via their university email and were provided with basic information about the
 117 nature of the current study. Nine students agreed to participate in the current study. This
 118 would involve them participating in longitudinal interviews alongside the longitudinal
 119 collection of their Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993)
 120 scores. One participant withdrew from the study prior to the final stage of data collection
 121 (Time point 3). Although only eight participants fully engaged in the current study, each
 122 underwent an in-depth-one-to-one interview on three separate occasions. This enabled the
 123 collection of rich, contextualised, longitudinal data, on their drinking behaviour and motives.

124 Table 1 presents a summary of participants including their age at recruitment (mean =
 125 21.2, SD, 0.97), gender, level of sporting involvement, employment status, and AUDIT score
 126 at each of the three time points.

127 **Table 1 Sample Characteristics**

ID	Age	Sex	Sport TP 1	Sport TP 2	Sport TP 3	Employed TP 2	Employed TP3	AUDIT TP 1	AUDIT TP 2	AUDIT TP 3
Jade	20	F	Jiu Jitsu	Jiu Jitsu	Jiu Jitsu	Student	Employed	8	4	4
Alan	21	M	soccer	soccer	soccer	Employed	Employed	20	24	20
Lucy	21	F	soccer	-	-	Employed	Unemployed	18	7	6
Billy	23	M	Rugby	Rugby	Rugby	Employed	Employed	20	17	15
Sean	22	M	soccer	-	soccer	Student	Employed	10	4	6
Ellie	21	F	Gymnastics	-	-	Employed	Employed	8	4	4
Dina	22	F	Athletics	-	-	Employed	Employed	16	8	8
Katy	20	F	Rugby	Rugby	Rugby	Employed	Employed	19	13	15
Rochelle	21	F	Rugby	-	-	Employed	Unemployed	17	13	N/A

128

129 **Procedure**

130 Following full institutional ethical approval, participants were contacted via their
 131 university email and provided with a participant information sheet and an informed consent

132 form. Participants were given time to consider the information and to ask questions before
133 agreeing to take part. Written, first-person informed consent was gained from each participant
134 prior to commencement of the first round of interviews (time point 1). Participants were then
135 contacted to arrange a convenient time and location for interview.

136 Interviews were conducted at three separate time points, with a gap of at least 12
137 months between each round. The data collection was designed in this way to allow an in-
138 depth picture to emerge of each participant's life during their final year at university, and as
139 they moved further in time from the point of their graduation. Given that maturing out is not
140 simply a function of age but rather is related to the uptake of adult responsibilities (Vik et al.,
141 2003), it was important to gain insight into their life circumstances at each time point. As
142 participants were also involved in the online longitudinal survey that was part of the wider
143 study, AUDIT scores were available for each participant, at each time point, as a self-
144 reported record of their alcohol consumption. To reduce attrition between each phase of the
145 longitudinal data collection in the wider study, incentives were offered in the form of a prize
146 draw for £150 of Amazon vouchers at each time point. Incentives such as this have proven
147 effective in combating attrition in previous longitudinal studies (Audet, 2004). A Facebook
148 and Twitter profile were set up to provide regular topical information on student drinking. No
149 additional incentives were offered for participation in the interviews.

150 An interview guide was devised following a review of existing literature. The guide
151 included topics such as current drinking behaviour, reasons for drinking, general life
152 circumstances and the contexts within which drinking took place. The aim was to elicit rich,
153 in-depth data. Prior to commencement of data collection, a pilot interview was held with a
154 21-year-old female gymnast who had scored in the hazardous category on the AUDIT.
155 Following the pilot interview, the guide was deemed appropriate to obtain the desired data.

156 The same interview guide was used with each participant to ensure consistency of the topics
157 discussed. However, the semi-structured nature of the interviews allowed each participant to
158 deviate from the guide to discuss areas more relevant to their personal experiences (Kallio et
159 al., 2016). This has been found to be an effective method for collecting data when the
160 research question(s) require information on the thoughts, feelings, and beliefs of people on a
161 particular topic, and where there is a need to delve deeply into personal and potentially
162 sensitive issues (DeJonckheere & Vaughn, 2019). Slightly amended interview guides were
163 developed for the second and third time points to reflect the fact that the participants were no
164 longer full-time undergraduate students.

165 The first round of data collection took place at the end of the students' final year at
166 university (Time point 1), with the second and third rounds of data collection taking place 18
167 months (Time point 2) and 30 months (Time point 3) post-graduation. Additional time was
168 given between Points 1 and 2 to allow participants time to settle into their new post-
169 university life following the summer break at the end of their final year. The first round of
170 interviews all took place face-to-face on the university campus. Interviews at Points 2 and 3
171 were conducted via a mixture of face-to-face and telephone interviews depending upon the
172 participant's location. All interviews were audio-recorded to ensure that no relevant data
173 were lost. The same researcher (lead author) carried out all the interviews. Each interview
174 lasted on average one hour resulting in a total of approximately 24 hours of interview data.
175 Participants were assigned pseudonyms to ensure anonymity. After completion of the
176 interviews, participants received a debrief sheet.

177 **Data Analysis**

178 All interviews were transcribed verbatim to produce an accurate record of the
179 conversation and to enhance the researcher's familiarity with the data (Dey, 2003). The initial

180 phase of analysis consisted of describing the drinking behaviours exhibited by the
181 participants at each time point, and the contexts in which drinking was taking place. The
182 participants' life circumstances were also considered. Comparisons were drawn between the
183 different time points to identify similarities and differences. The focus of the analysis then
184 became about understanding what decisions and motives underpinned the drinking
185 behaviours.

186 Each interview was coded and analysed using thematic analysis following the principles set
187 out by Braun and Clarke (2006). Interviews were grouped by time point, creating three
188 separate analyses. Thematic analysis was used to identify, analyse, and classify themes.
189 Themes were created by first generating codes from the data at a line-by-line level. This was
190 done inductively, using the data itself to drive coding, and therefore not influenced by a
191 particular theoretical framework. Following this initial coding, commonly occurring themes
192 were identified from the codes. These themes were then reviewed and grouped based upon
193 their relatedness, allowing for construction of a hierarchal model of main themes and sub-
194 themes. At this point, Cooper's (1994) model of drinking motives was applied to the data.
195 This model was selected due to the extensive evidence-base supporting the existence of the
196 four predicted motives (Cooper et al., 2016). Martens et al.'s (2005) sport-related motives
197 were then applied to ensure that the sport context was considered. Themes were compared
198 across time points to see how drinking behaviours and motives developed and changed both
199 individually and as a group. The analysis was carried out by the first author. Two members of
200 the research team who have expertise in qualitative research acted as 'critical friends,'
201 encouraging the first author to reflect on and consider multiple and alternative interpretations
202 of the data set (Smith & McGannon, 2017). Specifically, the first author was asked to explain
203 and justify his decisions. Where there were differences of opinion between the first author
204 and the critical friends, these differences were discussed, and justifications presented. The

205 three then came to an agreement as to the final decision. For example, at Time Point 2 there
206 was initial disagreement as to whether a predominant motive for drinking in a new social
207 circle should be described as ‘enhancement,’ or ‘social.’ Discussion between the first author
208 and the critical friends resulted in the interpretation of an interaction between enhancement
209 and social motives. An enhancement motive (to increase confidence) was present but driving
210 the drinking behaviour was the main goal of being sociable.

211

212

Results and Discussion

213 Time Point 1: Final Year of University

214 Drinking behaviour and context

215 During their final year at university, all participants reported going out drinking at
216 least once a week. Several were engaging in heavy drinking on multiple occasions across the
217 week. As can be seen in Table 1, all participants scored hazardous or above on the AUDIT.
218 Drinking activities typically started with “pre-drinking” at home or at a friend’s house, where
219 cheap wine and spirits were consumed. Pre-drinking has been found to contribute to
220 increased intoxication and a range of adverse consequences such as blackouts, drunk driving
221 and aggressive behaviour (Kuntsche & Labhart, 2013). Pre-drinking events were usually
222 followed by trips to local bars and clubs offering low-cost alcohol. Student-athletes drank
223 with friendship groups on most days of the week, but Wednesday night was restricted to
224 socialising with teammates on ‘sports nights out.’ Sports nights out were characterised by
225 heavy drinking, fuelled by participation in drinking games and challenges. These activities
226 are akin to those described in previous research on student-athletes (e.g., Clayton, 2013;
227 Sparkes et al., 2007).

228 **Drinking motives**

229 The most prevalent motive was social. Participants were motivated to drink to
230 increase the enjoyment of social functions (Cooper, 1994). This finding supports work that
231 has been observed in studies both in the UK and elsewhere (e.g., Clayton & Harris, 2008;
232 Kuntsche et al., 2006; O'Brien et al.; 2008, Zhou & Heim, 2014). Alcohol formed a key part
233 of every participant's social experience, particularly with their sports team/club. This
234 included the Wednesday 'sports night out,' social activities following training sessions and
235 watching sport together as a group.

236 *Billy: Saturdays we'd have a training session, probably 10-12. You take your clothes*
237 *with you then 12, half 12, you showered at the club. You were all together. 'Oh,*
238 *should we go to the pub? Rugby kicks off in half an hour.'* So, you know from
239 *September through to say May, those months were filled with alcohol on a Saturday*
240 *because of the rugby.*

241 Previous research has established that the most reported motive for drinking amongst
242 young people is 'social reasons' (Lee et al., 2007), and that student-athletes are even more
243 likely to report social motives than their non-athlete student peers (Wilson et al., 2004). Read
244 et al. (2003) suggest that college students may have 'social lubricant' expectancies around
245 alcohol consumption, i.e., a belief that drinking alcohol will make the social situation more
246 enjoyable. The current participants appeared to hold similar expectancies.

247 *Jade: "Because it was social because everyone else was and when you go out*
248 *you tend to have a drink."*

249 All participants mentioned conformity as a key motive in relation to their alcohol
250 consumption. Conformity motives have been identified in previous studies on student-

251 athletes (e.g., Doumas, 2013; Taylor et al., 2017; Waldron & Krane, 2005). Participants
252 talked about the pressure they felt to consume alcohol to make friends, be accepted within the
253 group, and be invited to social events. Participants also discussed examples of more explicit
254 peer pressure from their sports teams. This would be described as team-related drinking
255 motives, as defined by Martens et al. (2005).

256 *Katy: If you say even before we play the game that you're not going out or you don't*
257 *want to go out, by the time you've got home or finished where we have tea afterwards,*
258 *you'd probably be going out because they'll probably persuade you to go out.*

259 Conformity was also linked to competition within sports teams as evidenced by the
260 following quote from Billy.

261 *Billy: There's always the 'I've got to out-drink him' or you know you play drinking*
262 *games on the bus... expectations of the rugby team itself are I guess the pressures that*
263 *the lads feel that they have on them.*

264 Competitiveness has been linked to increased alcohol consumption in studies on US
265 collegiate athletes. For example, Serrao and colleagues (2008) found that higher levels of
266 competitiveness are related to increased alcohol consumption in both recreational and elite
267 athletes and amongst non-athletes. Athletes with high levels of competitiveness were more
268 prone to drinking large amounts of alcohol at single sittings. This could be linked to the social
269 status gained from “beating” their peers by drinking a greater volume or drinking faster
270 (Hummer et al., 2011). Athletes may also feel obliged to participate in competitive binge
271 drinking challenges on sports nights out (team-related motives).

272 It has been suggested that sports clubs are more intense and formalised versions of the
273 drinking groups which occur on university campuses, and that they have more clearly defined

274 social structures and behaviours (Christmas & Seymour, 2014). In their three-year
275 ethnographic study of the jock culture on one university campus, Sparkes et al. (2007)
276 identified what they called ‘the twelve commandments’ of jock culture. These ‘unofficial
277 rules’ acted as a set of structuring practices for acceptance into the culture. Several of the
278 rules are associated with drinking behaviour, e.g., attending post-match social events,
279 engaging in heavy drinking, participating in drinking games, and respecting the hierarchical
280 structure of the culture in which team members, particularly first year students (freshers) are
281 expected to drink on demand. The rules were directly enforced by senior members of the
282 group, but they were also internalised by individual athletes and then used to guide their own
283 behaviour. This adherence to the rules is evident in the comment by Lucy.

284 *Lucy: Wednesday nights in particular. Err was sports night and it was sort of like you*
285 *have to go out on like Wednesday nights if you’re part of a team.*

286 Peer pressure has been shown to be a motivational factor in alcohol consumption in
287 adolescents and young adults (Studer et al., 2014). Some studies have suggested that peer
288 pressure is less significant for students who are nearing the end of their degrees (Ferrer et al.,
289 2012). However, previous research was focused on students rather than student-athletes. It may
290 be the case that the student-athletes in the current study still felt peer pressure in their final year
291 because, as senior players in their teams, they were required to conform to the rules of the jock
292 culture and expectations of teammates (Donnelly & Young, 1988).

293 *Katy: In the second year I started living with some of my teammates and then the same*
294 *again in the third year as well. Once you get new freshers you become friends with them*
295 *and then they’re wanting to go out because they are freshers. So, they want all the older*
296 *ones to go out too. Obviously, the social peer pressure, it doesn’t help with living with*
297 *teammates.*

298 The final motive that participants discussed at Time point 1 was to use alcohol as a
299 means of “blowing off steam”, escaping the pressures of university life, and celebrating
300 academic success. This is in line with the findings of Kuntsche et al. (2005) in which heavy
301 drinkers were found to drink for mood enhancement purposes. Participants drank following
302 periods of heightened stress, such as after assignment hand-ins. The motive was to enhance
303 positive mood following the hand-in rather than as a coping strategy during the stressful period.

304 Two participants mentioned behaviours that could be viewed as signs of more serious
305 alcohol issues. One participant discussed the fact that Wednesday night drinking events were
306 an opportunity for very heavy drinking to be viewed as socially acceptable. The other talked
307 about wanting to have a drink because they had not yet had one that day. In their review paper,
308 Ham and Hope (2003) suggest that coping motives for drinking are related to greater
309 experience of drinking problems and psychological distress in college students. It has been
310 suggested that the student-athlete lifestyle may result in a unique combination of stressors that
311 increase the likelihood of student-athletes drinking due to coping motives (Wilson & Pritchard,
312 2005). Martens et al. (2005) suggest that student-athletes may have sport-related coping
313 motives for drinking, i.e., to help them deal with a poor sporting performance. Participants did
314 drink to drown their sorrows after defeats. However, for most of the participants, at this stage,
315 social, conformity and enhancement motives were more prevalent than coping motives.

316 **Time Point 2: 18 months after graduation**

317 **Drinking behaviour and context**

318 18 months after graduation, most participants reported slightly lower AUDIT scores than
319 they had during their final year at university (see Table 1). However, for most participants,
320 scores were still in the hazardous or above categories, and they were still engaging in heavy
321 drinking on a weekly basis. They did not yet have the traditional responsibilities of marriage

322 and children that have been associated with maturing out (O'Malley, 2004) but they had
323 begun to take on some adult responsibilities. For example, all were employed or involved in
324 courses of study that involved work placements (Settersten Jr & Ray, 2010). Participants
325 commented that the responsibility of their jobs had an impact on the pattern of their drinking.
326 In contrast to their time at university, no one reported regular multiple weekly outings.
327 Instead, they were consuming most of their weekly alcohol intake in one sitting, typically at a
328 weekend. This was to avoid being tired or hungover at work. For some participants, the fact
329 that they were now earning their own money made them reflect more carefully on their
330 spending.

331 Drinking still took place within friendship groups. However, the composition of these
332 groups had evolved. Participants were now drinking with two or three different groups.
333 One group was their old university friends or friends from childhood that they had
334 maintained contact with. They were not seeing these friends as regularly as they had
335 previously but did meet up with them for specific social occasions, particularly
336 landmark events. Participants who were employed were also drinking with their new
337 work colleagues. For some participants, this new group had become central to their
338 drinking activities. Some, but not all, participants still engaged in the type of pre-
339 drinking activity that they had done at university but here it was with work colleagues.

340 *Katy: Yeah, so usually it starts in the office. We finish at five on a Friday, so usually*
341 *they'll get the beers out at about four in the office.*

342 It was not clear whether the decision to engage in the pre-drinking was due to
343 financial considerations or for other reasons such as conforming with the behaviour of
344 their colleagues.

345 For those participants who had maintained involvement in sport since leaving
346 university, their sports teams/clubs constituted a third drinking group. Drinking in this
347 sports group ranged from casual drinking after games to much heavier drinking akin to
348 the drinking behaviour exhibited during their student years. For those involved in a
349 sports-based drinking group, the social interaction of the group revolved around alcohol.

350 **Drinking motives**

351 As the participants transitioned away from university, social motives to drink
352 remained highly prevalent.

353 *Sean: The majority of social occasions, particularly in the evening, would involve you*
354 *know alcohol, ...I'd say it had a pretty big...big effect on what we did and where.*

355 When drinking with childhood or university friends, drinking motives were
356 predominantly social. Previous research has demonstrated that if alcohol consumption initially
357 forms a key part of a group's social activity it will likely continue to do so (Cheadle &
358 Williams, 2013). When participants found themselves in new social situations away from their
359 established drinking groups, alcohol was used to increase feelings of confidence. This is
360 highlighted in the following quote from Alan. In this context alcohol is being used to enhance
361 confidence (enhancement motive) to be better able to enjoy the social event (social motive).

362 *Alan: I probably socialised more with alcohol involved, I think it gives you a little bit*
363 *more confidence in socialising with different people... this is in terms of people who*
364 *you didn't really know and having a little bit of a conversation with different people.*

365 Participants talked about how they used alcohol as a social crutch (coping motive) when
366 engaging in social activities with new friendship groups from new university courses or jobs.

367 This is a tactic that they learned through their university sport participation. Previous research
368 has shown that alcohol is often used as a facilitator for new social interaction (Cheadle &
369 Williams, 2013; Kuntsche et al., 2006). Drinking to cope with meeting new people or engaging
370 in new social activities has previously been found in socially anxious college student drinkers
371 (Ham et al., 2009). It is possible that some of the athletes in the current study may identify as
372 socially anxious drinkers. However, this was not specifically discussed with the participants,
373 so it is not possible to draw any definitive conclusions in relation to this.

374 Currently, the mechanism underpinning the relationship between social anxiety and
375 alcohol related problems is not fully understood, and findings are contradictory. However, it
376 has been suggested that socially anxious drinkers may be more susceptible to perceived peer
377 drinking norms (Terlecki et al., 2012), and may exhibit stronger conformity and coping motives
378 (Terlecki & Buckner, 2015). There is a need to further explore the relationship between socially
379 anxious drinkers and alcohol-related problems, particularly in athlete populations. However,
380 this was beyond the scope of the current study.

381 Most research in adult populations has focussed on coping motives such as stress relief
382 as a key motivation for drinking ; Naimi et al., 2003; O'Brien et al., 2007). However, for these
383 participants, alcohol was being used to cope with the anxiety of new social situations (coping
384 motive), by bolstering confidence (enhancement motive) and thus gaining desired social
385 experiences (social motives). This interaction of motives is an interesting finding. Research has
386 looked at the interaction between drinking motives and other variables (e.g., presence of
387 friends, Thrul & Kuntsche, 2016; social norms, Halim et al., 2012; coping strategies and
388 alcohol expectancies, Hasking et al., 2011). However, we were unable to find previous research
389 specifically looking at the interactions between different drinking motives, and there is a need
390 for more research into this.

391 One of the biggest changes at time point two was that participants experienced little
392 direct pressure to drink. Participants mentioned that, whilst it would be acceptable to turn up
393 to lectures hungover because lots of people attended lectures hungover, this does not happen
394 in a work environment, and so they would not do it. Here, we see conformity motives having
395 an influence on participants' drinking but, in this case, conforming involved reducing alcohol
396 intake. One participant mentioned that when she returned to university, she experienced peer
397 pressure to drink heavily, and was motivated to conform to this behaviour again.

398 At time-point two, only four of the eight participants were still actively involved in
399 sport (See Table 1). For those still playing sport, social drinking motives were still very much
400 evident. Billy had continued to play rugby at semi-professional, national level competition
401 following his graduation from university. Despite this high standard of play, many of the
402 drinking behaviours that he engaged in with his university team were still an important part of
403 his involvement in the sport after his graduation.

404 *Billy: Game Day was a Wednesday at University; so the same procedure would*
405 *happen on a Wednesday evening, as it would as a Saturday once I graduated.*

406 The relationship between alcohol consumption and rugby participation is well
407 documented. For example, O'Brien and colleagues (2005) in a study of alcohol consumption
408 in rugby players at provincial and international levels found that hazardous levels of alcohol
409 consumption were common for their participants. Studies have found that belief that their
410 sports team approved of binge drinking predicted intention to binge drink and actual binge
411 drinking (French & Cooke, 2012). For Billy, drinking was a significant feature of his post-
412 university rugby participation and was a practice that he felt was approved of by his club.

413 Drinking to alleviate stress from daily life (coping motive) was another motive that was
414 present following graduation. Some participants were motivated to drink to help them cope
415 with the increased demands of post-graduate study.

416 *Jade: It was a bit different when you were on a PGCE (Postgraduate Certificate of*
417 *Education) it was more like you were going out to...like get a release.*

418 Alcohol consumption has long been associated with stress relief and tension reduction
419 (Lee et al., 1999). Indeed, research has highlighted the role of alcohol consumption as a coping
420 motive in people experiencing high levels of stress (Corbin et al., 2013). Coping was also a key
421 drinking motive for those participants that were in employment. In this case, it was to help
422 them to forget the pressures of the working week. In addition to drinking to attenuate negative
423 mood (coping motive), this could also be seen as drinking to enhance positive mood and
424 wellbeing (enhancement motive).

425 While alcohol use is frequently linked to relaxing and having a “good time”, literature
426 highlights the risks of stress-related alcohol consumption (Sadava & Pak, 1993). Studies have
427 pointed to this type of behaviour being a risk factor for the onset of depression and other
428 anxiety-based disorders (Sadava & Pak, 1993). In a recent study of drinking behaviour,
429 motives, and depression during the covid-19 pandemic, McPhee et al. (2020) found
430 associations between coping drinking motives and symptoms of depression, as well as between
431 coping drinking motives and alcohol consumption. While it is impossible to determine if any
432 of the participants in this study are likely to fall into these risk categories, the fact that some of
433 them discussed coping as a key drinking motive is a potential cause for concern.

434 **Time point 3: 30 months after graduation**

435 At time point 3, AUDIT scores reported for the group had largely stayed the same as
436 at time point 2. As was the case at time point 2, at this stage, most participants still engaged
437 in sport were drinking at hazardous levels, and at higher levels than those who had
438 discontinued their sporting involvement (See Table 1). Drinking was predominantly taking
439 place with work colleagues and, in the case of those still involved in sport, with teammates.
440 Participants described their drinking with work friends as like the behaviour that
441 characterised their drinking whilst at university. Some participants mentioned that they and
442 their friends were more settled in their romantic relationships by this point and that this
443 resulted in fewer ‘big nights out.’ Again, the financial implications of drinking were
444 discussed at this stage, and some participants talked about being mindful of the financial cost
445 of heavy drinking and the desire to save up. Here we see some further evidence of transition
446 to adult responsibilities.

447 For those who were still involved in playing sport, their sports team remained a highly
448 significant drinking circle, and drinking activities within this group had not changed in nature
449 from how they were described at time point 2. The two drinking groups (work and sport)
450 were separate and, as such, offered those still involved in sport additional drinking
451 opportunities. Several participants mentioned that they had reduced their drinking to sensible
452 levels at this time point, yet according to their AUDIT score their drinking behaviour was still
453 hazardous or harmful. This finding is consistent with the findings of other studies examining
454 perceptions of sensible drinking limits (Cooke, et al., 2010). There are clear implications
455 here for the need to intervene during the university years to reduce consumption levels and
456 change perceptions of what constitutes sensible drinking.

457 **Drinking motives**

458 In the final phase of data collection, social rewards (social) and enhancing positive
459 mood/fun (enhancement motive) were the most common motives. Although conformity and
460 coping motives were still present, they played a smaller role. Although they did still use
461 alcohol to bolster confidence and combat anxiety in unfamiliar social settings, participants
462 were now much more familiar with, and comfortable in, their post-university drinking
463 groups. This could explain why social motives remained prevalent, whereas coping motives
464 were less evident than at time point 2. For participants who were not consuming alcohol on a
465 weekly basis, large social gatherings were the primary context for their drinking, e.g.,
466 weddings, birthdays, etc. Again, drinking motives were primarily social although
467 enhancement motives also came into play.

468 Like at time point 2, there were fewer references to explicit peer pressure
469 (conformity) as a motive to drink. Additionally, the participants seemed further removed
470 from university friendship groups and were now only socialising with a few core friends from
471 this period. Any pressure to drink felt by participants was from trying to adhere to social
472 conventions and norms (indirect pressure). Previous research on the role of peer pressure in
473 heavy drinking has demonstrated that it is often indirectly linked to alcohol use, and, in fact,
474 enhancement motivations and coping motivations are the real factors at play (Studer et al.,
475 2014). Despite this, the notion of conformity did still seem to be prevalent in certain
476 scenarios, such as drinking publicly.

477 Two of the participants who were not involved in sport at time point 2 had returned to
478 active participation by time point 3, meaning that five of the eight participants were involved
479 in regular sport participation at this point. For all the participants still involved in sport, whether
480 it was playing or coaching, sport participation was still a main context for their drinking. When
481 looking at the AUDIT scores for the two participants who had returned to sport at point 3, there

482 was an increase when compared with their point 2 scores (see Table 1). Billy, who was still
483 playing semi-professional rugby, characterised the importance of alcohol in his sport, and the
484 pressure to drink (conformity motive).

485 *Billy: I think from grassroots level to professional level. I think, specifically with rugby,*
486 *there is a culture of rugby players being known for enjoying a beer. I think that's the*
487 *majority of sports but more specifically rugby players.*

488 The final prevalent motive amongst participants at time point 3 was coping,
489 specifically, stress relief. This is another factor that was present across all three points of the
490 study but had manifested in different ways. Point 3 was very similar to point 2 in that
491 participants were motivated to drink to escape the pressures of the working week.

492 **Clinical implications**

493 Our findings indicate that there is a clear need for clinicians to not only develop
494 targeted interventions to reduce student-athlete drinking, but to consider how to communicate
495 more effectively to student-athletes what sensible drinking levels are. Due to the high levels
496 of drinking that take place and are normalised in university sports clubs, student-athletes'
497 perceptions of sensible drinking are not accurate. Even though they may reduce their levels of
498 consumption, because they are starting at such a high point, such reductions are not always
499 taking them to sensible levels of consumption. Several of the current participants admitted to
500 engaging in drinking to help them cope in new social situations. Although the relationship
501 between social anxiety and drinking is not fully understood and has not been explored
502 extensively with student-athletes, such athletes may benefit from psychotherapy to help
503 manage social anxiety. In addition, previous research has found that socially anxious
504 drinkers underutilise protective behavioural strategies (PBS) in relation to drinking. Specific

505 interventions that teach student-athletes protective behavioural strategies such as stopping
506 drinking at a certain time, avoiding pre drinking prior to nights out, and putting extra ice in
507 drinks could help to prevent the harms associated with heavy drinking (Terlecki et al., 2020).

508 There is some existing research on students who transition from heavy to moderate or
509 light drinking (e.g., Conroy et al., 2021). This research shows that the transition from heavy
510 to lighter drinking brings with it a range of dilemmas that individuals must consider and
511 negotiate. Conroy et al. (2021) suggest that future interventions should take account of the
512 dilemmatic nature of the transition. For example, they recommend a reflective diary approach
513 that enables students to log and reflect upon their transition experiences and to identify the
514 benefits of lighter drinking. This approach could prove valuable in informing interventions
515 with student-athletes.

516 Further insight could be gained from findings relating to athletes' alcohol expectancy
517 outcomes. Zamboanga et al., (2012), found that high school athletes who showed greater
518 endorsement of negative athletic-functioning drinking expectancies (e.g., alcohol's effect on
519 one's ability to learn new plays and to recover from sporting activities) exhibited lower levels
520 of risky drinking. Educational interventions that focus on raising awareness of the negative
521 impact of alcohol on athletic performance could prove valuable.

522

523 Conclusion

524 Although these participants had begun to make the transition to adult responsibilities,
525 and a slight reduction in alcohol consumption was evidenced, most were still drinking at
526 harmful or hazardous levels 30 months post-graduation. Significantly, the participants
527 themselves believed that they had reduced their drinking to sensible levels and did not

528 perceive a need for any further reductions. This misperception about what constitutes sensible
529 drinking originates in the heavy drinking practices experienced within student sport, which
530 provide a skewed frame of reference that has important health implications moving forward.

531 Further long-term consequences for student-athlete drinking were also found. Those
532 who remained actively involved in sport following graduation were drinking more than those
533 who had ceased participation, and membership of a sports club provided these individuals
534 with additional opportunities to drink. Interestingly, those who had left sport at time point 2
535 had reduced their drinking but when they returned to sport at time point 3 they reported that
536 their consumption had increased again. These findings lend support to the suggestion that the
537 relationship between sport and alcohol consumption is an enduring one and that serious
538 consideration should be given to the development of alcohol interventions targeted at adult
539 sports teams and clubs. Finally, at all three time points, drinking was predominantly driven
540 by social motives. During their time at university, participants had learned that social events
541 were more enjoyable if they engaged in heavy drinking, and this expectancy was transferred
542 onto other social situations once they had left university. Participants were predominantly
543 motivated to drink to fit in, to enhance a positive mood and, once they had left university, to
544 cope with new social situations and work stress. Although to date interventions with student-
545 athletes have predominantly focused on reducing alcohol intake, our findings suggest that
546 they would also benefit from psychological interventions to develop social confidence and
547 manage anxiety around social situations, both in sport and more broadly, as well as to
548 manage work-related stress.

549 Limitations

550 Potential limitations of this study are the small sample size ($n = 8$), the small range of
551 sports included in the sample, and the fact that participants are all from one UK university.

552 We acknowledge that these issues are problematic in terms of precluding statistical-
553 probabilistic generalisability. However, due to the ontological and epistemological
554 assumptions that underpin qualitative studies, statistical-probabilistic generalisability was not
555 a meaningful goal for this research. The aim of this study, as is fitting with qualitative
556 approaches, was to examine student-athletes' lives in rich detail. To this end, small,
557 homogenous samples, purposefully chosen are strengths of the qualitative process (Smith,
558 2018). As qualitative researchers, we do not ignore the relevance of generalisability.
559 However, rather than seeking statistical-probabilistic generalisability, our aim was for
560 naturalistic/representational generalisability (Smith, 2018).

561
562 Naturalistic/representational generalisability is reached on the basis that the research
563 resonates with the reader's own experiences i.e., the reader feels as if the research findings
564 are recognisable in relation to their own experiences or to experiences they have witnessed,
565 and that they 'ring true' to those experiences. If they do not ring true, the findings provide
566 opportunity to discuss and explore alternative responses. To achieve naturalistic
567 generalisation, we have provided rich detail of the participants' lives through 'evidence,' in
568 the form of quotes, contextual details, and theoretical expressions to help readers reflect and
569 make connections to their own lives (Smith, 2018).

570 In the UK, the legal drinking age is 18 years. The student-athletes in this study could
571 therefore legally drink during the entirety of their university careers. This is not the case in
572 those cultures where the legal drinking age differs to the UK. As such, we acknowledge that
573 our findings may not resonate with readers from other cultures and present these findings as a
574 starting point for exploring points of similarity and departure.

575 A further limitation of the study is that we did not explore the influence of family
576 factors including role modelling and family history of alcohol use or abuse. These are factors

577 that could shape an athlete's drinking motives and drinking behaviour but were beyond the
578 scope of the current work. Including these factors in future longitudinal qualitative work
579 would provide further insight and understanding.

580 Future directions

581 Whilst we have shed light on the relationship between the drinking behaviours and
582 drinking motives of student-athletes once they have left university, there is still a need for
583 further research. This study only followed participants for 30 months after their graduation
584 from university. It would be valuable to follow them beyond this time point as they take on
585 more adult responsibilities such as parenthood and career progression. Although our research
586 lends support to the notion of an enduring relationship between alcohol consumption and
587 sport participation, and goes some way towards explaining it, further work is needed to
588 provide a more nuanced understanding to better inform future intervention strategies. We
589 applied drinking motives as a theoretical lens but longitudinal qualitative work utilising other
590 approaches e.g., social norms or drinking expectancies is needed.

591 As mentioned in the limitations section, this research was focused upon UK student-
592 athletes. Athletes from different countries may have different experiences of and relationships
593 with alcohol. For example, the UK has a lower legal drinking age than some other countries,
594 and this may shape athletes' drinking motives and behaviour. It would be interesting to
595 determine how well the current findings resonate with student-athletes in different countries
596 and to explore areas of similarity and difference.

597 Although research on students who have transitioned to lighter drinking practices
598 could prove valuable in informing interventions for student-athletes, there is little current
599 research available that is specifically focused on student-athletes who do not drink
600 excessively or refrain from drinking alcohol. Research into motives for lighter drinking or

601 drinking abstinence in student-athletes would provide a valuable counter point to existing
602 findings around heavy drinking in student-athletes and could further inform future
603 intervention strategies.

604 Finally, we have mentioned social anxiety as a potential influence on the drinking
605 motives and drinking behaviours of student-athletes, however, we did not explore this in
606 detail. Future research that focuses more on social anxiety and its influence on student-athlete
607 drinking could prove particularly valuable in understanding student athlete drinking
608 behaviour and in informing intervention strategies.

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