Drinking by professional Australian Football League (AFL) players: prevalence and correlates of risk

Paul M Dietze, John L Fitzgerald and Rebecca A Jenkinson

ABSTRACT

Objectives: To examine self-reported patterns of alcohol consumption and experience of alcohol-related harms among professional Australian Football League (AFL) players.

Design, setting and participants: Cross-sectional survey of player alcohol consumption and self-reported alcohol-related harms among members of all 16 professional AFL clubs. Data relating to the 2006 football year were collected between 25 July and 30 August 2006 at regular football training sessions using a self-administered structured questionnaire.

Main outcome measures: Risky/high-risk drinking for long- and short-term harm at different times of the year; Alcohol Use Disorders Identification Test (AUDIT) score.

Results: 582 AFL players completed the questionnaire (an 83% response rate). Alcohol consumption varied at different times of the year. During the playing season (approximately 22 weeks), the level of risky/high-risk consumption for long-term harm in AFL players (11/564 [2%]) was typically lower than in age-matched Australian men in the general population (15%). However, risky/high-risk consumption for long-term harm was higher in AFL players during the end-of-season period (approximately 2 weeks) (303/561 [54%]) and vacation period (6–8 weeks) (231/559 [41%]) than in age-matched Australian men. Risky/high-risk drinking for short-term harm on a monthly basis was frequent at all times of the year (eg, 395/560 [71%] in the pre-season period). The mean AUDIT score was 8.8 (95% CI, 8.4 to 9.1; range, 0 to 36). Reports of harmful effects of drinking and negative consequences, such as getting involved in a fight (physical or verbal) while drinking (146/556 [26%]), were common. Risky/high-risk consumption for short-term harm on a monthly basis was associated with a variety of player characteristics, such as usually drinking in public locations (odds ratio, 1.55 [95% CI, 1.02 to 2.35]). AUDIT score was associated with variables such as marital status, with married players scoring more than two points lower (95% CI, −3.58 to −0.58) than single players. Formal club rules on alcohol consumption had little effect on outcome measures.

Conclusions: Drinking among AFL players is intricately related to time of year. This seasonal drinking pattern requires the development of specific club and league strategies to minimise drinking-related harms to players.

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The varied impacts of alcohol consumption on the lives of professional Australian Football League (AFL) players have received significant media and political interest. However, little is known about patterns of alcohol consumption and related harms among this group of elite sportspeople, or sportspeople more generally. This is surprising, given that the pressures of sport competition and the psychological demands of intense training may lead athletes to use alcohol as a tool for stress relief.[1-3] Furthermore, sportspeople may experience significant pressure from team mates and coaches to drink together in order to increase team cohesion and bonding.[4]

There have been few studies of alcohol consumption and harm among professional sportspeople. In a 1988 study of 56 Victorian Football League players from one club, the recorded average daily intake of alcohol during the playing season was about two Australian Standard Drinks (ASD) (one ASD contains 10 g absolute alcohol).[5] However, this analysis masks significant variation, with average intake on the day of highest consumption being about 12 ASD — reflecting a pattern of "binge" drinking that is thought to be an important part of team bonding.[5] Similarly, analysis of food diaries used in a related study conducted in 1991 suggested that, while AFL players consumed virtually no alcohol during their regular training week, alcohol intake increased significantly on the evening after a game.[6]

Studies of non-professional elite sportspeople (typically in university or United States college athlete settings) generally show that they have higher rates of hazardous drinking than non-sportspeople and non-elite sportspeople.[7,8] These differences are primarily related to heavy episodic or binge drinking rates, but are also apparent from measures of average weekly consumption.[7,9] Rates of heavy episodic drinking have been shown to vary according to the type of sport engaged in and the time of year, with the highest rates occurring during out-of-competition times.[7]

We were commissioned by the AFL and AFL Players Association (AFLPA) to conduct a survey of professional AFL footballers, because it is recognised that excessive alcohol consumption is an issue for AFL footballers and for young people in the general population, and an area where further action needs to be taken to educate players about the importance of responsible drinking strategies. The key aims of the survey were to develop a greater understanding of alcohol use and self-reported experience of alcohol-related harms by AFL footballers so that the results could assist the AFL in developing an effective approach to responsible alcohol policy and governance. We report on key patterns of consumption across the year in comparison with available Australian normative data, along with correlates of one key risky consumption pattern and one measure of hazardous drinking.

METHODS

Subjects and data collection

We developed a structured questionnaire for self-administration by professional AFL players, with main outcome measures derived from a combination of validated instruments or measures widely used in alcohol research (eg, graduated quantity–frequency[10]).

The survey was piloted among a small group of players, ex-players and staff in the AFLPA and then administered to members of all 16 clubs in the national competition. The AFLPA assisted with data collection by facilitating access to clubs and players. A university researcher and a member of the

1 NHMRC drinking-risk categories for men according to quantity and frequency of Australian Standard Drinks (ASD)* consumed[12]

Type of harm†	Risky alcohol use	High-risk alcohol use
Short-term	7–10 ASD on any 1 day	⩾ 11 ASD on any 1 day
Long-term		
On an average day	5–6 ASD per day	⩾ 7 ASD per day
Overall weekly level	29–42 ASD per week	⩾ 43 ASD per week

NHMRC = National Health and Medical Research Council. * One ASD contains 10 g absolute alcohol. † Short-term harms include those related to heavy episodic drinking (eg, traffic accidents and injury). Long-term harms include those related to long-term heavy alcohol consumption (eg, alcoholic liver cirrhosis). "Risky/high-risk drinking for short-term harm on a monthly basis" means having at least seven ASD on any one day, at least once a month. ◆

AFLPA were in attendance during each of the data collection sessions, which were conducted in a secure room before or after a regular training session at each club. Club staff were asked to vacate the room while data collection was in progress. The questionnaire was anonymous and took 20–30 minutes to complete. Data were collected between 25 July and 30 August 2006.

Measures

While the questionnaire canvassed four conceptual arenas, only results relating to drinking behaviour and alcohol-related harms and elements of the risk environment are reported here.

Periods of the year

In order to capture changes in consumption patterns at different times of year, the year was divided into four periods:

- *Pre-season:* the period lasting typically 2 months after players return to training after the vacation period;
- *Home-and-away:* the playing season (22 weeks for all clubs, along with finals played by finalists);
- *End-of-season:* a 2-week period following players' last game of the season; and
- *Vacation:* typically a 6–8-week break after end-of-season.

These periods were clearly explained to players before they completed the survey.

Levels of alcohol consumption

Alcohol consumption was measured using a quantity–frequency approach, in which players were asked questions about the frequency (eg, 5–6 days per week) with which they drank specified amounts of alcohol (eg, 3–4 standard drinks) during each of the four periods of the year. Such measures are widely used in surveys of alcohol consumption.[10] Respondents also completed the Alcohol Use Disorders Identification Test (AUDIT),[11] a tool for detecting hazardous drinking. The key dependent measures selected from these outcomes included:

- Drinking status, according to National Health and Medical Research Council (NHMRC) risk categories[12] ("low-risk", "risky" and "high-risk" for harm in both the short term and long term) for each of the four periods of the year (see Box 1 for definitions); and
- AUDIT score.

The maximum possible AUDIT score is 40, with higher scores indicating higher levels of hazardous drinking. While suitable AUDIT score cut-off points for identifying alcohol problems vary between populations, a cut-off point of between 7 and 8 is typically used to differentiate people without problems (0–7) from those with potential problems (8–40).[13]

Player characteristics, harm and negative consequences, and drinking contexts

Relevant independent variables collected and used in our analysis included:

- Player characteristics: age, number of games played, leadership role (ie, whether in the club leadership group), marital status, club, and interests outside football (work and/or study commitments versus full-time football);
- Player reports of adverse effects of drinking in the previous 12 months: harmful effects or negative experiences as a result of drinking (based on questions from the GENACIS [Gender, Alcohol, and Culture: an International Study][14] questionnaire); and
- Contexts of drinking: usual drinking location (public or private settings), drink preference (beer or wine/spirits), personal alcohol-industry sponsorship, and receipt of alcohol promotions in the previous 12 months (eg, free drinks, drink cards [courtesy cards issued by licensed premises allowing a specified number of drinks to be obtained]).

Statistical analyses

Descriptive statistics were used to examine consumption patterns across different periods of the year.

Regression analyses were used to identify correlates of two key drinking outcome variables: risky/high-risk drinking for short-term harm on a monthly basis during the home-and-away season (binary variable [yes/no]), and AUDIT score (continuous variable). A two-stage analytical strategy was used. First, the relationships between the variables listed in Box 3 and Box 4 and monthly risky/high-risk drinking during the home-and-away season were examined in a multivariate analysis with other variables from the same conceptual grouping (ie, player characteristics, harmful effects/negative consequences, drinking contexts/preferences). Variables that were significantly associated with drinking outcomes in these preliminary logistic models were then entered into a final model that is reported below. A similar approach was undertaken for AUDIT scores, but the harmful effects/negative consequences correlates were not included in the linear regression modelling because these are conceptually related to the AUDIT. All analyses were undertaken using SPSS, version 14 (SPSS Inc, Chicago, Ill, USA) or Stata/SE, version 9 (StataCorp, College Station, Tex, USA).

Ethics approval

Our study was approved by the University of Melbourne's Human Research Ethics Committee with the proviso that player and club anonymity be maintained throughout the research process.

RESULTS

A total of 582 professional AFL players completed the questionnaire. Based on the assumption that a full list of 44 players from each of the 16 clubs was available to participate, this represents a response rate of 582/704 (83%). This is likely to be conservative, as some players were absent from the training sessions during which questionnaires were completed (eg, through illness or injury). Anonymity requirements precluded the identification of missing players.

Levels of alcohol consumption

Long-term risk

There was marked variation in reported drinking patterns across different times of the year (Box 2). While about 90% of players reported drinking at low long-term risk levels during the pre-season and home-and-away periods, a significant minority of players reported drinking at levels that place them at high risk of long-term harm during the end-of-season (37%) and vacation (26%) periods, according to current NHMRC definitions.[12] In comparison, only 6% of men in a similar age group (20–29 years) in the general population report drinking at these levels.[15] (It should be noted that population surveys of drinking in equivalently aged males do not take into account different times of the year, such as university break periods, Christmas holidays, and other periods of the year commonly associated with increased levels of consumption.)

Short-term risk

A very low proportion of players reported drinking at risky/high-risk levels for short-term harm on a weekly basis (ie, more than six ASD on any 1 day in the week) during the pre-season (9%) and home-and-away (3%) periods. During these periods, risky drinking on a weekly basis was less prevalent among the AFL players than among 20–29-year-old men in the general population (17%).[15] However, the picture changed dramatically during the end-of-season and vacation periods, when 57% and 48% of AFL players, respectively, reported drinking at risky levels for short-term harm.

There was a different pattern for risky/high-risk drinking levels for short-term harm on a monthly basis. Regardless of the period of the year, a higher proportion of the players (51%–88%) reported drinking at risky/high-risk levels at least once a month than age-matched (20–29-year-old) Australian men (44%).[14]

Player characteristics, experiences of harm and negative consequences, and drinking contexts

Demographic characteristics of players, their self-reported experiences of drinking-related harm and negative consequences, and key drinking context and/or drinking preference variables are summarised in Box 3 and Box 4. Most players were aged under 25 years (66%) and unmarried (88%), had work and/or study commitments outside football (61%), and had played fewer than 50 games (56%). While a substantial proportion of the players reported recently experiencing harmful effects of their drinking on a variety of life domains (7%–34%), fewer players (1%–14%) reported experiencing direct negative consequences, except for involvement in fights while drinking (26%). (Note that "fight" may have been interpreted as any argument or disagreement — verbal or physical.)

A high proportion of the players had received some form of alcohol promotion (eg, free drinks, drink cards) in the previous 12 months (up to 53% for some promotions), and most players reported that their club had no formal rules about drinking.

Correlates of risky/high-risk drinking for short-term harm

We examined associations between the key plausible correlates of alcohol consumption (detailed in Box 3 and Box 4) and monthly risky/high-risk drinking for short-term harm during the home-and-away season.

The final model for risky/high-risk drinking for short-term harm during the home-and-away season showed that players who reported usually drinking in public during this period were 1.55 (95% CI, 1.02 to 2.35) times more likely to report monthly risky drinking than those who reported usually drinking in private. Similarly, players who reported receiving a drink card in the previous 12 months were 1.68 (95% CI, 1.11 to 2.55) times more likely to report monthly risky drinking than those who did not report receiving a drink card. Players who reported experiencing problems with housework or chores were 1.80 (95% CI, 1.17 to 2.76) times more likely to report monthly risky drinking than those who did not. The

2 Number (%) of professional AFL players in various drinking-risk categories, by risk type and period of the playing year, compared with men in the general Australian population*

		Risk type†				
		Risk for long-term harm			Risky or high-risk for short-term harm	
Group	Abstainers	Low-risk	Risky	High-risk	Monthly	Weekly
AFL players						
Pre-season ($n = 560$)	19 (3%)	497 (89%)	26 (5%)	14 (3%)	395 (71%)	53 (9%)
Home-and-away ($n = 564$)	45 (8%)	508 (90%)	9 (2%)	< 5 (0)	286 (51%)	16 (3%)
End-of-season ($n = 561$)	17 (3%)	241 (43%)	97 (17%)	206 (37%)	495 (88%)	321 (57%)
Vacation ($n = 559$)	19 (3%)	309 (55%)	88 (16%)	143 (26%)	444 (79%)	268 (48%)
General population‡[14]	8%	78%	9%	6%	44%	17%

AFL = Australian Football League. * Based on self-reported patterns of drinking. † Risk categories as defined by the National Health and Medical Research Council.[12] ‡ Australian men aged 20–29 years in the general population.[14] ◆

3 Player characteristics

Player characteristics	Number (% of sample)
Age (years)	
< 20	124/582 (21%)
20–24	263/582 (45%)
25–29	139/582 (24%)
⩾ 30	56/582 (10%)
Number of games played	
< 50	315/565 (56%)
50–150	159/565 (28%)
⩾ 151	91/565 (16%)
Marital status	
Single	199/573 (35%)
Has girlfriend	225/573 (39%)
In de-facto relationship	74/573 (13%)
Married	66/573 (12%)
Other	9/573 (2%)
Leadership	
In club leadership group	85/526 (16%)
Other	441/526 (84%)
Outside interests	
Full-time football	222/569 (39%)
Other interests*	347/569 (61%)

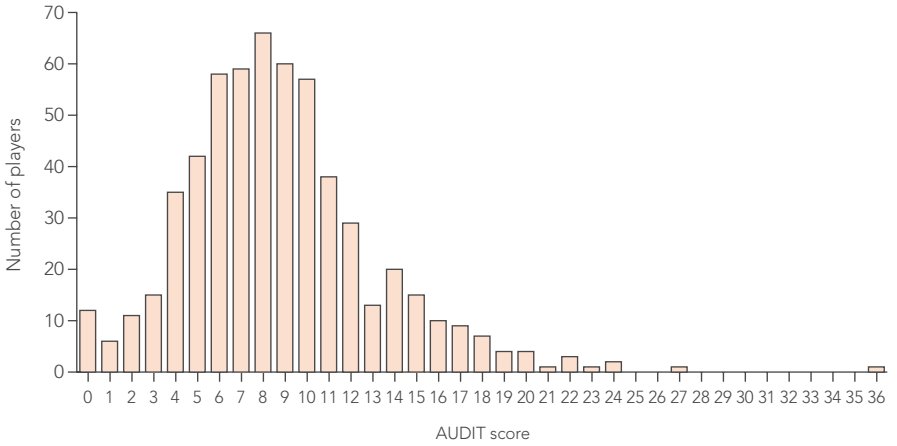
* Work and/or study commitments. ◆

4 Harmful effects of drinking, negative consequences of drinking, and drinking contexts/preferences

	"Yes"* (% of sample)
Areas in which drinking has had a harmful effect in past year	
Work, study opportunities	75/556 (13%)
Housework or chores	187/556 (34%)
Marriage/relationships	114/555 (21%)
Family relationships	41/554 (7%)
Friendships or social life	75/554 (14%)
Physical health	182/555 (33%)
Finances	176/553 (32%)
Negative consequences of drinking in past year	
Trouble with law about driving	23/555 (4%)
Illness preventing work	31/555 (6%)
Lost/nearly lost job	7/554 (1%)
Annoyed by person criticising drinking	75/555 (14%)
Left home	26/555 (5%)
Lost friendship	13/556 (2%)
Fight while drinking†	146/556 (26%)
Drinking contexts/preferences	
Personal alcohol-industry sponsorship	103/572 (18%)
Usually drinks in public	183/539 (34%)
Alcohol promotion received:	
Free venue entry	289/582 (50%)
Drink card	306/582 (53%)
Free drinks	157/582 (27%)
Discounted alcohol	78/582 (13%)
Club alcohol rules	
Formal policy	40/567 (7%)
Informal policy	204/567 (36%)
Individual choice	323/567 (57%)
Drink preference	
Beer	263/535 (49%)
Other	272/539 (51%)

* Number of players responding "yes". † A "fight" may be understood as any argument or disagreement — verbal or physical — and it is not clear how players interpreted this term. ◆

5 Distribution of AUDIT scores recorded for the players ($n = 579$)



AUDIT = Alcohol Use Disorders Identification Test. ◆

strongest relationship was found for those who reported having been annoyed by another person's criticism of their drinking during the previous 12 months: these players were 4.7 (95% CI, 2.28 to 9.57) times more likely to report monthly risky drinking than those who did not report being annoyed by such criticism.

Correlates of hazardous drinking

The mean AUDIT score for the respondents to our survey was 8.77 (95% CI, 8.41 to 9.13; range, 0–36). The distribution of scores (Box 5) shows that 59% of players (340/579) had an AUDIT score of greater than 7.

There were significant associations between AUDIT scores and both player characteristics and drinking contexts/preferences.

The mean AUDIT score of married players (6.11) was 2.08 points lower (95% CI, −3.58 to −0.58) than those who were single (8.19).

Players with interests other than full-time football had a mean AUDIT score of 7.04, which was 1.05 points lower (95% CI, −1.89 to −0.41) than those who did not (8.19). In contrast, the mean AUDIT score of players who reported receiving free drinks (9.31) was 1.12 points higher (95% CI, 0.31 to 1.92) than the mean score of those who did not (8.19).

There was also a significant association between mean AUDIT score and the club a player belonged to. The mean AUDIT score of players from Club 1 (10.98) was 2.79 points higher (95% CI, 0.91 to 4.66) than players from Club 16 (8.19). The mean AUDIT scores of players from Club 6 (10.72) and Club 7 (10.72) were some 2.53 points higher (95% CIs, 0.52 to 4.54 [Club 6] and 0.49 to 4.56 [Club 7]) than that of Club 16.

DISCUSSION

To our knowledge, our findings represent the first published comprehensive examination of alcohol consumption and experience of alcohol-related harms among elite professional sportspeople. The overall picture of consumption is one of relative restraint during the pre-season and home-and-away periods, coupled with relatively high levels of consumption outside these periods. While there are no comparable data available on the seasonality of consumption among similar age groups of men in the general population, it is likely that the seasonal patterns in AFL players are connected directly to phases of the playing year in a way that is different from drinking patterns in the rest of the Australian population, which probably increase during different holiday and vacation periods across the year. Overall, the pattern of self-reported monthly risky/high-risk drinking for short-term harm during the home-and-away season is important, as it may be a marker for players who are unable to moderate their alcohol use during the whole of this important period in their work and playing lives.

We were surprised by some of our findings. We expected that player characteristics such as increased age or experience or being part of the club leadership group would be associated with reduced rates of risky drinking for short-term harm during the home-and-away season. Instead, the only association we found was that married players were less likely to engage in hazardous drinking. The finding of moderated drinking patterns for married participants is consistent with research findings in other populations.[16] However, even this association with marital status did not hold for the measure of

monthly risky drinking for short-term harm in the home-and-away season. This may suggest that the cultural/contextual norms of risky drinking during the playing season (eg, to celebrate a win) serve to override any moderating influences provided by marriage.

Players' experiences of some alcohol-related harms were associated with risky drinking patterns. It is perhaps not surprising that those who reported experiencing alcohol-related harms reported risky drinking patterns. These harms variables serve as useful markers of problematic drinking that could be used to target prevention efforts.

The drinking context variables highlight the cultural influence of individual clubs on drinking behaviours, with membership of specific clubs influencing both outcome measures to some extent. This suggests that the good work being done by some clubs in encouraging responsible consumption needs to be identified and replicated in other clubs. This good work should extend beyond the mere establishment of formal club rules on drinking, as our study showed that club rules had little effect on drinking outcomes.

It was also notable that drinking in public by this group of high-profile individuals was associated with a higher level of risky drinking. The high profile of professional AFL players in society means that in these settings players are often targeted for alcohol promotions. We found that such promotions were also independently associated with risky drinking. Player education by clubs needs to focus on how to manage these promotions as well as the scrutiny that having such a high profile affords.

Our study is the first published study of its kind. The support of the AFL and AFLPA, along with assurances of confidentiality, meant that we were able to achieve an excellent response rate across all clubs in Australia. Nevertheless, the data were collected using self-report, which may underestimate actual consumption. Further, the estimates of long-term risk among players need to be interpreted with care, as they have been applied to short periods (eg, end-of-season), and the level of risk only becomes meaningful if players consume at the specified levels for long periods. Finally, although we employed instruments used in other research, the meaning of some questions is open to interpretation. For example, "fight" is a term used to define any argument or disagreement and can be verbal or physical, and it is not clear how players interpreted this term.

A key recommendation in the National Alcohol Strategy[17] is to change harmful drinking cultures. This study, commissioned by the AFL and AFLPA, provides a unique insight into AFL drinking culture. Our findings suggest that while rates of both weekly risky drinking for short-term harm and risky drinking for long-term harm were lower during the playing season than rates found in the Australian male population, rates of monthly risky drinking for short-term harm in all parts of the year were higher among professional AFL players than men in the Australian population as a whole. Additionally, risky drinking for short-term harm during non-playing periods was extremely high. A key question arising from our research is to what extent the overall seasonal pattern of consumption is embedded in the cultural norms of AFL football. It is also unclear whether players retire from professional AFL football with an embedded drinking pattern that places them at risk of alcohol-related harm. The idiosyncratic seasonal alcohol consumption pattern observed in our study highlights the need for club and league strategies to minimise the harm to players.

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COMPETING INTERESTS

None identified.

AUTHOR DETAILS

Paul M Dietze, PhD, Associate Professor[1]
John L Fitzgerald, PhD, VicHealth Senior Research Fellow[2]
Rebecca A Jenkinson, MEpid, GradDipEpiBiostat, Research Officer[1]
1 Centre for Population Health, Burnet Institute, Melbourne, VIC.
2 Centre for Health and Society, University of Melbourne, Melbourne, VIC.
Correspondence: pauld@burnet.edu.au

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