More Australian research needed into alcohol and energy drinks

Amy Pennay, BA(Hons)
Dan I Lubman, BSc(Hons), MB ChB, PhD, FRANZCP, FAcHAM

To the Editor: We congratulate Jones et al. (1) on their work published in the May issue of this journal, which explored the benefits and harms associated with drinking alcohol in combination with energy drinks (AED) from the perspective of university students in New South Wales. Despite a growing body of international research documenting increasing rates of AED use among young people (2-5), Australian research into this phenomenon is lacking.

To our knowledge, the Jones et al. (1) article is one of only two Australian empirical studies published on AEDs. Drawing on focus groups with 21 students, Jones et al. reported a range of benefits associated with AED use, including increased energy, intoxication, sociability, portability, symbolic attractiveness and taste; and a range of harms associated with the combination, including difficulty sleeping, worse hangovers, aggression, violence, heart palpitations, blackouts, vomiting and twitching. However, the benefits were perceived to outweigh the harms of AEDs among these university students.

The second Australian study, by Peacock et al. (6), reported on the results of a web-based community survey. They found that 42% (403 of 963) of Australian adults had consumed an AED in the past six months. During sessions of AED use, participants were less likely to experience sedation-related physiological and psychological outcomes (such as slurred speech, impaired motor coordination, exhaustion and sadness), but were more likely to report experiencing stimulant-related physiological and psychological outcomes (such as heart palpitations, sleep difficulties, agitation and irritability). These findings are consistent with the benefits and harms reported in the Jones et al. (1) study. Young people are seemingly using AEDs to increase energy and alertness and reduce alcohol-related drowsiness, but as a result experience harms related to over-stimulation. Surprisingly, Peacock et al. found that participants reported consuming greater quantities of alcohol during AED sessions, but were less likely to report engaging in risky behaviour when consuming AEDs compared with when they drank alcohol alone. The limitations of self-report in this context (given the potential for recall bias, particularly after heavy alcohol consumption) must be considered, and clearly
there is a need for objective measurements of engagement in risky behaviour among AED users.

While these studies provide some useful information about the way that some young Australians describe consuming AEDs, as well as self-reported intended and unintended consequences of AED use, there is still a much broader array of research needed. In particular, there are no population-based prevalence estimates informing us how widespread AED use is within Australia. Internationally, research is limited to college-based prevalence estimates and clinical trials. Three studies in the US, Canada and Italy, have examined rates of AED use, finding that between one quarter (3, 5) and one half (4) of university students consumed an AED in the past month. But this tells us little about the population beyond university students. The best evidence provided about AED use comes from a US portal study, in which young people were interviewed and breathalysed leaving licensed venues between 10pm and 3am. This study found that participants who had consumed AEDs were 3.3 times more likely to have a blood alcohol concentration of 0.08 or more compared with those drinking alcohol alone and were more likely to exit the venue later in the evening, drink for a longer period of time and consume more drinks (7). Such studies highlight the need for more objective assessments of the impact of AED use on behaviour, including both intensive observational research in settings where AEDs are being consumed and targeted laboratory investigations.

The limited experimental trials that have been conducted to date show that combining energy drinks or caffeine with alcohol reduces subjective perceptions of alcohol-induced impairment, but does not reduce objective measurements of impairment, including motor coordination, reaction time or the ability to perform psychological tasks (8-10). This is particularly concerning because becoming desensitised to the effects of alcohol, with alcohol impairment remaining the same, may increase the potential for alcohol-related harm, including alcohol poisoning, risk-taking and injury. However to date, no experimental research has investigated the dose-response relationship of AED, including at what number of drinks (or blood alcohol content) and at what level of energy drink use, harm (including physical, psychological and cognitive consequences) rises appreciably.

In short, what we do know is that energy drinks seemingly lead to increased consumption of alcohol, are associated with a range of benefits including energy, wakefulness and taste, and are associated with a range of harms, such as heart palpitations, difficulty sleeping, irritability
and more severe hangovers. We also know that perceptions of improved physiological and psychological functioning are not matched by objective measures.

What we don’t know is how widespread and popular AED use is in Australia, among the general population, as well as among population sub-groups. We do not have any information on the amounts, patterns and frequencies of AED use across the community or among sub-populations, nor the range of social and cultural contexts in which AEDs are used. We do not have any information from groups other than drinkers themselves, such as bar staff, emergency services staff and health workers. There is no Australian research exploring the link between AEDs and violence, lost productivity, injury and hospital attendance, nor is there any research exploring the dose-response relationship of AEDs, including at what blood alcohol content and what number of energy drinks the potential for harm rises significantly. Current Australian guidelines recommend no more than two energy drinks be consumed daily (11), with this information clearly stated on energy drink containers. However, there is currently no information available as to what might constitute unsafe levels of AED consumption.

What is needed is more Australian research on AED use. Only through further research can recommendations be made about how to reduce risks associated with AEDs. We need more local evidence about AED practices and harms so that we can begin responding to the needs of consumers, regulators and the community, and so that relevant prevention, harm reduction and policy approaches can be developed and implemented.

References

6. Peacock A, Bruno R, Martin F. The Subjective Physiological, Psychological, and Behavioral Risk-Taking Consequences of Alcohol and Energy Drink Co-Ingestion.


