



How does climate change impact use of alcohol and other drugs? A scoping review of peer reviewed literature

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I acknowledge the Traditional Owners and Custodians of the Country on which this work was written. The Wurundjeri people of the Kulin Nation have cared for this land for countless generations. Their sovereignty was never ceded.



Aim











This paper describes a scoping review which aims to identify impacts of climate change for people who use AoD that are described in peer reviewed literature

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Research Paper

How does climate change impact people who use alcohol and other drugs? A scoping review of peer reviewed literature


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Highlights

- Impacts of climate change for people who use substances have not been classified.
- Studies suggest increased substance use is likely, but will not occur consistently.
- Other effects include service disruption, unplanned withdrawal and heat vulnerability.

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Public consultation

- Scoping reviews should entail consultation and public engagement (Arksey & O'Malley, 2005; Peters et al., 2022).
- Eleanor Costello represented the Alcohol and Drug Foundation (ADF) on our study team. The ADF funds over 270 [Local Drug Action Teams](#) across Australia, which increasingly report concerns about effects of a changing climate on substance use in their communities.
- ADF consulted leaders of the Teams to identify key impacts of climate change for the communities they work in. These discussions inform the structuring of categories identified across included studies.

Identifying climate change- associated events

We were interested in understanding impacts the following kinds of climate change-associated events:

- gradual changes to temperatures, seasonality and rainfall;
- and from extreme events including heat, fires, heavy rain and floods, hurricanes, and typhoons (Beggs et al., 2021; IPCC, 2023).

Identifying climate change time period

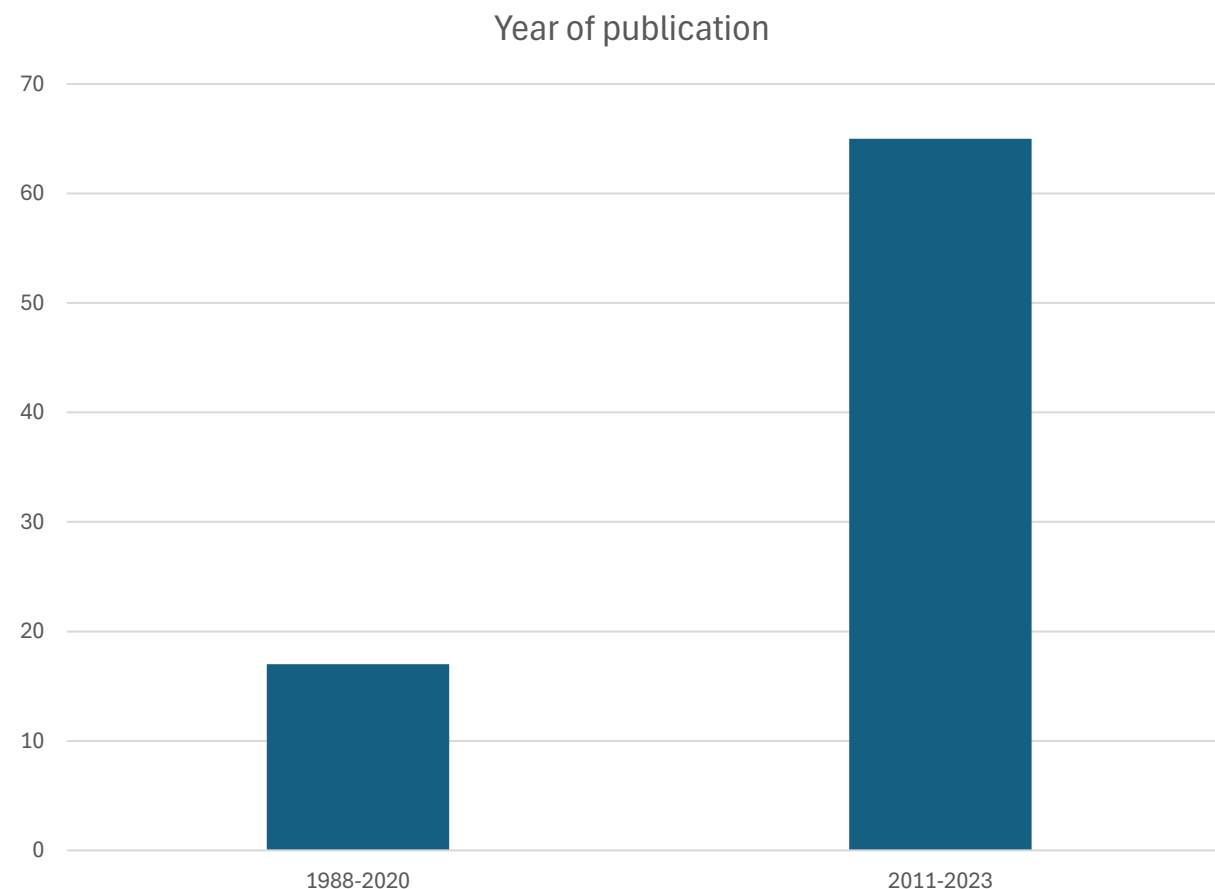


- We included studies published from 1988 onwards after the signing of the Kyoto Protocol in December 1997 (search conducted November 2023)
- Kyoto Protocol signing signified widespread global consensus that climatic changes were anthropogenic (United Nations, 1998), making it likely that the impacts on AoD users identified in the study occurred under an already changed climate.

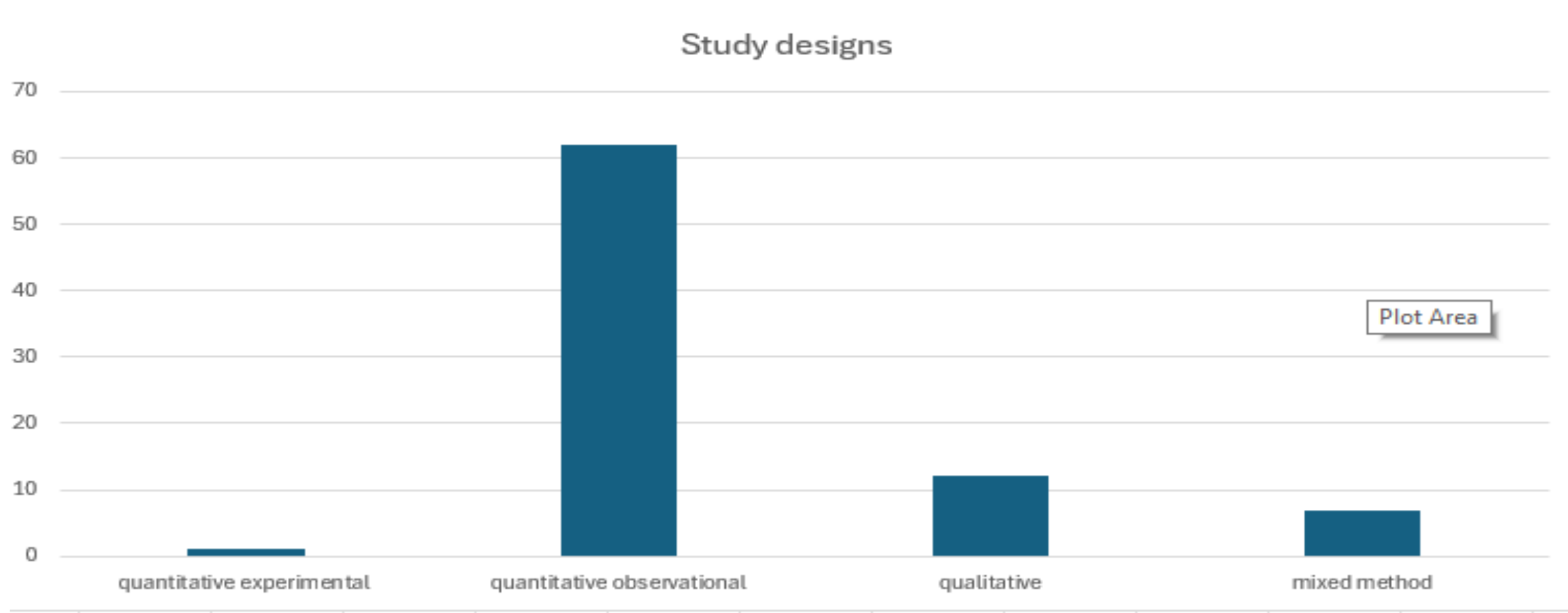
Results: # of studies related to climate events and their impacts on people who use AoD

	Increased AoD use	Decreased substance use, mixed or no effect on substance use	Disrupted service access	Vulnerability to extreme heat	Changes to drug markets	Unplanned withdrawal	Compounding mental health problems
Hurricanes/cyclones/tornado	31	14	12		5	6	1
Fire	7	3			1		
Floods	4						
Hot weather	2			10			1
Longer-term environmental	3	0	1				1
Tsunami	1						
Drought		1					
Effects total	48	18	13	10	6	6	3

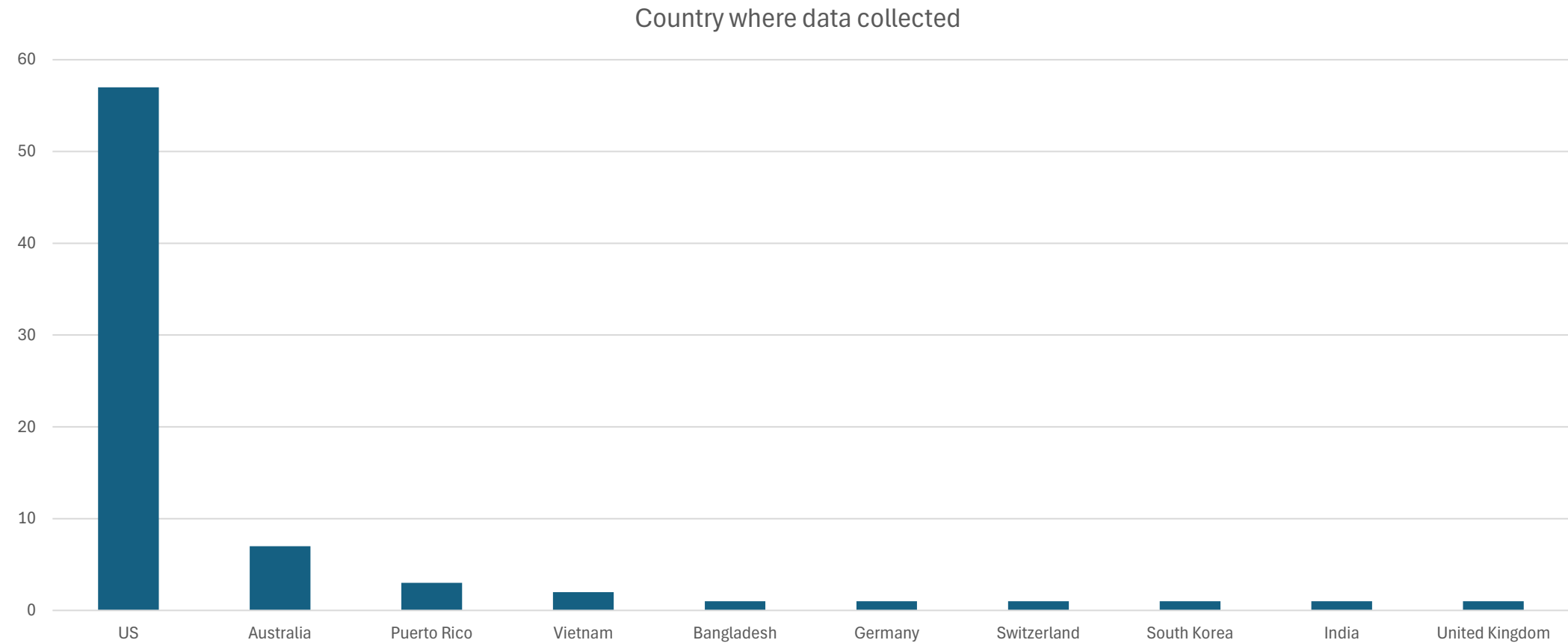
Year of publication of included studies



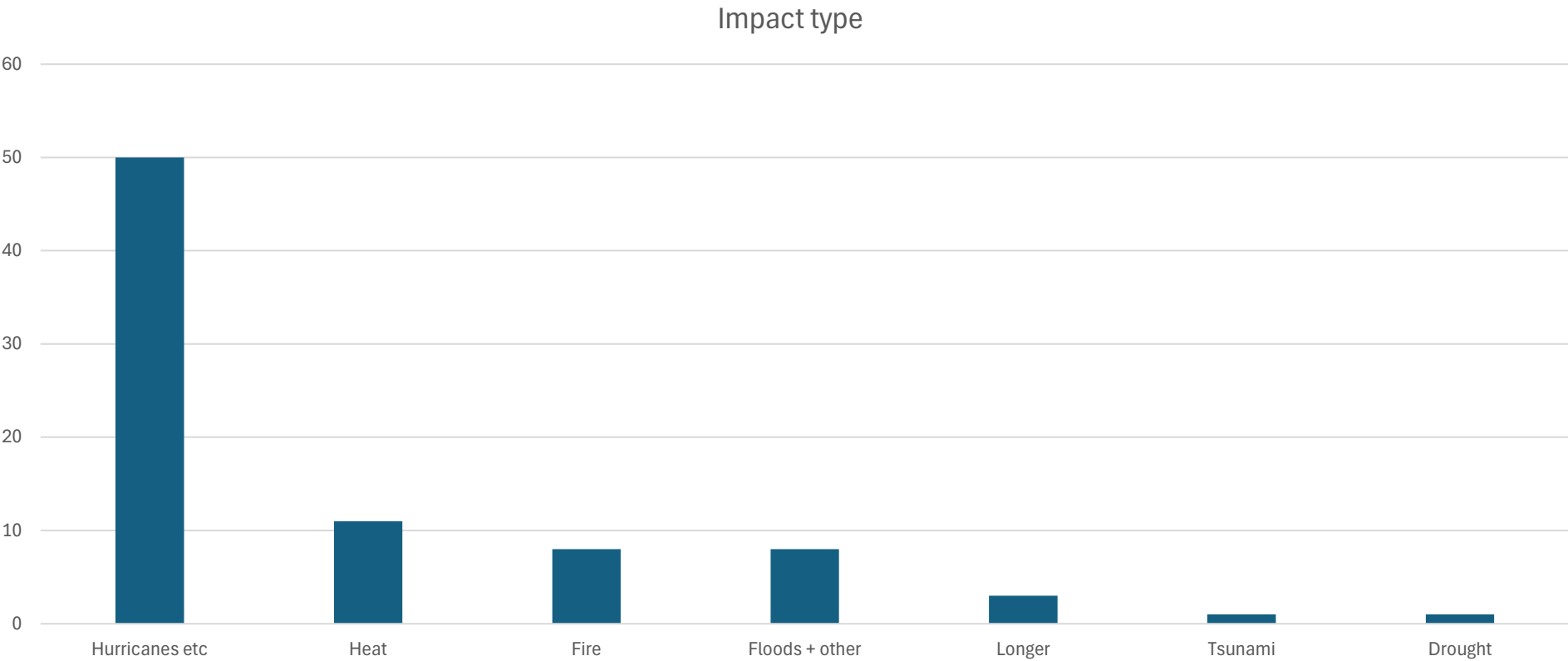
Study designs



Country where data collected



Type of event impacting AoD use



Impacts: increased AoD use

- 48 papers identified climate change-related increases in substance use.
- By far the largest group of these (31) reported increases after Hurricanes Sandy and Katrina in the USA.
- Fires and floods also lead to increased substance use.
- AoD services also recorded increased demand after climate-related events, likely reflecting increased problematic use. A paper reporting on the 2016 Baton Rouge area flood in Louisiana, USA found a 70% increase in Medicaid funded substance-abuse and addiction disorder visits (Phillippi et al., 2019).
- It is unusual for studies to report on AoD impacts ensuing from longer-term climate events, although some research exists (ie Pearce et al., 2010).
- Relatively little evidence on prevalence of increased substance use disorder.

Impacts: increased AoD use

- Longitudinal studies suggest that increases in AoD use that occur after climate-associated events may reduce over time. Shin et al. (2010) observed in Korea that patterns of AoD use were higher for one to one and a half years after flooding and subsequent landslide, and then declined.
- Various risk factors are associated with increased AoD use after exposure to climate-associated events:
 - **extent of exposure.** After Hurricane Ike, teenagers who did not evacuate were more likely to report heavy drinking, marijuana, or cocaine use than those who did (Temple et al., 2011).
 - **Pre-existing substance use.** AoD use prevalence predicts substance use problems after climate-associated events for both adults and adolescents (e.g. Ritchie et al., 2021).
 - **Trauma** Puerto Rican hurricane survivors who moved to the USA and who internalised their trauma significantly more likely to be problem drinkers than those who did not (Schwartz et al., 2022).

Impacts: decreased AoD use, mixed or no effect

- Declines in AoD use are also observed in the literature (18 studies), particularly in the immediate aftermath of an event, due to disrupted supply or price gouging
- Some people used the opportunity of displacement after Hurricane Katrina to cease drug use (Cepeda et al., 2010; Dunlap et al., 2012) reporting motivation to do so after coping with the event and relocating (Tiburcio et al., 2009).
- Many studies that identified increased use of one substance in the section above observed that this did not apply to other substances. Pesko (2018) found evidence of increases in some forms of substance use post-storm surges, but not binge drinking.
- Some studies find relatively little impact of climate-related events on substance use (Maclean et al., 2016).

Impacts: disrupted service access

- Thirteen studies address reductions in availability of services, mostly concerning unavailability of opioid treatment programs such as methadone provision or needle and syringe programs after disasters.
- This leads to harms such as needle sharing (when clean kits are unavailable), early discharge when hospitals are stretched etc

Impacts: vulnerability to extreme heat

- In periods of extreme heat people who use alcohol, opioids, and stimulants are at greater risk of adverse consequences than others – with higher rates of emergency department visits, heat-related illness, and overdose including symptoms such as loss of consciousness, hypotension, and impaired respiration (Parks et al., 2023; Ryus & Bernstein, 2022; Yoo et al., 2021).
- Concerningly, in one study people who use AoD were reportedly reluctant to access heat shelters due to worry that they would not be welcomed (Price et al., 2018).

Impacts: changes to drug markets

- People sometimes initiated new drug use after their usual substances or opiate substitution treatment became unavailable (i.e. Elliot et al., 2017).
- Drug markets may become more harmful after disasters. For example, after Hurricane Katrina, dealers offered cheaper prices and purer heroin to reestablish markets when people returned to the city, increasing risk of overdose (Bennett et al., 2011).

Impacts: unplanned withdrawal

- Reduced supply of drugs after Hurricane Sandy led to nearly 60% of injecting drug users in NYC experiencing withdrawal in the week after Hurricane Sandy and 70% of those on opioid maintenance therapy missing dosing (Pouget et al., 2015).
- One participant describes enduring withdrawal from opiate treatment after Hurricane Sandy while being evacuated from his submerged home by boat (Matusow et al., 2018).

Impacts: compounding mental health problems

- Most studies operate from an assumption that climate-associated events impact on mental health, subsequently increasing rates of AoD use, some of which are reported above.
- A much smaller number of studies suggest that increased AoD use after climate-related events in turn exacerbates mental health problems.
- In Vietnam, Dang (2022) found that people who used psychoactive substances were at higher risk of mental health disorder hospitalisation after heatwaves.

What is missing?: studies of effects of longer-term environmental changes

	Increased AoD use	Decreased substance use, mixed or no effect on substance use	Disrupted service access	Vulnerability to extreme heat	Changes to drug markets	Unplanned withdrawal	Compounding mental health problems
Hurricanes/cyclones/tornado	31	14	12		5	6	1
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Hot weather	2			10			1
Longer-term environmental	3	0	1				1
Tsunami	1						
Drought		1					
Effects total	48	18	13	10	6	6	3

What is missing?: studies of impacts from longer-term changes

- But we know these effects are occurring, ie greater amphetamine use in Indonesian fisher folk affected by reduced fish supply (Fauziah et al., 2023).
- We know that climate anxiety is widespread, especially among young people, but little of how that does or doesn't impact substance use.
- Over time some drugs will become harder to grow, leading to increase supply of synthetic drugs (Winston, 2022)
- And wine ???



What is missing?: studies from low-and middle-income (LAMI) countries

- 69% of studies included in our review report on data from the US and only 10% are from LAMI.

Conclusion

- It is crucial to document effects of changing climate on people who use AoD so that policy and services can meet current and future needs.
- We call for research to remedy gaps identified here.
- Urgent political action to reduce our emissions (not expanding new coal mines) will curb the intensifying effects of climate change for people who use AoD in the future.

Future research on how agencies can support people who use AoD to manage in a changing climate

We are conducting another study with the ADF, investigating impacts on people who are involved in Local Drug Action Teams across Australia

We are looking for future project partners. Please let me know if you or your agency might be interested in working with our team on a future study.



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