Review

Making sense of drug use and dependence—A scoping review of mass media interventions intended to reduce stigma towards people who use drugs

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ARTICLE INFO

ABSTRACT

Background: People who use drugs face entrenched stigma, which fosters shame, restricts service access, and exacerbates inequalities. The use of mass media in anti-stigma interventions offers an opportunity to challenge stigmatising attitudes at scale. There are, however, inconsistencies in messaging approaches used in mass media anti-stigma interventions, and how authors conceptualise and measure 'stigma'.
Methods: This scoping review maps literature on the development and/or evaluation of mass media interventions intended to reduce stigma towards people who use drugs. We systematically searched seven databases for reports about: (i) people who use drugs, (ii) stigma, (iii) mass media. We charted data about intervention (i) subjects and recipients, (ii) format, (iii) authors, (iv) content; and (v) conceptualisation and measurement of stigma. We narratively synthesised findings with qualitative content analyses.
Results: From 14,256 records, we included 49 reports about 35 interventions. 25/35 were from the last five years and 19/35 were from the United States. Intended recipients included the public and/or specified sub-populations, often including healthcare workers. Most interventions were intended to reduce stigma towards people with patterns of drug use perceived to be problematic, as opposed to people who use drugs in general. Interventions ranged from single pieces of media to complex multi-format campaigns. People who use(d) drugs contributed to 22/35 interventions. Professionals working in medical disciplines co-authored 29/35 interventions. Intervention content often had a medical focus, describing dependence as a 'disease' or medical issue, and emphasised the benefits of recovery. Other interventions, however, criticised medical framings. In some interventions drug use and people who use drugs were described in markedly negative terms. 'Stigma' was often under-theorised, and measurement approaches were inconsistent, with 42 instruments used to measure phenomena associated with stigma across 19 quantitative evaluations.
Conclusion: We found inconsistencies in approaches to reduce and measure stigma, potentially reflecting different motivations for intervention development. The primary motivation of many interventions was seemingly to promote drug service engagement and recovery.

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Box 1
Stigma processes and concepts.

Key stigma processes and concepts
Link and Phelan conceptualise stigma as the co-occurrence of labelling, stereotyping, separation, status loss, and discrimination, in the context of a power differential (Link & Phelan, 2001). These components are described below, alongside other key concepts in the stigma literature.

Labelling	Labelling occurs when a powerful majority deigns certain differences and people who exhibit those differences to be deviant (Becker, 1963). Link and Phelan use the term 'label' rather than 'attribute' or 'mark' to emphasise that this is a social process, requiring that the status is affixed, rather than arising from the individual exhibiting the behaviour (Link & Phelan, 2001).
Stereotyping	Stereotyping occurs when people with a labelled difference are associated with negative characteristics (Link & Phelan, 2001). This means that members of a stereotyped group are assumed to be the same, obfuscating variation, and leading to inaccurate assumptions about individuals (Singer & Page, 2014).
Separation	Separation occurs when a stigmatised group is considered by the majority to be distinct, delineating an 'us' and a 'them' (Link & Phelan, 2001). The 'in-group' may exhibit certain conditions or characteristics without being defined by them. The 'out-group' are in contrast defined by the stigmatised characteristic (e.g., my father *has* cancer, as opposed to my father *is* a drug addict).
Status loss	Status loss occurs when individuals from stigmatised groups are disadvantaged in social hierarchies, leading to the degradation of rights, and barriers to adopting positions of respect or power (Link & Phelan, 2001). This relates to processes of social distancing, whereby individuals from stigmatised groups are excluded from certain spaces and opportunities (Singer & Page, 2014).
Discrimination	Episodes of discrimination are enactments of stigma (Earnshaw & Chaudoir, 2009). This includes individual discrimination, when one person treats another unfairly by merit of their stigmatised status; for example, by refusing to provide healthcare (Link & Phelan, 2001). This also includes structural discrimination, where rules, policies, or social norms promote unfair treatment, as opposed to discrimination being perpetrated by an identifiable individual; for example as less funding is available for research on stigmatised conditions (Link & Phelan, 2001) (see structural stigma).
Stigma power	'Stigma power' is a term coined by Link and Phelan to refer to the ways in which stigma processes are exercised by groups in positions of power to achieve particular aims (Link & Phelan, 2014). This includes exploitation and domination (keeping people down); enforcing social norms (keeping people in); and avoidance of disease (keeping people away) (Phelan et al., 2008). Other authors have elucidated on ways stigma is used particularly as a tool to subjugate certain groups who are scapegoated for wider social problems (Friedman et al., 2022; Scambler, 2018; Tyler, 2022).
Structural stigma	'Structural stigma' moves beyond a focus on interpersonal stigma, to focus on "[s]ocietal-level conditions, cultural norms, and institutional policies that constrain the opportunities, resources, and wellbeing of the stigmatized" (Hatzenbuehler, 2016). For example, criminalisation (Scher et al., 2023); and coercive and restrictive healthcare policies (Livingston, 2020). Where structural stigma is studied in relation to specific settings, the terms 'institutional' and 'organisational' stigma are sometimes used. These concepts are closely related to the broader social science literature on 'structural violence', which describes how hidden social processes disadvantage certain groups of people, for example through policies that facilitate racism and sexism (Rhodes et al., 2011).
Prejudice	Conceptual models of prejudice have much in common with conceptual models of stigma (Phelan et al., 2008). In contemporary stigma literature, however, 'prejudice' generally refers to the attitudinal and emotional components of stigma processes (Earnshaw & Chaudoir, 2009).
Enacted / perceived / experienced stigma	These terms refer to stigmatised individuals' experiences of discriminatory behaviour (Earnshaw & Chaudoir, 2009; Scambler & Hopkins, 1986).
Felt / anticipated stigma	These terms refer to feelings of fear associated with the real or imagined risk of enacted stigma (Earnshaw & Chaudoir, 2009; Scambler & Hopkins, 1986); leading to avoidance of social interactions and/or service engagement (Harris, 2020). In some uses of the term, 'felt stigma' also encompasses feelings of shame as per 'internalised' or 'self-stigma' (Scambler & Hopkins, 1986).
Internalised / self-stigma	These terms refer to the degree that individuals endorse the negative stereotypes they are associated with, as well as associated feelings of shame and low self-worth (Earnshaw & Chaudoir, 2009; Lancaster et al., 2017; Luoma et al., 2007).

Introduction

In its etymological roots, stigma referred to a physical mark designating an individual as undesirable, such as a brand or tattoo indicating they were a criminal or a traitor (Tyler, 2022). With state-orchestrated physical disfigurement now rare, the term is primarily associated with certain characteristics, which when exhibited, lead society to treat an individual unfavourably (Goffman, 1963). In some uses of the word, 'stigma' refers to the characteristic itself, and in others the social phenomena associated with it, including processes of stereotyping and discrimination (Earnshaw & Chaudoir, 2009; Goffman, 1963; Stangl et al., 2019; Tyler, 2022) (Box 1).

A substantial proportion of the population faces some form of stigma, which can be associated with a range of characteristics (Pachankis et al., 2018). These stigmas often overlap with other forms of stigma and disadvantage (Turan et al., 2019). People who use illegal drugs (hereafter referred to as 'drugs') face particularly high levels of stigma, with members of the public and healthcare workers often holding prejudicial attitudes towards them (van Boekel et al., 2013; Yang et al., 2017). This is despite the relative ubiquity of drug use, with roughly 6 % of the global population aged 15–64 estimated to have used drugs in 2021 (UNODC, 2023). Levels of stigma depend on the type of drug used and attendant social circumstances. For example, people who inject drugs (Luoma et al., 2007) and people who use synthetic cannabinoids (Adley et al., 2023) face particularly high levels of stigma; and prejudice towards people experiencing poverty is associated with and exacerbates other forms of stigma (Cortina, 2022).

Health research on stigma has grown considerably in recent years, with a 20-fold increase in documents related to 'stigma' indexed in PubMed between 2000 and 2023 (National Library of Medicine, 2024). This work increasingly characterises stigma as a social determinant of health, which drives poor health outcomes and inequalities (Hatzenbuehler et al., 2013; Link & Hatzenbuehler, 2016; Stangl et al., 2019). Globally, drug-related deaths have roughly doubled since 1990, with many areas declaring a 'drug-related death crisis' (UNODC, 2023). Stigma has demonstrable negative impacts on people who use drugs, likely contributing to increasing levels of harm (Rae et al., 2022). Experiences of stigma can, for example, foster shame and lead to more harmful patterns of drug use (Lancaster et al., 2017). Discrimination can manifest as barriers to housing and employment (Lloyd, 2013), health services (Harris, 2020; McNeil et al., 2014), and drugs services (Hammarlund et al., 2018), which would otherwise protect against risks of overdose and other harms. More broadly, prejudice can influence views on policies, fostering punitive responses and undermining support for evidence-based harm reduction interventions (Guise et al., 2023; Holland et al., 2022; Kennedy-Hendricks et al., 2017); as well as underpinning restrictive and ineffective healthcare policies (Harris et al., 2022). Accordingly, there are increasing calls to challenge stigma towards people who use drugs, including from the highest-level coordination forum of the United Nations (UNCEBC, 2018).

The use of mass media provides an opportunity to challenge stigmatising attitudes at scale. Following Bala, Brinn, and Clement, we consider mass media to be "channels of communication intended to reach large numbers, which are not dependent on person-to-person

contact" (Bala et al., 2008; Brinn et al., 2010; Clement et al., 2013). This could, for example, include billboards, films, radio, social media, television, and websites. A broad literature has detailed how mass media often perpetuates harmful stereotypes of people who use drugs; including in news media (Atkinson & Sumnall, 2021; Cohn et al., 2020; Wincup & Monaghan, 2016), entertainment television and popular movies (Atkinson & Sumnall, 2020; Cape, 2003), and historic campaigns intended to deter drug use (Douglass et al., 2017; Marsh et al., 2017). Mass media may also be used, however, to facilitate positive social change. When drawing on techniques from commercial marketing this is referred to as 'social marketing' (Kotler & Zaltman, 1971). The effectiveness of mass media campaigns intended to positively influence attitudes and behaviours associated with public health issues has varied, influenced by factors including intervention format, mode of delivery, timescale, and content (Stead et al., 2019; Wakefield et al., 2010).

Corrigan delineates anti-stigma messaging approaches, which might be disseminated in mass media, as: 'protest' (highlighting injustices and chastising stigmatisers), 'education' (providing information to correct negative stereotypes), and 'contact' (facilitating exposure to stigmatised groups) (Corrigan, 2018). Within these categories, however, there is scope to frame people who use drugs, drug use, and dependence in disparate ways. This could otherwise be termed ways of 'sense-making', which may have different perceived advantages or disadvantages for diverse groups of people who use drugs, professionals, or the public (Morris, 2022). For example, some people who use drugs may find it helpful to characterise their pattern of drug use as a 'disease' from which they can recover. Proponents of the disease model of addiction argue this reduces blame attribution and associated stigma (Leshner, 1997). Others, including some advocacy groups comprising people who use drugs (ANPUD & INPUD, 2020), are critical of the disease model, and highlight mixed evidence for its impacts on stigma (Heather et al., 2022).

Some well-intentioned anti-stigma campaigns may inadvertently reinforce stigmatising stereotypes (Joffe, 1996; Walsh & Foster, 2021); a paradoxical phenomenon Corrigan refers to as the 'stigma effect' in his work on mental health stigma (Corrigan, 2018). Corrigan suggests the risk of the stigma effect is related to the 'agendas' of campaigns; of which he describes three: 'service' (reducing label avoidance to increase health service access), 'rights' (ensuring equitable life opportunities), and 'self-worth' (replacing feelings of shame with dignity) (Corrigan, 2018). Particularly, he highlights risks of the service agenda being associated with the stigma effect. Whilst mental health and drug treatment services provide benefits for many people, he suggests that campaigns primarily intended to promote treatment and recovery may accentuate difference and further pathologise stigmatised conditions. This may conflict with other agendas intended to foster equal opportunities and self-worth (Corrigan, 2018).

Stigma reduction efforts are further complicated by conflicting applications of the term 'stigma' in policy and research. This problem has been eloquently summarised as the "simultaneous ubiquity and elusiveness" of stigma, "result[ing] from the fact that it is a term used largely by researchers to designate and make sense of a wide range of phenomena" (Dolezal, 2022, 855). Despite its complexity, 'stigma' is often under-theorised, and *a priori* understandings are taken for granted (Harris et al., 2021). This leads to systematic issues with problem conceptualisation and so-called 'type III errors' in quantitative research (Walsh & Foster, 2021). Attempts to quantify stigma are rarely consistent (Livingston et al., 2012; Tostes et al., 2020). Instruments generally refer to specific stigma 'domains', such as blame and affect (Kwakep epse Semegni et al., 2021), which do not always correlate (Angermeyer et al., 2014; Haslam & Kvaale, 2015).

Given the potentially important role for mass media and the risk of the stigma effect there is a need to understand the scope and content of existing mass media interventions intended to reduce stigma towards people who use drugs. We are not aware of a prior systematic effort to review literature on these interventions specifically. Systematic reviews

have been conducted about mass media interventions for people with mental health conditions (Clement et al., 2013); and wider anti-stigma interventions for people who use drugs (Livingston et al., 2012; Tostes et al., 2020). However, search terms were not specifically defined to capture mass media interventions intended to reduce stigma towards people who use drugs; and we anticipated relevant studies published since 2020.

We performed a scoping review: "a type of knowledge synthesis, [which] follow[s] a systematic approach to map evidence on a topic and identify main concepts, theories, sources, and knowledge gaps" (Tricco et al., 2018, 467). This approach was deemed appropriate as we anticipated that variation in intervention content and stigma measurement instruments would preclude meaningful synthesis of findings. Accordingly, our intention was to map intervention foci, content, and characteristics, as well as how authors conceptualised and measured stigma, as opposed to assessing methodological rigour or whether interventions were effective.

Objective

Identify and present reports on the development and/or evaluation of mass media interventions intended to reduce stigma towards people who use drugs, to answer the following questions:

1. Who were the intervention subjects and intended recipients?
2. What was the format of the interventions?
3. Who developed the interventions?
4. What was the content of the interventions?
5. How did report authors conceptualise and measure stigma?

Methods

We report our review according to the PRISMA extension for scoping reviews checklist (Appendix I) (Tricco et al., 2018).

Protocol

The protocol was registered on the Open Science Framework on March 1, 2023 (after searches / before data charting) (Holland, 2023).

Eligibility criteria

Eligibility criteria and rationale are listed in Table 1.

Information sources and search criteria

AH conducted searches in Medline, Embase, APA PsycINFO, CINAHL, ERIC, IBSS, and Web of Science on February 6–8, 2023; restricted to English language documents; with no date restrictions. Search terms were defined with a university librarian, related to: (i) people who use drugs; (ii) stigma; (iii) mass media; including database specific subject headings and truncated key words (Appendix II).

After title, abstract and full text screening of database records, AH searched the reference lists of included reports (and relevant reviews); and for records which cited these reports (on September 20, 2023). For documents with a Digital Object Identifier (DOI) AH used Citation-Chaser (Haddaway et al., 2021). For documents without a DOI, AH hand-searched references, and searched for citing documents using Google Scholar. If interventions were not publicly available or abstracts were published without associated articles AH attempted to contact study authors to request relevant documents.

Selection of sources of evidence

Records were exported from databases with Endnote and imported into Covidence (Covidence, 2023). Duplicates were removed with

Table 1
Scoping review inclusion criteria.

Include	Exclude	Rationale and notes
Participants (recipients)		
• Reports about interventions with intended recipients including the general public or specific sub-populations (e.g., doctors, nurses, teachers, students).	• Reports about interventions with intended recipients only comprising people who use(d) drugs.	The focus of the review was interventions intended to challenge stigmatising processes (as opposed to directly managing internalised stigma).
Participants (intervention subjects)		
• Reports about interventions discussing people who use(d) prohibited drugs or novel psychoactive substances (yet to be prohibited, or in the process of being prohibited).	• Reports about interventions only discussing people who use(d) legal substances (e.g., alcohol, tobacco, coffee). • Reports about interventions pertaining to 'mental illness' without a specific component about drug use.	Criminalisation likely affects the character of stigma towards people who use prohibited drugs. The literature about 'mental illness' stigma is much larger and less specifically relevant for this population. Whilst dependent drug use is often characterised as a psychiatric disorder (American Psychiatric Association, 2022; ICD-11, 2021), this is not universally accepted (Heather et al., 2022).
Concept (intervention)		
• Reports about mass media interventions (e.g., films, pamphlets, websites, online training modules).	• Reports about interventions with no stand-alone mass media components.	The focus of the review was mass media interventions. Media that were not suitable to be disseminated as stand-alone interventions were not considered to be mass media and documents about interventions including media of these types were excluded. For example, live teaching with video clips of patient interactions; and experimental studies where participants were presented with different media excerpts according to their allocated condition (vignette studies).
Concept (outcome)		
• Reports about interventions intended to reduce stigma or related processes and phenomena (stereotyping, discrimination, prejudice, negative attitudes, bias, dominant representations).	• Reports about interventions aiming to reduce stigma towards specific approaches or interventions, as opposed to *people* who use drugs. • Reports about interventions aiming to modify processes related to stigma (e.g., attitudes) where the aim was not contextualised with reference to or discussion of 'stigma'.	Stigma is a complex construct, closely related to and including discrimination and the other stated phenomena. Interventions aiming to modify attitudes towards treatment, research, or certain approaches were not considered relevant as not specifically aiming to reduce stigma towards *people* who use drugs, and support for a certain approach would not necessarily entail the absence of stigma. Co-produced research projects were included where there was a clear dissemination plan for non-academic audiences and a stated aim to challenge stigma or modify related processes (as opposed to projects which solely reported participant experiences for research purposes).
Context		
• Reports about interventions conducted in any location or context.	• Non-English language reports.	The first language of the authorship team is English. Language plays a key role in stigma, and interpretation may be nuanced. Accordingly, expertise was not available to analyse reports written in other languages.
Types of evidence		
• Journal articles, book chapters, websites, Government or third sector reports, dissertations, conference posters and abstracts.	• Reviews. • Books. • Reports about anti-stigma interventions including a mass media component when the mass media component was not created specifically for the intervention (e.g., person-to-person training intended to reduce stigma, which included excerpts of Hollywood films or documentaries). • Reports about wider components of an intervention with relevant anti-stigma components, where other included reports describe the anti-stigma component.	Reviews were not included, but references were searched for relevant articles. The exclusion criterion for books was added due to anticipated difficulties in obtaining and reviewing books. However, only one book was excluded as a report – *Every Family in the Land* (Crisp, 2004) – which was included as an output of the Changing Minds campaign (as it was characterised as such by the other reports about this campaign). The exclusion criterion for interventions using secondary mass media was added, as the only mass media components in some interventions were excerpts of media such as films and documentaries; and it was not possible to interpret the motivations of the media creators or whether the media was intended as an anti-stigma intervention. The exclusion criteria for non-relevant reports about wider intervention components was added as the HEALing Communities Study was described across many academic papers, only some of which were about the intervention's mass media components.

Endnote, Covidence, and manually.

AH and JH double screened titles and abstracts for 25.4 % of records from database searches (99.4 % agreement) with conflicts adjudicated by TF and MH. Given this high level of agreement, remaining records were screened by AH. After title and abstract screening was completed, we modified the inclusion criteria to include online training programmes. AH conducted focused searches in Covidence for 'training', 'module', 'online', 'internet', 'remote', 'elearning', 'e-learning' and 'web
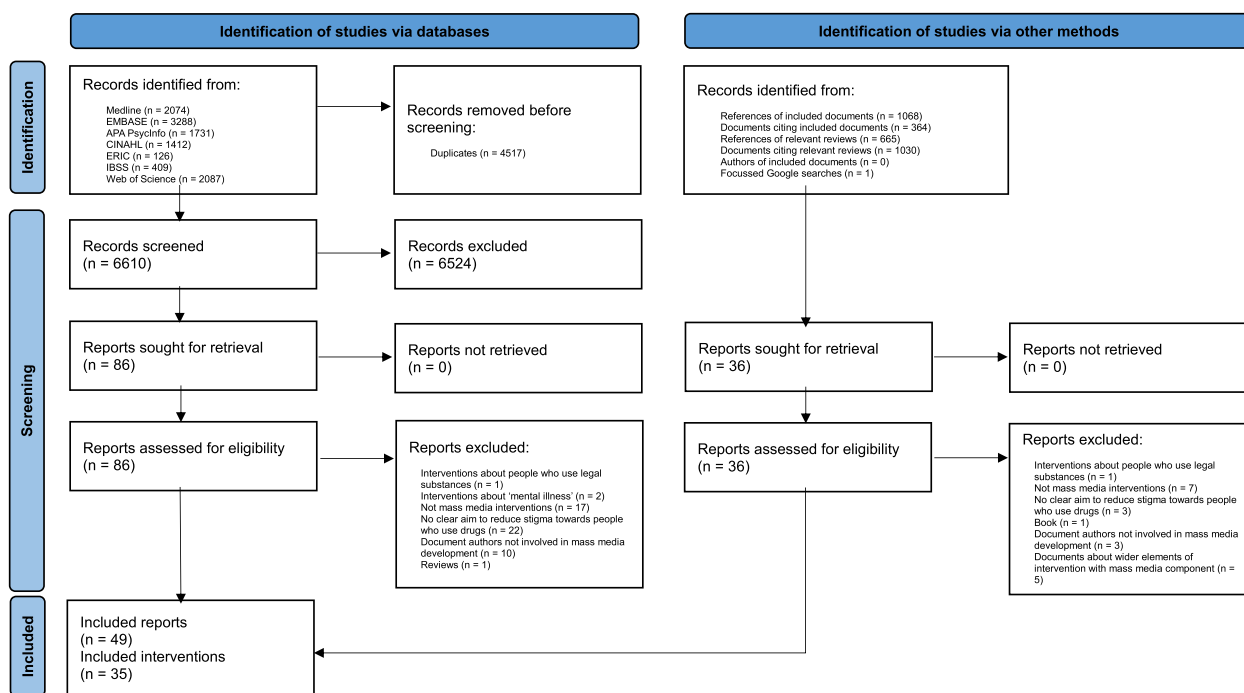
Fig. 1. PRISMA flow diagram (Page et al., 2021).

based' to identify relevant records. Records from CitationChaser were imported into Covidence and screened by AH.

After title and abstract screening was completed for database records, AH and CB performed full text screening and data charting simultaneously for 25.6 % of included reports (95.5 % inclusion agreement). Given this high level of agreement, remaining reports were screened, and data charted by AH, in discussion with OM when decisions were unclear. Scoping review questions, and inclusion criteria were subsequently refined (Appendix III), and additional reports excluded in discussion with OM. Exclusion criteria were ascribed hierarchically, applying the first relevant criterion in Table 1.

Data charting and synthesis

AH iteratively developed a data charting instrument in Microsoft Excel with input from CB and wider authors. Data charting comprised analytic notes, quotes, and basic qualitative content analyses (Pollock et al., 2023). Data were charted from reports, and interventions where accessible.

Where interventions included large amounts of material; for example, many videos or hours of course content, a selection of the most relevant resources was reviewed, including overview pages, and resources about the nature of stigma, drug dependence, and recovery. AH deductively categorised intervention content as 'protest', 'education', and 'contact' as per Corrigan (Corrigan, 2018); and inductively sub-categorised specific messaging approaches. Analytic notes were recorded on content about the nature of drug dependence or recovery.

AH inductively categorised and sub-categorised items from measurement instruments pertaining to stigma. Some interventions had multiple aims and anticipated outcomes, with different instruments or sub-sections of instruments used to measure them. Items were included if authors referred to them as 'stigma' or related processes (e.g., 'attitudes') in relation to people who use drugs, or if they pertained to general statements about people who use drugs or the nature of drug dependence. This included specific items from 'knowledge' instruments about for example, drug dependence being a disease, or the likelihood of recovery, but not items about medication effectiveness or local services. Instruments about 'mental illness' were included if used in reference to

drug dependence.

We anticipated study outcomes would not be meaningfully comparable given the variety of measurement tools used to evaluate anti-stigma interventions (Livingston et al., 2012; Tostes et al., 2020). Accordingly, consistent with our aims and guidance on scoping reviews (Tricco et al., 2018), we did not chart outcomes or undertake quality appraisals.

Positionality

We recognise that author pre-conceptions may influence even the most methodologically rigorous research (Darwin Holmes, 2020; Malterud, 2001). For drugs researchers, lived experience of drug use is particularly relevant, but is rarely reported (Ross et al., 2020). Some of the authorship team have personal experience of drug use, some have experienced associated stigma, and we have close personal and professional relationships with numerous people who use drugs. It is feasible our backgrounds and experiences have influenced where we thought interventions presented an over-simplified or pejorative view of people who use drugs. Readers are invited to make their own interpretations, with intervention level data presented as supplementary information, alongside links to associated interventions and reports.

Results

Selection of sources of evidence

Database searches yielded 11,127 records (4517 duplicates). Titles and abstracts of 6610 records were screened, 6524 were excluded, and 86 included in full text screening. Forward and backward citation chasing was performed for reports included after full text screening and for 11 reviews identified during title and abstract screening (Appendix IV). One additional report was identified with a focussed Google search (an evaluation of the 'Changing Minds' campaign, for which one other report was included after the database search). These actions yielded a further 3127 records, 36 of which were included in full text screening. From 122 full texts, we included 49 reports about 35 interventions (Fig. 1). In some cases, reports evaluated selected elements of wider

Table 2
Intervention and report characteristics.

Intervention	Link (if available online)	Associated reports	Year of publication of first report	Location	Subject drug(s)	Subject level of drug use	Intended recipients	Type
Addiction Medicine Tiered Curriculum	https://mmc.instructure.com/courses/448	Truncali et al. (2021) - research article.	2021	USA: Maine.	Not specified.	"Use disorder".	Healthcare workers.	Online training programme.
Addiction Treatment: Clinical Skills for Healthcare Providers	https://www.coursera.org/learn/addiction-treatment/	Edens et al. (2021) - conference abstract.	2021	USA: Connecticut.	Not specified.	"Use disorder".	Healthcare students.	Online training programme.
Addictive Substances and Pain Curriculum for Health Professional Students	Intervention not available.	Martin et al. (2022) - conference abstract.	2022	USA: Alabama.	Not specified.	"Use disorder".	Healthcare workers and students.	Online training programme.
Back to Life	https://backtolifewv.org/	Watson et al. (2022) - research article.	2022	USA: West Virginia.	Not specified.	Injecting.	General public. Healthcare workers. People who inject drugs. Social service providers.	Billboard. Website.
Behind the Stigma: Stories of Addiction and Recovery	https://www.substanceusestigma.com/video.html	Avery et al. (2019) - research article.	2019	USA: New York.	Opioids.	"Use disorder".	Healthcare workers.	Online training programme.
Beyond Glue and Bazuco	Examples of intervention included in article.	Ritterbusch (2016) - research article.	2016	Colombia: Bogotá.	Bazuco (cocaine paste formulation). Inhalants.	Not specified.	Healthcare workers.	Photographs. Video.
Changing Minds	Intervention not available.	Crisp et al. (2005) - research article. Crisp et al. (2004) - comment / editorial / other.	2004	UK: national.	Not specified.	Not specified.	General public (including children). Healthcare students. Healthcare workers.	Books. CD-Rom. Film. Pamphlets. Report. Train advertisements. Website.
Cracks in the Ice	https://cracksintheice.org.au/	Kershaw, Birrell, Deen et al. (2021) - research article. Kershaw, Birrell, Champion et al. (2021) - conference abstract. Birrell et al. (2018) - research article. Champion et al. (2018) - research article.	2018	Australia: national.	Crystal methamphetamine.	Not specified.	Aboriginal and Strait Islander peoples. Community groups. General public. Healthcare workers. People who use crystal methamphetamine, their friends and families. Schools.	Pamphlets. Phone application. Posters. Website.
Educating Students About Opioid Use Disorder and Treatments in the Community	Intervention not available.	Williams et al. (2020) - research article.	2020	USA: Utah.	Opioids.	"Use disorder".	Healthcare students.	Video.
Harm Reduction Stories	Intervention not available.	Goodman (2019) - research article.	2019	Canada: British Columbia.	Opioids.	"Long term".	General public.	Website.
Healthcare: Developing Relational Skills for the Assistance of People Living with Substance Use Disorders	Intervention not available.	Monteiro et al. (2020) - research article.	2020	Brazil: national.	Not specified.	"Use disorder".	Healthcare workers.	Online training programme.

Table 2 (*continued*)

Intervention	Link (if available online)	Associated reports	Year of publication of first report	Location	Subject drug(s)	Subject level of drug use	Intended recipients	Type
Helping End Addictions Long Term (HEALing) Communities	https://healingcommunitiesstudy.org/about-oud/oud-addiction.html	Chatterjee et al. (2022) - comment / editorial / other. Aldridge et al. (2020) - protocol. Knudsen et al. (2020) - protocol. Lefebvre et al. (2020) - protocol. Martinez et al. (2020) - protocol. HEALing Communities Study Consortium (2020) - protocol.	2020	USA: Kentucky, Massachusetts, New York, Ohio.	Opioids.	"Use disorder".	Community leaders. General public. Healthcare workers. People with lived experience, their friends and families.	Pamphlets and other print materials. Social media campaign. Website.
Interprofessional Chronic Pain and Addiction Training	*Intervention not available.*	Arnstein et al. (2021) - research article.	2021	USA: Massachusetts.	Opioids.	"Use disorder".	Healthcare workers.	Online training programme.
Let's Talk About Marijuana	Screenshots available in dissertation.	Strong (2017) - dissertation.	2017	USA: Iowa	Cannabis.	Not specified.	University students.	Online training programme.
Life Unites Us	https://lifeunitesus.com/	Bonnevie et al. (2022) - research article.	2022	USA: Pennsylvania.	Opioids.	"Use disorder".	General public.	Social media campaign. Website.
Lives of Substance	https://www.livesofsubstance.org/	Broady et al. (2021) - research article. Treloar et al. (2019) - research article.	2019	Australia: national.	Not specified.	People who describe themselves as having an addiction, dependence, or habit.	Family members of people who use drugs. General public. Healthcare workers. Policymakers.	Website.
My Lens Our Issues	https://mylensartforchange.wordpress.com/	Dingman and Zibalese-Crawford (2021) - comment / editorial / other.	2021	USA: Philadelphia.	Opioids.	Not specified.	General public. Students.	Social media. Website.
National Institute on Drug Abuse - Addressing Stigma and Health Disparities	https://nida.nih.gov/nidamed-medical-health-professionals/health-professions-education/words-matter-terms-to-use-avoid-when-talking-about-addiction	Subramaniam et al. (2023) - comment / editorial / other.	2023	USA: national.	Not specified.	"Use disorder".	General public. Healthcare workers.	Website.
Nice People Take Drugs	Image available in article.	Rubin (2009)) - comment / editorial / other.	2009	UK: London.	Not specified.	Not specified.	General public.	Bus advertisement.
Opioid Overdose Awareness and Reversal Training	https://www.youtube.com/watch?app=desktop&v=r9FWdxAs4cM	Goss et al. (2021) - research article.	2021	USA: Pennsylvania.	Opioids.	"Use disorder".	Healthcare workers.	Online training programme.
Opioid Use Harm Reduction Tool for Emergency Medicine Residents	*Intervention not available.*	Kelly (2022) - conference abstract.	2022	USA: New York.	Opioids.	Not specified.	Healthcare workers.	Digital reference guide.
Overdoselifesavers.org	https://overdoselifesavers.org/	Farrugia et al. (2022) - research article.	2022	Australia: national.	Opioids.	Not specified.	General public. Healthcare workers. People who use drugs and their family members. Policymakers.	Website.
Pathways to Recovery: Training Modules for Opioid Use Disorder	https://mediaspace.itap.purdue.edu/playlist/dedicated/117734942/0_ogjv2l1d/0_7s7pi0ex	Adams (2021) - research article.	2021	USA: Indiana.	Opioids.	"Use disorder".	General public. Police.	Online training programme.

Table 2 (*continued*)

| Intervention	Link (if available online)	Associated reports	Year of publication of first report	Location	Subject drug(s)	Subject level of drug use	Intended recipients	Type
Pilot Intervention to Reduce Mental Health and Addiction Stigma in Primary Care Settings	*Intervention not available.*	Khenti et al. (2019) - research article.	2019	Canada: Ontario.	Not specified.	"Substance use problems".	General public. Healthcare workers.	Posters (print and digital).
Reducing stigma using social norms theory	Script available as supplementary information of article.	Broady et al. (2023) - research article.	2023	Australia: national.	Not specified.	Injecting.	Healthcare workers.	Videos.
Stamp Out Stigma	*Intervention not available.*	Hind and Manley (2010) - comment / editorial / other.	2010	UK: Nottinghamshire.	Not specified.	Not specified.	Drugs workers. Healthcare workers. Pharmacists.	Comic book.
Stigma Reduction Training	*Intervention not available.*	Hooker et al. (2023) - research article.	2023	USA: Minnesota and Wisconsin.	Opioids.	"Use disorder".	Healthcare workers.	Online training programme.
Stigma, Discrimination and Injecting Drug Use eLearning	https://ashm.org.au/	Brener et al. (2017) - research article.	2017	Australia: New South Wales.	Not specified.	Injecting.	Healthcare workers.	Online training programme.
Substance Use Disorders in Primary Care	https://courses.nextgenu.org/course/view.php?id=390	Clair et al. (2022) - research article. Clair et al. (2019) - research article. Clair et al. (2017) - conference abstract. Musau et al. (2016) - conference abstract.	2016	Kenya: national.	Not specified.	"Use disorder".	Healthcare workers.	Online training programme.
The Big Picture	https://projectresilience.co.uk/projects/the-big-picture/ https://licensing.leeds.ac.uk/product/pathways-to-recovery-model-of-substance-use-disorder-youthassam-comics-type-images-and-animations/	Duara et al. (2022) - research article.	2022	India: Assam.	Not specified.	Not specified.	Community leaders. General public. Healthcare students. Policy makers. Students.	Social media campaign. Website.
The Outcasts Project	https://www.aarongoodman.com/	Goodman (2018) - research article.	2018	Canada: national.	Heroin.	"Chronic".	General public.	Website.
The Truth About Opioids	https://www.thetruth.com/opioids#videos	Rath et al. (2022) - research article. Rath et al. (2020) - research article.	2020	USA: Rhode Island.	Opioids.	"Use disorder".	General public.	Website.
Voice	Samples of art available in article.	Paivinen and Bade (2008) - comment / editorial / other.	2008	Canada: British Columbia.	Not specified.	Not specified.	Academics. General public. Healthcare workers.	Artwork.
Web-Based Curriculum on Use of Stigmatising Language	*Intervention not available.*	Samberg et al. (2021) - conference abstract	2021	USA: Pennsylvania.	Not specified.	"Use disorder".	Healthcare workers.	Online training programme.
Words Matter / Medication Treatment Works	In supplementary information of article.	Kennedy-Hendricks et al. (2022) - research article.	2022	USA: national.	Opioids.	"Use disorder".	Healthcare workers.	Pamphlets (digital).
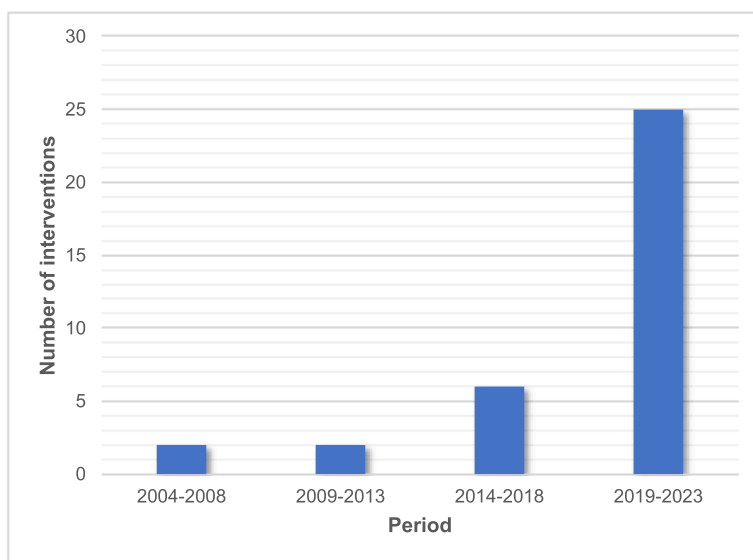
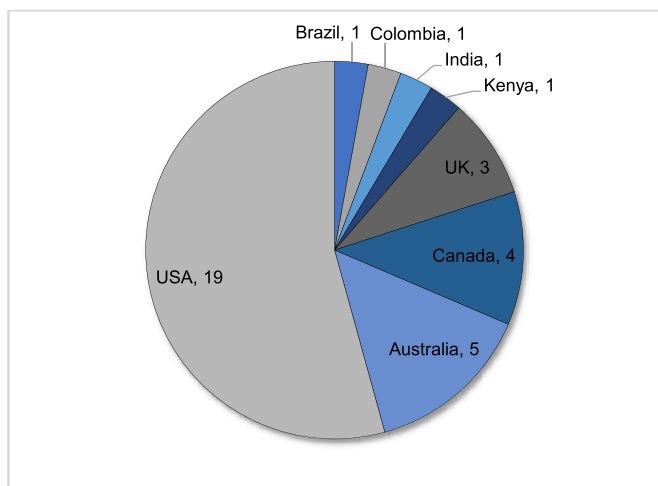**Fig. 2.** Year of first publication about interventions.

Fig. 3. Country of interventions.

interventions used in different contexts, for example Broady et al. (2021) evaluated a short audiovisual recording from the Lives of Substance intervention as a contact-based strategy without the context of the wider intervention (Treloar et al., 2019).

Characteristics of sources of evidence

Table 2 shows interventions, reports, date of first publication, and location. The earliest report was published in 2004 and 25/35 reports were from the last five years (2019–2023) (Fig. 2). 19/35 interventions were from the United States, with others from Australia (five), Canada (four), the United Kingdom (three). Brazil (one), Colombia (one), India (one), and Kenya (one) (Fig. 3).

Synthesis of results

See Appendix V for intervention level data.

1. Who were the intervention subjects and intended recipients?
   Table 2 summarises intervention subjects and intended recipients. 14/35 interventions aimed to reduce stigma specifically towards

people who use opioids; individual interventions aimed to reduce stigma specifically towards people who use cannabis (Let's Talk About Marijuana); crystal methamphetamine (Cracks in the Ice); and inhalants and bazuco: a cocaine paste formulation (Beyond Glue and Bazuco). 17/35 interventions did not specify a particular drug.

According to their stated aims 24/35 interventions aimed to reduce stigma towards people with specified patterns of drug use: 18/24 focused on people experiencing a 'drug use disorder', 'addiction' or 'dependence'; 3/24 focused on people who inject drugs; and there were individual interventions focused on people with 'substance use problems', 'long term' and 'chronic' drug use. 11/45 interventions aimed to reduce stigma towards people who use or 'misuse' drugs without describing a more specific pattern of use. 14/35 interventions included content intended to reduce stigma towards other groups including people who use alcohol, nicotine, or prescription drugs; and people with mental health conditions, chronic pain, or blood borne viruses.

Intended recipients included the public and/or sub-populations defined by age, setting, or profession. 22/35 specified one type of audience and 13/35 specified two or more. 17/35 specified the public; 27/35 specified healthcare professionals and/or healthcare students. Other specified groups included children, community groups, drugs workers, police, policymakers, and students. Only one intervention was targeted at neither the public nor healthcare workers, which was instead aimed at students (Let's Talk About Marijuana).

2. What was the format of interventions?
   Table 2 summarises intervention formats. Interventions ranged from single pieces of media, such as a video or pamphlet, to complex multi-component interventions with print and digital elements, websites, and social media campaigns. Some of the interventions were designed primarily to reduce stigma. Other interventions aimed to reduce stigma alongside broader aims. These included educational interventions about drug use, dependence, and treatment; clinical practice; responding to overdoses; communication skills; and interventions promoting specific interventions. Sometimes, mass media elements were components of wider interventions, including in-person teaching, stakeholder engagement, and public events. The Helping End Addictions Long Term (HEALing Communities) and Back to Life interventions included harm reduction service provision alongside anti-stigma campaigns intended to promote accessibility.

32/35 interventions included digital elements, such as websites,

Table 3

Protest and education messaging approaches (not including information about the nature of drug dependence and recovery, discussed separately).

Education	Protest
"[C]hallenge inaccurate stereotypes about mental illness and replace these stereotypes with factual information" (Corrigan, 2018)	"[H]ighlights injustices of various forms of stigma and chastises stigmatizers for their prejudice and discrimination" (Corrigan, 2018)
Biomedicalisation • Comparing dependence with medical problems. • Comparing overdose with other medical problems. • Describing drug dependence / treatment biomedically. Challenging stereotypes • Challenging stereotypes explicitly or implicitly. • Discussing why people fit stereotypes. • Highlighting compatibility of drug use and social functioning. • Highlighting positive effects of drugs. • Highlighting ubiquity of drug use or dependence. External factors • Highlighting link between adverse experiences / social determinants and harmful patterns of drug use. • Highlighting link between mental ill health and harmful patterns of drug use. • Highlighting link between pain / disability and harmful patterns of drug use. Social norms • Using social norms approaches (what do colleagues think).	Appealing to emotions or values • Arguing stigma isn't a Christian attitude. • Questioning if recipients would treat friends or family in the same way. Exploring stigma drivers • Challenging justifications for stigma. • Exploring reasons for biases. Highlighting harms • Criticising media coverage. • Highlighting harms of criminalisation. • Highlighting harms of stigma. • Highlighting harms of stigmatising language. Human rights • Arguing for human rights. Re-directing anger • Placing blame for opioid harms on the pharmaceutical industry / doctors.

videos, a phone application, digistories (audio recordings accompanied by images), social media campaigns, and online training programmes. There were 13 online training programmes, comprising videos, written information, links to resources, quizzes, and interactive exercises. 11/13 were intended for healthcare professionals or healthcare students. The remaining two were intended for police / the public (Pathways to Recovery) and students (Let's Talk About Marijuana). 9/35 interventions included non-digital print or artistic media that were either disseminated, displayed publicly or in exhibitions, and in some cases digitalised and shared online. These included a comic, billboards, books, drawings, media displayed on public transport, paintings, pamphlets, posters, reports, and sculptures.

3. Who developed the interventions?

29/35 intervention development teams included individuals from health backgrounds (medicine, mental health, nursing, pharmacy, public health). Other authors of these interventions, and authors of other interventions, included academics (psychology, politics, sociology); advocacy organisations; communication and teaching experts; creative professionals; lawyers; and police.

There was no indication that people who use(d) drugs were involved in the development of 13/35 interventions. Of the other interventions, in 7/22 cases people who use(d) drugs co-produced or led intervention development; in 6/22, people who use(d) drugs held a formal advisory or other role; and in 9/25, people who use(d) drugs were otherwise consulted or featured in the intervention but did not have a stated formal role. In 9/22 cases, the people who use(d) drugs were identified as actively using drugs; in 6/22 they were identified as in recovery or abstinent; and in the remaining 7/22, current drug use status was not mentioned. The Stigma, Discrimination and Injecting Drug Use eLearning intervention was noteworthy for being the only intervention for which development was led by representative organisations of people who actively use drugs.

4. What was the content of the interventions?

Intervention content was available for 27/35 interventions: in full for 17/27 and partially for 10/27. Here we summarise content we categorised as 'education', 'protest', and 'contact' following Corrigan (2018); we describe novel approaches potentially warranting further study; and we highlight content we thought was pejorative (expressing disapproval or criticism of people who use drugs and/or drug use). Often 'education' and 'protest' approaches overlapped when problems with stigma were discussed alongside preferable framings. These approaches also overlapped with 'contact' approaches, where people who use(d) drugs delivered 'education' and 'protest' messaging in audiovisual recordings.

Some interventions included content intended to minimise enacted stigma which did not fit into 'education', 'protest', or 'contact' categories. This included communication skills training; a pledge to avoid stigmatising language; and appeals to 'community values' entreating recipients to respond to overdoses.

Education

All interventions provided information about people who use drugs, drug use, and dependence, which we categorised as 'education'. Table 3 lists these approaches, aside from content about the nature of dependence and recovery, discussed below.

Conceptualising dependence

10/27 interventions conceptualised drug 'addiction', 'substance use disorder' or 'dependence' as a 'brain disease', 'chronic disease', or simply a 'disease'. A further six interventions used other medical terms: 'disorder' or 'medical condition', without specifically using the term 'disease'. Of the 16 interventions using these medical framings, 13 were from the United States, and the others from India, Kenya, and the United Kingdom. Some of them discussed different theories but were ultimately supportive of disease models. For example, anti-stigma resources from the US National Institute on Drug Abuse suggested 'addiction' is a: "response to environmental stressors, a developmental disorder, a disorder caused by dysregulation of brain circuits, and … a learned behaviour". However, the blog argued in favour of the brain disease model specifically and suggested some people are more susceptible than others to the 'hijacking' of the brain purported to characterise addiction. Addiction Treatment: Clinical Skills for Healthcare Providers on the other hand argued the brain disease model was over-simplistic, instead proposing a 'chronic disease model', characterising 'addiction' as a "chronic, treatable, medical condition [with] biological, psychological, socioeconomic and spiritual dimensions".

Other interventions problematised disease models and the concept of 'addiction'. The Lives of Substance intervention was designed to intervene in the social construction of addiction and other key concepts, providing different perspectives on representations relevant for stigma. Its website included re-enacted interviews and audio recordings from people who use drugs, some of whom argued common understandings of addiction were not reflective of the reality of drug use. Overdoselifesavers.org also referred to addiction as a "controversial idea", highlighting the lack of expert consensus on its nature.

In some interventions people who use(d) drugs characterised 'addiction' as an external agent; for example, as "something that needs feeding" (The Outcasts Project); or as "taking everything … away from

Table 4
Instrument items measuring outcomes associated with stigma.

Interventions	How stigma related to intervention aims	Measure	Number of items	How authors referred to outcome measures	Categories of instrument items (number of items)					
					Opinions about drug use / dependence	Opinions about people	Affect	Opinions about interactions	Opinions about policies and treatment	Hypothetical self-disclosure
Addiction Medicine Tiered Curriculum	Aim to address "implicit bias" and "attitudes", contextualised with discussion of stigma.	Novel instrument 1 (attitudes items).	5 (/15 in longer instrument).	"Attitudes".	Medicalisation (1).	(Not) going to recover (2).		Responsibility / willingness to help (2).		
Behind the Stigma: Stories of Addiction and Recovery	Aim to reduce stigma.	Medical Condition Regard Scale.	11	"Attitudes".		(Not) deserving (2). (Not) difficult (1). (Not) going to recover (2).	(Not) angry or irritated (1). (Not) comfortable or satisfied (2). (Not) compassionate (1).	Responsibility / willingness to help (1).	Funding / insurance (1).	
Changing Minds	Aim to reduce stigma.	Novel instrument 2.	8	"Opinion score".		(Not) blameworthy (2). (Not) dangerous (1). (Not) different (1). (Not) difficult (1). (Not) going to recover (2). (Not) unpredictable (1).				
Cracks in the Ice	Aim to address "attitudes", contextualised with discussion of stigma.	Novel instrument 3.	14	"Attitudes".	Immoral (2). Valid lifestyle (2).	(Not) blameworthy (1). (Not) dangerous (1). (Not) mistreated (1). (Not) weak (1).	(Not) compassionate (1).	Acceptance / understanding (1). Social distance measures (2).	Incarceration / confinement (1).	Hypothetical self-disclosure (1).
		Novel instrument 4.	1	"Willingness to help".				Responsibility / willingness to help (1).		
		Novel instrument 5.	2 (/18 in longer instrument).	"Knowledge".		(Not) going to recover (1). Other / unknown (1).				
Educating Students About Opioid Use Disorder and Treatments in the Community	Aim to address "attitudes", contextualised with discussion of stigma.	Novel instrument 6.	1 (/8 in longer instrument).	"Knowledge".	Medicalisation (1).					
		Drug and Drug Problems Perception Questionnaire.	5 (/22 in longer instrument).	"Attitudes".		(Not) going to recover (1). (Not) respectable (1).	(Not) comfortable or satisfied (3).	Responsibility / willingness to help (1).		

(*continued on next page*)

Table 4 (*continued*)

Interventions	How stigma related to intervention aims	Measure	Number of items	How authors referred to outcome measures	Categories of instrument items (number of items)					
					Opinions about drug use / dependence	Opinions about people	Affect	Opinions about interactions	Opinions about policies and treatment	Hypothetical self-disclosure
Helping End Addictions Long Term (HEALing) Communities	Aim to reduce stigma.	Novel instrument 7.	Unknown.	"Personal stigma", "social distance", "personal behaviours".		Other / unknown (?).		Social distance measures (?). Other / unknown (?).		
Interprofessional Chronic Pain and Addiction Training	Aim to reduce stigma.	Novel instrument 8.	Unknown.	"Knowledge" related to stigma.	Other / unknown (?).					
Let's Talk About Marijuana	Aim to reduce stigma.	Affect Scale.	10	"Negative emotions" - measures collectively referred to as "stigma".			(Not) angry or irritated (2) (Not) anxious or fearful (5). (Not) compassionate (2). Other / unknown (1).			
		Social Distance Scale.	7	"Preferred social distance" - measures collectively referred to as "stigma".				Social distance measures (7).		
		Dangerousness Scale.	7	"Perceived dangerousness" - measures collectively referred to as "stigma".		(Not) dangerous (3). (Not) trustworthy (1). (Not) unpredictable (1).			Employment restrictions (1). Other / unknown (1).	
Lives of Substance	Aim to reduce stigma.	Expressed stigma indicator.	1	"Expressed stigma".				Other / unknown (1).		
		Attitudes Toward Injecting Drug Users Scale.	10	"Attitudes".	Immoral (2). Valid lifestyle (2).	(Not) mistreated (1).	(Not) compassionate (1).	Acceptance / understanding (1). Social distance measures (2).	Incarceration / confinement (1).	
		Perceptions of Controllability of Drug Use Scale.	4	"Controllability".		(Not) blameworthy (2). (Not) weak (1). Other / unknown (1).				
		Novel instrument 9.	10	"Personal distance".				Social distance measures (10).		
		Novel instrument 10.	7	"Opinions".					Other / unknown (7).	
Opioid Overdose Awareness and Reversal Training	Aim to reduce stigma.	Novel instrument 11.	8 (/11 in longer instrument).	"Attitudes" and "stigma".		(Not) blameworthy (3).		Responsibility / willingness to help (2). Other / unknown (1).	Other / unknown (2).	
Pathways to Recovery: Training Modules for Opioid Use Disorder	Aim to reduce stigma.	Novel instrument 12.	6	"Attitudes" and "stigma".		(Not) deserving (1).		Responsibility / willingness to help (1).	Employment restrictions (1). Recovery / abstinence (3).	

Table 4 (*continued*)

Interventions	How stigma related to intervention aims	Measure	Number of items	How authors referred to outcome measures	Categories of instrument items (number of items)					
					Opinions about drug use / dependence	Opinions about people	Affect	Opinions about interactions	Opinions about policies and treatment	Hypothetical self-disclosure
Pilot Intervention to Reduce Mental Health and Addiction Stigma in Primary Care Settings	Aim to reduce stigma.	Social Distance Scale.	7	"Attitudes".				Social distance measures (7).		
		Opening Minds Scale for Healthcare Providers (12-item).	12	"Various dimensions of stigma" / "Stigmatising attitudes".		(Not) blameworthy (1). (Not) going to recover (1). (Not) weak (1). Other / unknown (1).	(Not) comfortable or satisfied (1). (Not) compassionate (1). Other / unknown (1).	Responsibility / willingness to help (1).		Hypothetical self-disclosure (4).
		Mental Illness Clinicians' Attitude Scale.	16	"Attitudes".		(Not) dangerous (2). (Not) going to recover (1). Other / unknown (1).	(Not) comfortable or satisfied (1).	Language (1). Responsibility / willingness to help (2). Social distance measures (1). Other / unknown (1).	Other / unknown (4).	Hypothetical self-disclosure (2).
		Attribution Questionnaire.	27	"Discriminatory responses" / "emotional reactions".		(Not) blameworthy (3).	(Not) angry or irritated (3) (Not) anxious or fearful (6). (Not) compassionate (2). Other / unknown (1).	Responsibility / willingness to help (3). Social distance measures (3).	Coercion (2). Incarceration / confinement (4).	
		Novel instrument 13.	5	"Willingness to treat".				Responsibility / willingness to help (5).		
		Novel instrument 14.	13 (/26 in longer instrument).	"Attitudes".					Recovery / abstinence (13).	
		Canadian Community Health Survey Stigma Scale.	6	"Attitudes".		(Not) trustworthy (1). Other / unknown (2).		Social distance measures (3).		
		Novel instrument 15.	6	"Empowerment".		Other / unknown (6).				
Reducing Stigma Using Social Norms Theory	Aim to reduce stigma.	Expressed stigma indicator.	1	"Stigma / expressed stigma / the stigma indicator"				Other / unknown (1).		
		Novel instrument 16.	7	"Attitudes".		(Not) deserving (1). Other / unknown (6).				
		Novel instrument 17.	7	"Pluralistic ignorance".		(Not) deserving (1). Other / unknown (6).				

Table 4 (*continued*)

Interventions	How stigma related to intervention aims	Measure	Number of items	How authors referred to outcome measures	Categories of instrument items (number of items)					
					Opinions about drug use / dependence	Opinions about people	Affect	Opinions about interactions	Opinions about policies and treatment	Hypothetical self-disclosure
		Novel instrument 18.	8	"Agreement with stigmatising behaviour".				Opinions on hypothetical discriminatory interactions (8).		
Stigma Reduction Training	Aim to reduce stigma.	Novel instrument 19.	8	"Self-reported stigma" / "stigma".		(Not) blameworthy (2). (Not) different (3). (Not) respectable (1). Other / unknown (2).				
		Novel instrument 20.	3	"Willingness to work with".				Responsibility / willingness to help (3).		
Stigma, Discrimination and Injecting Drug Use eLearning	Aim to reduce stigma.	Novel instrument 21.	12	"Attitudes".	Immoral (2). Valid lifestyle (1).	Other / unknown (2).	(Not) compassionate (1). Other / unknown (1).	Social distance measures (2).	Drug control policies (1). Employment restriction (1). Incarceration / confinement (1).	
		Novel instrument 22.	10	Endorsement of "negative behaviours" and "concerns about client behaviours".		(Not) dangerous (1). (Not) trustworthy (1). Other / unknown (3).	(Not) anxious or fearful (1).	Opinions on hypothetical discriminatory interactions (4).		
Substance Use Disorders in Primary Care	Aim to reduce stigma.	Anti-stigma intervention survey.	20	"Dimensions of stigma".		(Not) blameworthy (1). (Not) dangerous (1). (Not) going to recover (1). (Not) mistreated (1). (Not) trustworthy (1). Other / unknown (1).		Responsibility / willingness to help (5). Social distance measures (6).	Employment restrictions (1). Funding / insurance (1).	Hypothetical self-disclosure (1).
		Opening Minds Scale for Healthcare Providers (15-item).	15	"Stigma" / "stigma score".		(Not) blameworthy (1). (Not) going to recover (1). (Not) weak (1).	(Not) comfortable or satisfied (1). (Not) compassionate (1). Other / unknown (1).	Responsibility / willingness to help (1). Social distance measures (4).	Employment restrictions (1).	Hypothetical self-disclosure (3).

Table 4 (*continued*)

Interventions	How stigma related to intervention aims	Measure	Number of items	How authors referred to outcome measures	Categories of instrument items (number of items)					
					Opinions about drug use / dependence	Opinions about people	Affect	Opinions about interactions	Opinions about policies and treatment	Hypothetical self-disclosure
The Truth About Opioids	Aim to reduce stigma.	Novel instrument 23.	3	"Stigmatising attitudes".		(Not) blameworthy (2). (Not) different (1).				
		Novel instrument 24.	1	"Stigma".		(Not) different (1).				
Web-Based Curriculum on Use of Stigmatising Language	Aim to reduce stigma.	Novel instrument 25.	Unknown.	"Stigma levels".		Other / unknown (2).				
Words Matter / Medication Treatment Works	Aim to reduce stigma.	Novel instrument 26.	6	"Dimensions of stigma" / "attitudes" / "levels of stigma".	Medicalisation (1).	(Not) blameworthy (1).	Other / unknown (1).	Social distance measures (2).	Funding / insurance (1).	
		Novel instrument 27.	11	"Endorsement" of particular language.				Language (11).		
		Novel instrument 28.	5 (/7 in longer instrument).	"Attitudes".		(Not) going to recover (1). (Not) weak (1).	Other / unknown (1).	Social distance measures (2).		

me" (The Truth about Opioids). The Big Picture included an output from a young person who previously experienced dependence, describing a person who uses drugs as "a slave to chemicals". Conceptualising dependence as an external agent may be intended to reduce shame or blame attribution. However, where associated with an emphasis on powerlessness, and particularly with reference to slavery, this approach would likely be viewed unfavourably by many people who use drugs.

Mobilising recovery

22/27 interventions addressed recovery or otherwise referenced reducing or stopping drug use in aspirational terms. Other interventions did not mention recovery, or they distinguished between problematic and non-problematic drug use and only referenced the benefits of recovery in the former case (for example, Cracks in the Ice). Lives of Substance again offered a nuanced discussion of the issue, including re-enacted interviews in favour and critical of recovery discourses, including discussion of whether recovery necessarily requires abstinence.

Recovery was sometimes described in contrast to the negative features of a prior life. For example, in terms of individuals becoming "functional members of society again" after "relearning how to be an honest and responsible person" (Back to Life). People who had recovered were said to be able to "resume productive lives" (Substance Use Disorders in Primary Care), "live full lives" (Words Matter / Medication Treatment Works), or "return to . . . caring for their loved ones", regaining the "ability to care for their child" (Pathways to Recovery: Training Modules for Opioid Use Disorder). Without specifically referring to 'recovery' some participatory projects described benefits of abstinence in contrast to former states (when using drugs) in pejorative terms: "You too can be free!" (Voice); "a dead man alive again" (The Big Picture); "clean and serene" (My Lens Our Issues).

Other education approaches

Some interventions explicitly challenged negative stereotypes, arguing there is no one type of person who uses drugs or experiences dependence. Others implicitly challenged stereotypes by highlighting the compatibility of drug use and social functioning; describing positive experiences of drug use such as enjoyment, social connection, and stress relief (as opposed to drug use necessarily being associated with a 'downward spiral'); or highlighting the ubiquity of drug use and/or dependence. An intervention from the advocacy organisation Release comprised a bus advertisement that simply stated: "Nice people take drugs". Overdoselifesavers.org highlighted the heroism of people who use drugs in saving the lives of others who overdosed. The Stigma, Discrimination and Injecting Drug Use eLearning featured an interactive exercise comprising the stories of five individuals with contrasting socioeconomic and professional backgrounds. Audiences were asked to identify who injected drugs, with the correct answer being 'all of them'. The intervention then described an individual who had a more harmful relationship with drugs and had experienced incarceration. In this case the intervention elaborated on external factors (including stigma) that contributed to the individual's situation.

Many interventions focused on why some people use drugs or experience dependence. They highlighted how trauma, mental illness, pain, and disability are associated with harmful patterns of drug use. One intervention (Opioid Overdose Awareness and Reversal Training) highlighted how economic pressures led many people with chronic pain in the United States to switch from prescription analgesia to heroin. Many interventions offered biomedical descriptions of drug dependence and treatment; or explicitly medicalised dependence by comparing it to chronic health conditions such as diabetes.

Finally, one intervention used social norms arguments, suggesting that stigmatising views of people who use drugs were less common than intervention recipients might believe (Reducing Stigma Using Social Norms Theory).

Protest

23/27 interventions included approaches we categorised as 'protest' (Table 3). All 23 highlighted harms of stigma; many identified harms of media reporting and stigmatising language; and a few specifically highlighted harms of criminalisation. Some explored why people hold biases, with a few arguing that racism drives stigma towards people who use some drugs. The Stigma, Discrimination and Injecting Drug Use eLearning intervention explicitly addressed the idea of 'positive stigma', challenging arguments that stigma should be used as a tool to deter drug use. Some US interventions (particularly The Truth About Opioids) emphasised practices of pharmaceutical companies and doctors as promoting opioid dependence, portraying people experiencing dependence as victims rather than blameworthy. A few interventions included content which explicitly argued for the human rights of people who use drugs (here considered as a 'protest' approach because it implicitly problematised how people who use drugs are currently treated). Others appealed to the values or emotions of intended recipients (e.g., arguing that stigma isn't a Christian attitude or asking how they would treat a friend or family member who used drugs).

Many interventions highlighted terminology to avoid, including 'addict', 'junkie', and 'abuser'. Most used and advocated for 'person first' language; however, formulations varied. These included agential descriptions of 'people who use', 'consume', and in one case the arguably pejorative 'abuse' drugs. Others used possessive constructions; for example, 'people with an addiction'; or passive constructions, such as 'people experiencing opioid dependence'. The non-person first construction of 'user' featured in some interventions, including the Stigma, Discrimination and Injecting Drug Use eLearning, reflecting the use of the term in the names of the representative advocacy organisations which developed the intervention. Some interventions avoided terminology that categorised people by their drug use; for example, Beyond Glue and Bazuco only featured descriptors chosen by participants such as 'mother' and 'brave'.

Contact

19/27 interventions used approaches we categorised as 'contact', including audio recordings, audiovisual recordings and images depicting people who use(d) drugs; as well as narratives and art created by people who use(d) drugs. 8/19 included people actively using drugs; 10/19 included only people described as abstinent or in recovery; and 1/19 included individuals in drug treatment without referring to current drug use.

Fourteen interventions included audiovisual material depicting people who use(d) drugs. 7/14 depicted people who actively use drugs; of these, 3/7 were co-production projects featuring the participants themselves (Beyond Glue and Bazuco, Harm Reduction Stories, and the Outcasts Project). The other 4/7 used actors for images and videos, including in re-enactments of interviews with people who use drugs (sometimes alongside original audio recordings of other interviews). The other 7/14 interventions only depicted people identified as abstinent or in recovery, and in no cases used actors. People who use(d) drugs described their experiences, or provided general information about drug use, dependence, and stigma. One intervention (The Truth About Opioids) included footage of a young woman experiencing opioid withdrawal, highlighting the difficulties of stopping drug use when experiencing dependence. Some interventions included audiovisual material of other individuals, including a celebrity ex-footballer, academics, drugs and healthcare workers, friends and family members of people who use(d) drugs (who were often bereaved by overdose), and police.

People identifying as in recovery often described their former selves (when using drugs) in markedly negative terms: as chaotic, untrustworthy, violent, and criminal. In some cases, personal reflections led to generalisations. For example, an individual in recovery stated: "no normal person wakes up and thinks I'm going to get some heroin today", therefore implying that people who use heroin are abnormal (Addiction Medicine Tiered Recovery). Actors portraying individuals who use drugs also sometimes described themselves in negative terms: for example, "I'm tired of being a burden and a disappointment" (Stigma Reduction Training). In some cases, people who use(d) drugs used terminology to describe themselves or their former selves, which other interventions deemed to be pejorative, such as 'addict' and 'junkie'. This was addressed by Lives of Substance, which argued it was the prerogative of people who use(d) drugs to define themselves with language of their own choosing.

The Big Picture was noteworthy for the very negative way in which it depicted people who use drugs. This was a participatory project led by a UK university, which aimed to reduce stigma whilst simultaneously aiming to deter young people from using drugs. It was conducted with two groups of young people in Assam, India. One group was described as having been "at increased risk of substance abuse but who … managed to stay clean"; the other as having "successfully completed drug rehabilitation". One output, for example, suggested 'the addict' aimed to entice others into drug dependence to manipulate them into purchasing and sharing drugs.

5. How did report authors conceptualise and measure stigma?

According to their stated aims, 29/35 interventions intended to reduce 'stigma' specifically, whilst others intended to address 'attitudes', 'dominant representations', 'bias', 'perceptions', or 'prejudice'. Only 11/35 interventions were associated with reports that explicitly defined stigma, as opposed to describing specific processes, drivers, or attitudes that might be considered stigmatising. Of the 24/35 interventions where reports did not clearly define stigma, four were only reported in conference abstracts, precluding theoretical exposition. In some cases, interventions themselves included more information about the nature of stigma, which was absent from reports.

Where 'stigma' was explicitly defined, it was described variously as an *attribute* affecting interpersonal relations, a *situation*, a *process* or co-occurrence of processes related to an attribute, or a discriminatory *behaviour*. Most commonly, authors referenced Link and Phelan, describing stigma as the co-occurrence of labelling, stereotyping, separation, status loss, and discrimination in the context of a power differential (Link & Phelan, 2001, 2014); and Goffman, who characterised stigma as a discrediting attribute affecting interpersonal interactions (Goffman, 1963). Some authors also described specific stigma concepts, including courtesy, enacted, perceived, public, self, and structural stigma.

Stigma was often characterised as a barrier to drug services, recovery, prevention, or screening for drug problems. Usually, authors listed other harms and processes of stigma, commonly including barriers to healthcare, employment, and housing; impacts on policy and funding decisions; social rejection; riskier drug use; discrimination and abuse; and impacts on health and wellbeing. In some cases, reducing drug use and dependence was seemingly the primary motivation for interventions, with stigma characterised as a barrier to achieving this. Perceived drivers of stigma were sometimes contradictory. Whilst a few authors suggested that the disease model of addiction perpetuated stigma, others proposed acceptance of the model as stigma's remedy. Other factors perceived to be perpetuating stigma included a lack of knowledge, problematic medical education (referred to as a 'hidden curriculum' of stigma), the media, language, and moral views of drug use.

Many reports did not discuss the key role of power in perpetuating stigma. Where power was referred to, some authors discussed Link and Phelan's characterisation of stigma as concurrent processes in the context of a power differential. Others highlighted the role of powerful individuals or groups in propagating stigma, such as politicians, lobby groups, and the media. Discussion of the role played by

criminal legislation in perpetuating and legitimising stigma, or the need to challenge punitive policies, was largely absent.

Measurement

19/35 interventions were evaluated quantitatively with instruments intended to measure phenomena related to stigma (as opposed to metrics of engagement; knowledge items about, for example, specific interventions; or perceived confidence working with people who use drugs). These reports used 42 measurement instruments. 14/42 were established instruments (or defined sub-sections of established tools) that had been developed and used in other studies, sometimes with minor modifications (for example replacing 'people with depression' with 'people who use drugs'). We classified the other 28/42 as novel instruments, which were either developed by study authors, or adapted from existing tools with significant modifications (adding or removing questions or significantly changing wording). Only two instruments – the social distance scale (Link et al., 1987) and the expressed stigma indicator (Broady et al., 2018) – were used to evaluate more than one intervention without significant modification.

In some cases, authors referred to outcome measures in specific terms, for example, 'endorsement of negative behaviours', 'controllability', or 'desire for social distance'. In others, measures were referred to broadly as 'attitudes', 'knowledge', or 'opinions' (with significant overlap in the types of items these terms referred to). Some measures were referred to simply as 'stigma' without addressing the difficulties in developing a summary measure of this complex concept.

We categorised instrument items into five groups. These groups and categories are listed in Table 4 and described below. Original items are available in Appendix V alongside references for the established instruments that authors used or modified.

(i) *Views of drug use and dependence (7/19 interventions)*

These items included views about whether drug use was immoral, or a valid way of life. Some instruments used derivations of items from the Attitudes Toward Injecting Drug Users Scale (Brener & Von Hippel, 2008) stating drug use is "merely a different kind of lifestyle that should not be condemned", which people have "a perfect right to . . . if that's the way they want to live". In this group we also included views about the nature of drug dependence, and whether it should be considered a medical disorder. Several instruments included statements analogous to "[s]ubstance use disorder is a chronic medical problem" or a "disease", with endorsement of these items considered a positive outcome. Whilst not in direct contradiction, the items considered in this group pertaining to endorsement of the disease model, and the right to use drugs stood in stark contrast. This may reflect different motivations to reduce stigma as described by Corrigan; the 'service agenda' in the former case; and the 'rights agenda' in the latter (Corrigan, 2018).

(ii) *Opinions about people who use drugs (18/19 interventions)*

These items pertained to how people who use drugs (or specifically people experiencing dependence) were perceived, for example, as dangerous, different, or weak. In this group we also included blame items, for example: "[i]njecting drug users are responsible for their addiction"; and items about recovery likelihood, for example: "[m]ost people with opioid use disorder will, with medication treatment, get well and return to productive lives".

(iii) *Affect towards people who use drugs (9/19 interventions)*

These items pertained to emotions felt in relation to people who use drugs, including anger, irritation, fear, and compassion; for example: "[p]eople should feel sympathetic and understanding of people who use ice [crystal methamphetamine]". We note that whilst compassion is often beneficial, it is not incompatible with perceived difference, pity, or other negative views, and is therefore contentious as a marker of stigma (or its absence).

(iv) *Attitudes toward interactions with people who use drugs (15/19 interventions)*

In this group we included items about social distance, ranging from willingness to sit next to someone who uses drugs to views of them marrying a relative; items eliciting views on whether people who use drugs were being discriminated against in described interactions; and items eliciting views on whether certain terminology is stigmatising. We included the latter in this group, given the potential negative impacts of using stigmatising terminology when interacting with people who use drugs. We also included items exploring willingness to provide help; sometimes specifically to people experiencing dependence, and in other cases to people who use drugs in general. An individual's willingness to provide help for a specific issue (such as overdose) could indicate an absence of stigma if the presence of stigma would preclude them from helping. However, an assumption that someone needs help simply because they use drugs could be compatible with or indicate prejudicial attitudes. This nuance was not always clearly articulated in the items, for example: "[i]f I knew someone who was using ice [crystal methamphetamine], I would help them".

(v) *Opinions about policies and treatment pertaining to people who use drugs (10/19 interventions)*

These items included opinions about different policies, and views on drug treatment and its aims. For example, views on coercion (e.g., mandatory drug treatment), drug control ("[t]here should be no restrictions on injecting drug use"); employment restrictions, funding and insurance coverage, and incarceration ("people who use ice [crystal methamphetamine] should be locked up to protect society"). In this group we also included items about the nature of recovery. One study, for example, considered it to be a positive outcome if recipients disagreed with the view that recovery requires abstinence; and if they were in favour of medications for opioid dependence.

(vi) *Hypothetical self-disclosure (3/19 interventions)*

Some studies included items referring to the likelihood of disclosing hypothetical drug use or associated problems. These items were included as a proxy measure for stigma, with the assumption that non-disclosure would reflect a negative view of drug use and associated shame. However, feasibly these measures could also reflect disinclination to experience discrimination.

Discussion

There is increasing research interest in the use of mass media to reduce stigma towards people who use drugs, with 25/35 of the interventions we reviewed first described in the last five years. Many interventions were from the United States (19/35) and many focused on stigma specifically towards people who use opioids (14/35); likely motivated by the opioid-related death crises in the United States (NIDA, 2023) and globally (UNODC, 2023). Most interventions were developed by teams including individuals from medical disciplines (29/35); and the intended recipients of most interventions included healthcare workers or students (27/35). People who use(d) drugs were not clearly involved in developing 13/35 interventions, few interventions were co-produced, and involvement was sometimes limited to people identified as in recovery. The medical focus of many interventions was reflected in aims to reduce stigma specifically towards people with patterns of drug use perceived to be problematic as opposed to people who use drugs in general, and in content which conceptualised drug dependence as a disease and emphasised the need for recovery. These approaches were not universal, as other interventions avoided or problematised medical framings. 'Stigma' was often under-theorised and discussion of the role of power and criminalisation in

perpetuating stigma was often absent. Quantitative evaluations used inconsistent approaches, with 42 measurement instruments associated with stigma used across 19 interventions, pertaining to a range of phenomena, sometimes including items with questionable face validity.

At least 10 interventions referred to drug dependence as a 'disease' and six others as a 'disorder' or 'medical condition'. Proponents of disease models of addiction argue that medicalising drug dependence will reduce blame and associated stigma (Leshner, 1997). Other academics (Heather et al., 2022) and representative organisations of people who use drugs (ANPUD & INPUD, 2020) are critical of disease models and their purported benefits. Biogenetic explanations for psychiatric diagnoses, whilst reducing blame, have increased perceived dangerousness and desire for social distance (Haslam & Kvaale, 2015; Kvaale et al., 2013); and media reports using medical terminology often still describe issues in pejorative terms (Kahn Best & Arseniev-Koehler, 2023). Furthermore, the process of categorisation (into a disease state) creates a delineation that may reinforce othering processes (Morris & Schomerus, 2023). Whilst some individuals experiencing dependence may benefit from the view they have a disease, it does not necessarily follow that this is the best framing for anti-stigma messaging (Morris, 2022).

Contrary to calls for "nothing about us without us" (Jürgens, 2008), people who use drugs are often excluded from decisions that concern them (Ti et al., 2012). Involvement of people who use(d) drugs in intervention development was often absent, minimal, or limited to people identified as in recovery. Broader stigma research suggests interventions facilitating contact with stigmatised groups can effectively reduce prejudice (Corrigan, 2018). Audiovisual footage of people who use(d) drugs was sometimes limited to people identifying as in recovery, which may not challenge negative attitudes towards people who continue to use drugs. We face a 'catch-22', however, as stigma may restrict the identifiable involvement of people who use drugs in audiovisual material, reflected in the use of actors for some interventions.

Twenty-two interventions referred to recovery or positive changes associated with stopping or reducing drug use. This is consistent with recommendations from some academics to highlight treatment effectiveness to reduce stigma (Hooker et al., 2023; McGinty, 2018). There is some evidence that describing individuals with successfully treated drug dependence (compared to describing individuals with ongoing dependence) is associated with lower desire for social distance and discrimination towards people experiencing drug dependence in general (McGinty et al., 2015). There are, however, different ways of describing recovery. Some interventions, particularly in audiovisual footage of people identifying as in recovery, framed recovery in contrast to a prior state of violence, chaos, and criminality. This could feasibly reinforce negative stereotypes about people who continue to use drugs, contrary to anti-stigma aims.

Consistent with previous studies (Harris et al., 2021) we found 'stigma' was often undefined or under-theorised. Many reports did not refer to the functions that stigma plays in maintaining power structures and socioeconomic inequalities (Link & Phelan, 2014; Scambler, 2018; Tyler, 2022). Theorists including Parker, Aggleton and more recently Tyler, have argued anti-stigma efforts are likely to be ineffective if they do not identify and challenge the power structures which facilitate stigmatisation (Parker & Aggleton, 2003; Tyler, 2022). For people who use drugs, criminalisation is of particular importance. Whilst people who use drugs are not physically disfigured by authorities to leave a literal 'stigma', they may receive a criminal record: a remnant of more literal historic stigmata, designed to indicate difference and affect social interactions. In the context of ongoing criminalisation, campaigns intended to reduce stigma towards people who use drugs will likely have limited impact (Corrigan, 2018; Fischer, 2020; Lancaster et al., 2017; Scher et al., 2023). Mass media interventions offer opportunities to build public support for legislative change which could facilitate broader anti-stigma efforts; however, the role of criminalisation in legitimising stigma was not addressed in most interventions.

There was limited overlap in the measurement instruments used in evaluations, consistent with findings from systematic reviews of broader anti-stigma interventions (Livingston et al., 2012; Tostes et al., 2020). Items referred to opinions about drug use, people who use drugs, policies, and treatment, which authors deemed to reflect stigma (or not). Some items had questionable face validity; for example, where seeking endorsement that people who use drugs (mostly, but not always, experiencing dependence) require help or compassion. Whilst compassion is desirable in many circumstances, it is not incompatible with viewing others as weak or inferior. In some cases, authors referred to relatively narrow measures simply as 'stigma', without discussing the numerous phenomena the term refers to. These phenomena are not always correlated. For example, support for funding mental health services is not always associated with reduced desire for social distance from people experiencing mental health problems (Angermeyer et al., 2014); and as discussed, whilst biogenetic explanations of psychiatric diagnoses have reduced perceptions of blame they have also increased fear and desire for social distance (Kvaale et al., 2013).

Whilst authors likely often had more than one motivation for developing interventions, some content was suggestive of the anti-stigma agendas described by Corrigan (2018). Many interventions only discussed drug use that was deemed to be problematic, emphasising the benefits of treatment and recovery. These elements were consistent with a 'service agenda', aiming to facilitate treatment access. Sometimes where interventions were seemingly motivated by reducing drug use and dependence more broadly, people who use drugs were described in negative terms, which may compound negative stereotypes as an example of Corrigan's stigma effect (Corrigan, 2018). Some interventions expounded the harms of criminalisation and advocated for the human rights of people who use drugs; with instrument items endorsing the right to use drugs, and criticising coercive policies. These elements were consistent with a 'rights agenda', intended to promote equitable life opportunities. Finally, a minority of interventions described people who use drugs with productive professional and social lives, as well as positive experiences of drug use. These elements were consistent with a 'self-worth' agenda, potentially intended to promote pride amongst people who use drugs.

Future directions

Interventions commonly referred to drug dependence as a disease. However, there is spirited debate in the academic literature as to whether this characterisation undermines or perpetuates stigma (Heather et al., 2022). Dependence can otherwise be framed as a normal response to trauma (Maté, 2022) and socioeconomic stress (Alexander, 2022); a learned behaviour (Lewis, 2022); the exploitation of naturally occurring brain processes (D. Ross, 2022); or as motivation responding to multiple stimuli (West & Brown, 2013). Drug use can also be considered on a spectrum, with an arbitrary delineation between dependent and non-dependent use (Morris, 2022). An emerging literature explores associations between beliefs in different models of addiction and levels of public stigma. There is some evidence that endorsement of a psychological model of dependence (characterising drug dependence as a coping mechanism in response to other problems) is associated with less stigmatising views than endorsement of a disease model (Rundle et al., 2021, 2024). Further study is still needed to ascertain how best to frame messaging about drug dependence to reduce public stigma amongst different populations.

A recent systematic review identified 18 instruments to measure substance use stigma that had been subject to some degree of (mostly limited) psychometric evaluation (Spata et al., 2024). Our review demonstrates numerous other measures of substance use stigma that have not been psychometrically evaluated. In general, there are stark inconsistencies in approaches to measure stigma, with studies focusing on specific attitudes or stigma constructs and ignoring others, which might be impacted to different degrees, or in contrary ways. Future work comparing anti-stigma interventions would benefit from more

consensus on evaluation approaches. This should likely include multiple instruments (which have been psychometrically assessed) to account for a wider range of the phenomena associated with 'stigma'.

Limitations

That we are aware of, this is the first scoping (or systematic) review of mass media interventions intended to reduce stigma towards people who use drugs. Our review closely adhered to methodological and reporting guidelines for scoping reviews (Tricco et al., 2018). There were deviations from the protocol (Appendix III), including iterative adaptions to inclusion criteria and data charting as our understanding of complex concepts evolved, including 'stigma' and 'mass media'. We note different definitions of mass media, which would have indicated narrower inclusion criteria (Potter, 2013). We made the decision to consider a broad definition as per previous systematic reviews (Bala et al., 2008; Brinn et al., 2010; Clement et al., 2013) allowing inclusion of more interventions with transferrable content.

We did not undertake a census of interventions but rather reviewed interventions with academic reports about their development or evaluation, given we were interested in both intervention content and how authors conceptualised and measured stigma. The medical focus in the interventions we reviewed may reflect the greater likelihood that authors from medical disciplines publish their work in academic journals. There are numerous relevant campaigns without academic reports (Frkovich et al., 2022) and there may be more community-led anti-stigma campaigns. Data on authors' conceptualisations of stigma only reflect published work, and unpublished preparatory work may include more theoretical insights.

Conclusion

We found inconsistencies in approaches to reduce and measure stigma; with authors often overlooking the complexity of the concept and the range of phenomena it refers to. Some interventions described people who use drugs in markedly negative terms, potentially perpetuating negative stereotypes, and demonstrating that a stated desire to reduce stigma is not incompatible with views that others might consider stigmatising. Inconsistencies in intervention content likely reflected the different agendas of intervention developers (Corrigan, 2018). Anti-stigma campaigns are attempts to influence how audiences make sense of the world - of drug use, drug dependence, and people who use drugs. In doing so they attempt to shape the world, in ways that reflect the values and backgrounds of intervention developers. It is therefore vital that people who use drugs are actively involved in developing campaigns that are directly about them and the worlds in which they live. This is of particular importance to ensure that intervention content is suitably nuanced, and that it does not perpetuate negative stereotypes of people who actively use drugs.

CRediT authorship contribution statement

Adam Holland: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Tom P Freeman:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **James Nicholls:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Chloe Burke:** Writing – review & editing, Validation, Methodology. **Joshua Howkins:** Writing – review & editing, Validation. **Magdalena Harris:** Writing – review & editing, Methodology, Conceptualization. **Matthew Hickman:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Angela Attwood:** Writing – review & editing, Supervision, Conceptualization. **Vicky Carlisle:** Writing – review & editing, Conceptualization. **Peter Krykant:** Writing – review & editing. **Olivia M Maynard:**
Writing – review & editing, Validation, Supervision, Project administration, Methodology, Funding acquisition, Conceptualization.

Supplementary materials / Data Access Statement

Supplementary material associated with this article, including intervention level data, can be found in the online version, at doi:10.1016/j.drugpo.2024.104543.

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