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ORIGINAL ARTICLE

Does Online Newsmedia Portrayal of Substance Use and Persons with Substance Misuse Endorse Stigma? A Qualitative Study from India

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Abstract
Media provides and shapes public knowledge, perceptions, and attitude towards people with substance misuse. We aimed to explore the content and specific themes of Indian online news articles on substance use or persons with substance misuse. We followed an exploratory qualitative design to analyze online news media reports published between July 1 2020 and June 30 2021. Hundred articles met the selection criteria. Our content analysis was based on a checklist. Thematic analysis was done by the coding, categorization, and theme generation after meticulous data immersion and triangulation. Sixty percent of articles had pessimistic headlines and portrayed substance use or persons with substance use negatively. Fifty-one percent articles were on alcohol. Twenty-seven percent articles focussed supply reduction, whereas only 5% positively discussed the role of treatment. We identified seven themes. Most frequent themes were legal-criminal aspects of substance use ($n=39$), psychosocial and health hazards of substance use ($n=30$), and propagation of public stigma ($n=25$). Two other prevalent themes were the business and marketing of alcohol ($n=20$) and sociocultural aspects of substance use ($n=9$). The theme, treatment strategy, appeared in only five articles. There is an urgent need for media guidelines for responsible reporting of substance misuse. We suggested a set of recommendations for media reporting.

Keywords Media report · Stigma · Qualitative study · Substance misuse

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Globally, more than 5% of the overall disability adjusted life years are attributable to alcohol and drug use (Degenhardt et al., 2016). However, only about 7% and in low-middle income countries 1% of persons with past-year substance use disorder (SUD) receive minimally adequate treatment (Degenhardt et al., 2017). This enormous treatment gap is contributed by poor awareness regarding SUD and perceived treatment need, difficult treatment access, and low treatment retention (Degenhardt et al., 2017). Public and internalized stigma reinforce these three barriers to receive and continue treatment.

Media provides and shapes public knowledge, perceptions, and attitude towards people with substance use (Committee on the Science of Changing Behavioral Health Social Norms, 2016). It may also influence policy decisions by changing public perceptions and attitudes of policymakers. Media may propagate stigma by exaggeration, misinformation, distortion, and sensationalism (Montagne, 2011). On the contrary, Australia's Beyond Blue anti-stigma media campaign showed media might also improve understanding, awareness, and treatment seeking for mental illness (Jorm et al., 2005). Research from the UK showed a reduction in the number of stigmatizing articles in 2019 compared to 2008, which as per the authors was a result of anti-stigma programs to improve the quality and coverage of mental illness (Hildersley et al., 2020). However, a Cochrane review showed mass media interventions might reduce prejudice of mental illness, but evidence was insufficient to determine its role in reducing discrimination. The review also highlighted a glaring lack of evidence from the low-middle income countries (Clement et al., 2013). Nevertheless, regulation and quality control of the mass media could be a critical target to destigmatize mental illness and substance misuse (Henderson & Thornicroft, 2009; Whitley & Berry, 2013).

Print and online media analysis showed media often associates mental illness with violence and crime, and seldom focuses on positive points such as recovery and would rather quote bystanders than mental health experts (Corrigan et al., 2005; Li et al., 2021). Similar negative portrayal is also seen in media reporting of suicide (Committee on the Science of Changing Behavioral Health Social Norms, 2016). However, research on the news-media reporting of substance use is limited. United Kingdom's Drug Policy Commission published a content analysis of the media reports from nine major UK newspapers on drug use and persons with drug use. The report showed a skewed coverage of drug use within the criminal justice context and as life-style use; use of stigmatizing labels was frequent and there was little focus on the informative content. Moreover, the report did not observe any significant trend in the amount and nature of coverage (UK Drug Policy Commission, 2010). Content analysis of Australian newspapers too showed law enforcement news dominated the coverage (Hughes et al., 2011; Lancaster et al., 2011). Limited research has also focused on the portrayal of substance use in television series, movies, YouTube videos, and single drug prevention campaign (Montagne, 2011). These studies performed media analysis of reports from North America and Europe (Montagne, 2011). These reports found that media portrayal for drugs use is sensational, melodramatic, dominated by moralistic understanding, commercial needs, and rather divorced from the science-based understanding of addiction (Niesen, 2011; Stephens, 2011). Study from the Czech Republic showed supply reduction and crime-related news dominate the drug-related news (Belackova et al., 2011). Therefore, there is a paucity of research on the representation of drug use and persons with drug use through online news media and media reports from low-middle income countries (LMIC).

India has an estimated 57 million persons with alcohol misuse and nearly eight million with opioid misuse. The estimated number of people with alcohol and opioid use is nearly three times more than these. Only about 10–15% of people with substance misuse receive any help. Stigma, as in other places, is thought to be a major barrier in accessing treatment

(Ambekar et al., 2019). There is no published literature from India on the newspaper portrayal of substance use. However, a content analysis showed Indian movies glamorized alcohol consumption (Rao et al., 2020). Our group analyzed Indian news media reports of suicide and mental illness. We observed more than 80% of the media reports deviated from the suicide reporting guidelines (Raj et al., 2022). Analysis of reports on mental illness showed nearly a third of the articles had stigmatizing content and portrayed persons with mental illness as violent, unpredictable, and unreliable (Raj et al., 2021).

We hypothesize that in the absence of any quality control measures for substance-related media coverage, negative, distorted, and one-sided media portrayal would dominate Indian news media.

We aimed to explore the content and specific themes of Indian online news articles on substance use or persons with substance misuse. We would suggest a preliminary set of recommendations for media reporting on substance use based on our observations.

Methods

Study Design and Data Sources

We followed an exploratory qualitative design to analyze online news media reports published between July 1, 2020 and June 30, 2021. We searched Google News, India to retrieve news articles because (a) the major print news media in India has digital versions and (b) the number of Internet users in India is the second largest in the world, and 98% of Indian Internet users use Google as their search engine. We chose articles published in English because (a) although the Constitution of India recognizes 22 different languages, English is an official language across Indian states; hence, we believe results of English media reports would be more generalizable than reports from individual regional languages and (b) analysis of English media reports would have a greater appeal owing to the ease of communication to the international audience and implications for other countries.

Search Strategy

We designed our search strategy to include various substances (except tobacco), persons with substance use, complications, and treatment/rehabilitation, special population, and criminal/legal aspects. The selected keywords were based on consensus among authors; all of them have more than 5 years of experience in addiction psychiatry. We have provided the list of keywords in Table 1. We reviewed the first 30 articles returned by each keyword for possible inclusion because beyond that we are likely to find duplicate or irrelevant reports, and reports less likely to influence public perception (Raj et al., 2022).

Eligibility Criteria

We included reports that discussed about any substance or persons with substance use. Articles that contained expert opinion and commentary on any other aspects of substance use were also included. We excluded articles on only tobacco use, published in non-Indian newspapers, articles with restricted access, and articles with a predominant focus on suicide, homicide, and mental illness, where substance use was mentioned in passing.

Table 1 Search keywords

1	Substance related	**English names—**alcohol, heroin, cannabis, opium, wine, beer, marijuana, liquor **Street names-** weed, joint, sleeping pills
2	Newer psychoactive substance related	Meow meow, mephedrone, spice
4	Complications related	Addiction, drunk driving, chain snatching, drug and violence, alcohol and violence, partner violence, domestic violence, mental health and drug use, mental health and alcohol use, suicide and drugs, drug overdose
5	Treatment related	Alcoholics anonymous, narcotics anonymous, opioid substitution therapy
6	Special population related	Women substance, young drinker, homeless and drugs, drug use slums
7	Legal related	Narcotic Control Bureau, Hooch tragedy, homemade liquor

Article Selection

We screened 1050 news articles. We excluded 774 articles. The reasons for exclusion were articles unrelated to drug and alcohol use ($n=457$), published in non-Indian news media ($n=156$), subscription-based articles ($n=158$), and articles with an exclusive focus on tobacco use ($n=3$). Out of the 276 articles, we further removed 176 duplicate articles. Finally, hundred articles were eligible. Please see Fig. 1 for the flow diagram of article search and selection.

Data Extraction, Analysis, and Quality Assurance

Authors CN and NS extracted and coded the data on a predesigned Statistical Package for Social Sciences 16.0 (SPSS). We extracted descriptive characteristics of the news articles. Then, we evaluated each report based on a checklist designed for understanding media portrayal for mental illness (Whitley et al., 2017). We adapted this checklist to use it in the context of substance use. For the detailed checklist, please see Panel 1. Our group has reasonable experience in performing thematic and content analysis of newspaper articles (Ghosh et al., 2020; Raj et al., 2021, 2022). The senior authors (AG) applied the checklist on the first ten articles and trained CN and NS so that they could perform the descriptive

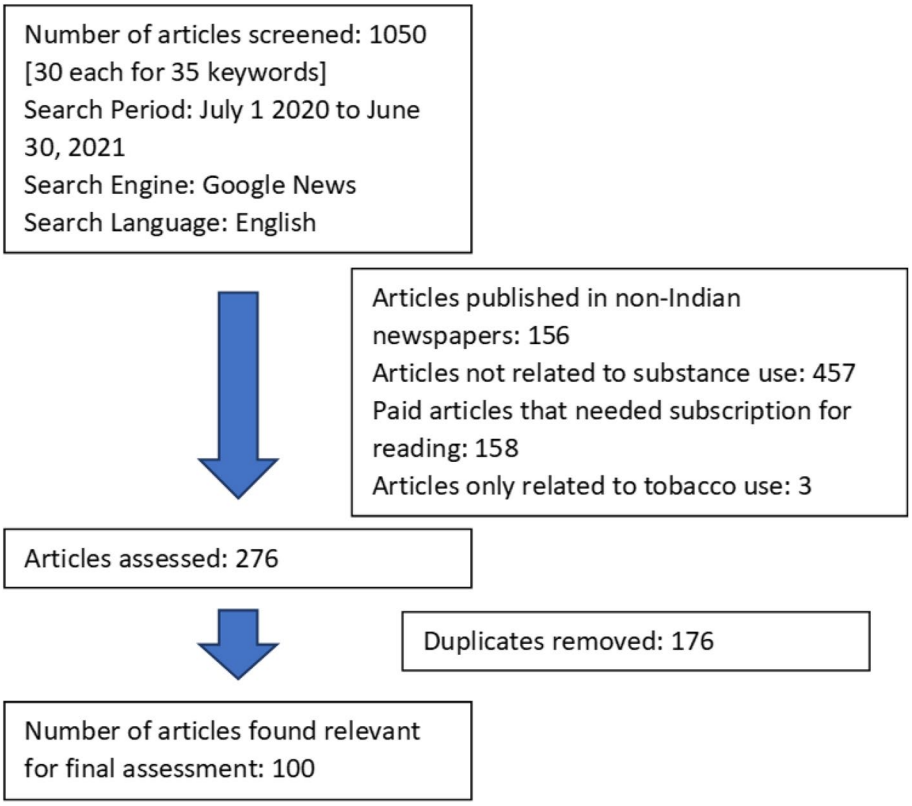

Fig. 1 Flow diagram of article search and selection

content analysis of the 90 articles. There was little chance of ambiguity in applying the checklist because the checklist was largely fact-based. Only three questions of the checklist (overall quality of reporting, quality of headline, and representation of images) required subjective judgment. Ten articles, randomly chosen were coded by both CN and NS. The item-wise inter-rater agreement (for those three abovementioned variables) ranged from 0.85 to 0.92. CN and NS then independently performed content analysis of 40 articles each. The investigators used to have WhatsApp calls to resolve any ambiguity in descriptive coding. AG resolved any discordance of coding between CN and NS. The news links of individual reports were added to the separate word document. Each included information was given the same number as on the SPSS sheet to facilitate discussions on coding, cross checking, and maintaining data quality (SPSS Inc, 2007).

Panel 1

Items for Descriptive Analysis

Date of the story

Form of newspaper—online only, online plus print version available

Source of newspaper article—national, regional (from which region?)

Language—English or Hindi

Type of news—daily news, perspective, editorial

Number of words in the news item

Overall tone of news item

- Overall optimistic: Articles discussing about the disease concept and its treatment,

recovery from substance use disorder, understanding sociocultural factors, and dismisses personal responsibility or blaming

- Overall negative or pessimistic: Articles uses stigmatizing language, portray and propagate negative stereotypes, focus on the moral and legal aspects of substance use disorder without talking about the treatment
- Neutral: Provide data on surveys

Tone of the headline

- Optimistic: Spreading awareness, providing potential solution right in to the title
- Negative: Use of stigmatizing language in the title, melodramatic, overexaggerated titles for sensationalism
- Neutral: Neither of the above

Images included in news item—Yes/No

(if yes- Glamorizing (adolescents in party setting drinking & appearing cheerful, good looking people with costly apparels/posh surroundings and using drugs), Stigmatizing (person snatching chain, women using drugs with moralistic/judgmental quotes over the image or in footnote), concerning (patient lying on floor unconscious with drugs and injections around)

Legal/supply reduction

Is danger, violence, or criminality, narcoterrorism linked negatively to addiction?—Yes, No, Neutral

News story talks about smuggling, trafficking, confiscation, seizure—Yes or No

News story talks about aspects of NDPS—Yes/No

Epidemiology

Articles related to community surveys—regional/national, online surveys/prevalence data—Yes/No

Scientific evidence on prevention and treatment

Articles related to treatment modalities, new research on treatment or prevention—Yes/No

Is recovery/rehabilitation a major theme?—Yes, No, Neutral

(Emphasis of rehabilitation- its meaning, availability/shortage of rehabilitation services, information regarding the means to avail these services, emphasis on concept of recovery)
Mastery class (account of recovery from substance use disorders)
Disease/illness concept of addiction
Are mental health experts/people with substance use disorders quoted in the text either directly or paraphrased?—not quoted, quoted positively, quoted negatively, quoted mixed
Are SUD interventions (e.g., medicine or therapy) discussed in the story?—not discussed, discussed positively, discussed negatively
Emphasis on biopsychosocial model of substance use—Yes or No
Service-related shortage of resources—doctors, medications, counselors, treatment facilities, Quality of treatment/care (meeting minimum standards, human rights in treatment facility) Yes or No
Others
Is there an option to leave comment? Yes or No; If yes, Tone of the comments synchronous with overall tone of news item? Yes, No, Mixed

After the checklist-based descriptive content analysis, thematic analysis was done by coding, categorization, and theme generation after meticulous data immersion. We did not use any theoretical framework for data coding; rather, we conducted a thematic analysis based on the emerging semantic and latent themes (Braun & Clarke, 2006). AG performed inductive coding for the first 30 selected articles and generated a comprehensive coding frame with definitions and examples to guide the coder in identifying the main themes and subthemes. Each characteristic was coded as being either present (1) or absent (0). Ten articles were coded by both NS and CN. We did not calculate any inter-rater agreement between the coders, but there were minor discrepancies that were resolved by AG. NS and CN, then, independently performed deductive coding for 30 articles each. However, any additional codes, discovered even during deductive coding were documented and discussed among authors. All the coding was done manually in a Microsoft word document. Once all the codes were finalized, themes and sub-themes were generated by triangulation.

Results

Content Analysis

Two-thirds of the news articles were published in national online news platforms; among the state-wise news articles, there was highest number of articles from New Delhi. Majority (77%) of the articles were daily-regular news. The modal number of words in an article was 112.

Nearly 60% of the articles had pessimistic headlines and portrayed substance use or persons with substance use in a pessimistic way. Any visual representation was present in 59 articles; seven (11.9%) and 3 (5.1%) of these images, glamorized and stigmatized, respectively, persons with substance use problems. Our interpretation of glamorized images was based on the representation of drug or alcohol use in a "positive" light or depiction as means of fun and relaxation (e.g., a movie star holding a drinking glass, people dancing in an alcohol bar and having fun).

The content analysis as per the checklist showed only 16 articles quoted any survey data, and substance use experts were quoted in only 19 articles. Alcohol ($n = 51$) was the most common substance discussed, followed by cannabis ($n = 15$), and opioids ($n = 10$). There was only one article on synthetic cathinones. It was also found that only

a handful of articles (14%) talked about substance use in various special populations like children and adolescents, migrants, and women. Articles seldom discussed the disease concept of addiction ($n=10$) and account of personal recovery ($n=4$). Interventions for substance use problem was also discussed rarely ($n=10$); when discussed, half of the articles showed interventions in negative lights (e.g., not effective, degrading, inhumane). The articles ($n=34$) that highlighted any prevention or treatment measures largely focussed on supply reduction ($n=27$, 79.4%). A substantial minority ($n=18$) linked substance use with danger, violence, and criminality. Only five articles talked about shortage or quality of care for persons with substance misuse.

Table 2 shows the descriptive characteristics of the news articles and checklist-based content analysis results.

Thematic Analysis

Details of the generation of codes and themes and corresponding article excerpts have been provided in Table 3. We discovered following seven main themes: (a) legal and criminal aspects of substance use, (b) psychosocial and health hazards of substance use, (c) propagating public stigma for substance use, (d) business and marketing of alcohol, (e) articles on epidemiological data, (f) sociocultural aspects of substance use, and (g) treatment strategies. Among these, propagating public stigma is a latent theme, and others are semantic themes. Legal and criminal aspects of substance use comprised of the following codes: texts linked to violence, dangers, and criminality of persons who use drugs or alcohol, texts on smuggling, trafficking, confiscation, and drug seizure, acts governing drugs and drug users, and on cannabis legalization. Codes such as the harmful consequences of alcohol, tainted alcohol, lifestyle use of alcohol, suicide, and homicide associated with substance use were combined to frame the theme, psychosocial, and health hazards of substance use. The following codes, i.e., use of stigmatizing language (e.g., stoner, addict, sin good), use of stigmatizing labels to persons who use drugs or alcohol (e.g., jobless), focusing on the conspiratorial angle of drug use, and seeing drug use as law-and-order problem were combined to generate the theme of propagating public stigma for substance use. The theme business and marketing of alcohol comprised of two codes: business promotion of alcohol and online platform for alcohol sale. International, national, and regional drug use survey data was categorized as the theme, epidemiological data. The theme, sociocultural aspects of substance use subsumed the following codes: sociodemographic pattern of substance use, and alcohol use among women. Finally, role of treatment, awareness, and community outreach were categorized as treatment strategy as a theme. We provided examples of the article excerpts for the corresponding codes in Table 3.

Frequency of Codes and Themes

The most commonly portrayed theme was legal aspects of substance use ($n=39$). There were 25 articles with themes that may propagate public stigma; a large proportion of these articles ($n=20$, 80%), used stigmatizing language; others identified an individual or a specific group of individuals as "drug users." There were 20 articles directly or indirectly promoting alcohol business. Thirty articles contained themes of psychosocial and health

Table 2 Description of the reviewed news articles

Content analysis	Frequency (%) [$N = 100$]
Descriptive characteristics	
Source of news article	
Online and printed newspaper	40 (40)
Online only news source	60 (60)
Type of news article	
National	67 (67)
Regional	33 (33)
New Delhi	8
Punjab	5
Chandigarh	3
Uttar Pradesh	3
Tamil Nadu	3
Hyderabad	2
Madhya Pradesh	2
Maharashtra	1
Kerala	1
Jharkhand	1
Himachal Pradesh	1
Gujarat	1
Chennai	1
Assam	1
Nature of news article	
Daily news	77 (77)
Perspective	23 (23)
Number of words in the news item	Mean = 561; Mode = 112 (Range = 60–3484)
Article having option to leave comment	15 (15)
Comment present on the article	1 (6.6)
Quality of the media portrayal	
Overall quality:	
Optimistic	34 (34)
Pessimistic	60 (60)
Neutral	6 (6)
Quality of the headline:	
Optimistic	27 (27)
Pessimistic	61 (61)
Neutral	12 (12)
Images present in:	59 (59)
Stigmatizing	3 (5.1)
Concerning	16 (27.1)
Glamorizing	7 (11.9)
Neutral	33 (55.9)
Content analysis of media report	
Surveys quoted in:	16 (16)
National survey	13 (81.2)
Regional survey	2 (12.5)
Online survey	1 (6.25)

Table 2 (continued)

Content analysis	Frequency (%) [$N=100$]
Experts on SUD quoted/paraphrased in articles	19 (19)
Quoted positively	7 (36.8)
Quoted negatively	4 (21.05)
Quoted in a mixed tone	8 (42.1)
Type of substance discussed	
Alcohol	51 (51)
Multiple (> 3 substances used)	16 (16)
Cannabis	15 (15)
Opioid	10 (10)
Sleeping pills	7 (7)
Solvents	1 (1)
Type of opioid discussed in article	
Pharmaceutical	1 (10)
Heroin	9 (90)
NPS discussed in article	1 (1)
Type of NPS	Synthetic cathinone
Prevention and treatment modality discussed in the article	34 (34)
Supply reduction	27 (79.4)
Demand reduction	6 (17.6)
Harm reduction	1 (3)
No discussion on preventive measures	41 (54.7)
Interventions for SUD discussed	10 (10)
Discussed positively	5 (50)
Discussed negatively	5 (50)
Danger, violence, criminality, narco-terrorism linked to substance use	18 (18)
Topic related to smuggling/trafficking/confiscation/seizure	18 (18)
Topic related to punishment/imprisonment related to NDPS	18 (18)
Articles related to mastery class/accounts of recovery from addiction	4 (4)
Disorder concept of addiction discussed in article	10 (10)
Emphasis on biopsychosocial model of SUD made in article	10 (10)
Article discussing service-related shortage of resources (medications/counselors/treatment facilities) or quality of treatment	5 (5)
Article discussing medical complications	20 (20)
Opioid overdose	2 (10)
Alcohol poisoning	7 (35)
Suicide under the influence of substance	2 (10)
Other medical/health-related complications due to substance	9 (45)
Article discussing family/social complications of substance use	7 (7)
Article discussing about SUD in special population	14 (14)
Children and adolescents	1 (7.14)
Females	7 (50)
Migrants/slum dwellers	2 (14.2)
Street children	3 (21.4)
Homeless	1 (7.14)

SUD, substance use disorder; *NPS*, new psychoactive substances; *NDPS*, Narcotic Drugs and Psychotropic Substances Act

hazards. The least prevalent theme was treatment strategies for substance use disorders ($n=5$). For detailed frequencies of themes and codes, please see Fig. 2.

Discussion

We analyzed 100 online news articles published during a 1-year study period. The articles represented national as well as regional news from 14 of the 36 Indian states and Union territories of India. Therefore, we had a reasonable representativeness of our study sample. Nearly 80% were regular news articles and the modal word count was just over 100. Regular news articles are largely topical, and there is some evidence to suggest articles of less than 500-word count are more likely to be shared with others (NewsWhip, 2013).

The salient findings of our study are (a) the most and least frequently encountered themes are the supply reduction, legal, and criminal aspects of substance use, and treatment strategies, respectively; hence, there is a disproportionately higher focus on criminalization, (b) the content analysis reveals that one in four articles uses stigmatizing language, or language that might propagate personal blame, and breached anonymity; thematic analysis identifies the stigmatizing words and phrases used to describe persons with substance misuse, (c) the content analysis further shows that only one in ten articles discusses the disease concept of SUD and one in 20 articles are about personal recovery or effectiveness of treatment; on half the occasion interventions are discussed in negative lights, and (d) one in five articles promote alcohol business either directly (e.g., lowering of minimal age of drinking, discussing alcopop, use of glamorizing photographs) or more subtle ways. Therefore, our results are in line with the initial hypothesis of a disproportionate media focus on the association of drug use and criminal justice, stigmatizing and negative representations of persons with drug misuse, and little attention to the scientific and medical aspects of drug use. However, we have also discovered a promotional role (especially for alcohol) of online news media.

Comparison of the descriptive content analysis and thematic analysis reveals the following: (a) The two most frequent themes reflect the "alarmist fear and risk framing" (sensational consequences of substance use that would make a headline, e.g., suicide, homicide, violence) and "moral or legal" (drug and drug users are in conflict with laws) aspects of drug use and drug users (Blood et al., 2003). The content analysis with 60% articles with a pessimistic headline, 27% with an exclusive focus on supply reduction, and nearly 20% discussing about drug user's conflict with law complement the thematic analysis. (b) Treatment strategy being the least frequent theme and less than 10% articles on demand reduction and treatment in the content analysis suggest that the media reports pay little attention to discussions around prevention and treatment of substance use. (c) Furthermore, thematic analysis complements the checklist-based descriptive analysis by adding new themes, propagation of public stigma, and promotion and marketing of alcohol. We, therefore, advocate future studies should also do both thematic and content analysis because these methods complement each other.

Criminalization of drug use is said to be a fundamental element and driver of structural stigma which at one end, might deter an individual from seeking professional help for substance misuse, and at the other end, might shape the care providers, policymakers, and societal views towards persons with substance misuse, thereby preventing access to evidence-based treatment and harm reduction strategies (Fischer, 2020). By overemphasizing legal and supply reduction and underplaying treatment and harm

Table 3 Thematic analysis of the media reports

Article excerpts	Code	Subtheme	Theme
"While alcohol may make you feel warmer, it actually reduces your body temperature and compromises your immunity if you then venture out into the cold, experts say." *Indian Express*, Jan 1, 2021	Harmful consequences of alcohol	-	Psychosocial and health hazards of substance use
"First of all, consumption of alcohol is not advisable at all in any condition. But, drinking alcohol can reduce your body's ability to build immunity in response to a virus," Satish Kaul, HOD and Director, Internal Medicine, Narayana Hospital, Gurugram was quoted as saying by IANS." *SNS,* June 20, 2021			
"…the tragedy that has been unfolding in Punjab since Wednesday and which has already led to deaths of 98 people took place due to consumption of spurious liquor." *Indian Express,* August 2, 2020	Harmful consequences of tainted alcohol		
"No safe dose of alcohol for the brain was found. Moderate consumption is associated with more widespread adverse effects on the brain than previously recognized." *The Guardian,* May 19, 2021	Portrays even lifestyle use of alcohol as a health hazard		
"XXXX, an addict, 24, mixed sleeping pills in the food items consumed by the nine victims who attended a birthday party at Gorrekunta village in Geesukonda mandal of Warangal on May 20 night. After the victims fell unconscious, he pushed them one by one into adjoining well." *Times of India,* October 20, 2020	Substance use in homicide		
"Police rushed to the spot and shifted her to the local government hospital, where she was declared brought dead. "Preliminary investigation revealed she had consumed a large number of sleeping pills," the police said." *Hindustan Times,* February 24, 2021	BZD use in suicide		
"Three brothers addicted to alcohol died after they consumed hand sanitizer in Madhya Pradesh's Bhopal. The tragedy unfolded on Sunday after the three men bought a 5-L can of sanitizer to satisfy their craving, as they couldn't procure liquor during the lockdown." *India News,* March 24, 2021	Difficulty in acquiring substance/treatment during lockdown		
"..it is a unique situation here as all the liquor shops in the three mandals are closed due to Covid-19 restrictions. There are a large number of liquor addicts in the area who drink daily. A beggar gave them the idea of consuming sanitizers. While gel sanitizers are costly, the liquid is very cheap compared to liquor." *Indian Express,* August 4, 2020		Effect of Covid-19-related lockdown on substance use	
"We estimate, and preliminary information is telling us, that there may be an increase in people with mental, neurological and substance abuse related conditions that will need attention," Kestel said. But WHO had no data on life-threatening consequences including any higher suicide rates, epileptic seizures or unmanaged opioid dependence that could lead to overdose, she said" *Times of India,* October 6, 2020			
"There have been a staggering number of suicides as well, caused by fear of infection, loneliness, lack of freedom of movement, and alcohol withdrawal during the lockdown," the group of activists and academics said in a release." *The Hindu,* August 3, 2020			

Table 3 (Continued)

Article excerpts	Code	Subtheme	Theme
"Many **stoners** claim to feel more aligned with their thoughts and the Lord Shiva himself after consuming 'soma' (intoxicant)." *Times of India,* October 13, 2020 "This is one of our social hypocrisies—we know it is prevalent, we know **everyone who does it is not an addict in need of medical attention**, and yet we don't question the need for it to be illegal." *The Print,* September 4, 2020 "The police official added that the accused had confessed to procuring the contraband from Jharkhand. "He himself **is a drug addict** and turned to drug peddling around a year ago to fund his addiction, but was never caught," he added." *Hindustan Times,* April 3, 2021 "The NCB chief said the survey found that **about 28 lakh people in the country are "addicted" to heroin** and the per day consumption of heroin is about 1 tonne." *India Today,* December 30, 2020 Good news for **tipplers** in Delhi *Financial Express,* June 1, 2021 The government may further increase levies on "**sin goods**", **such as alcohol and tobacco**, in the Union Budget 2021 *India Today,* February 1, 2021	Use of stigmatizing language	-	Propagating public stigma
"The untimely and tragic death of Bollywood actor XXXX has led an investigation into a possible "drug angle" in the case by the Narcotics Control Bureau. Bollywood actor XXXX has been arrested in connection with the case after the NCB found guilty of allegedly procuring cannabis for XXXX. Now, several leading actresses such as XXXX, XXXXX and XXXXX are being questioned by the NCB." *News18.com,* September 26, 2020	Conspiracies in Bollywood related to drugs		
"Many jobless people who cannot afford to buy drugs may get lured into the trade so that they can get their fix as part of the consignment." *India Spend,* July 24, 2020 "The arrested persons were drug abusers, **including drug addicts**, big and small traffickers, and peddlers. They were a mix of **students, homeless people, frustrated, jobless, and depressed citizens** from all sections of the society." *The Print,* December 19, 2020 "The victims are generally the labor community, working with local bodies, small factories, sweepers, etc. The survivors, who are being treated at government hospitals in these towns, are still complaining of uneasiness, poor vision, shivering and giddiness." *India Today,* August 4, 2020	Identifying a group as drug users ("jobless," "frustrated," "homeless"		
"Mr Singh also underlined the need for better collaboration between the special task force, police, and Intelligence wing to eliminate drugs from the state." *All India Press Trust of India,* June 27, 2021	Drug use as law-order problem		

Table 3 (Continued)

Article excerpts	Code	Subtheme	Theme
"XXXX an addict, 24, mixed sleeping pills in the food items consumed by the nine victims who attended a birthday party at Gorrekunta village in Geesukonda mandal of Warangal on May 20 night. After the victims fell unconscious, he pushed them one by one into adjoining well." *Times of India,* October 20, 2020 "XXXX said the money generated through illicit drug trade is "huge" and it is not only for taking care of the peddlers but it is "definitely" being used in some other organized crime. He said drug-related crimes are not related to only one state as the criminals have national and international networks and "unless we coordinate, the menace will not go." *India Today,* December 30, 2020	Linked to violence, danger, and criminality		Legal aspects of substance use
"The Narcotics Control Bureau (NCB) has seized nearly 234 kgs of opium from Rajasthan, the "largest" seizure this year yet, and arrested two people on charges of drug trafficking, the agency said on Friday." *All India Press Trust of India,* July 25, 2020 The fourth highest seizure of opium in 2018 was reported from India, after Iran, Afghanistan, and Pakistan, according to the latest World Drug Report of the United Nations Office on Drugs and Crime (UNODC) *Times of India, July 6, 2020*	Smuggling, trafficking, confiscation, and drug seizure		
"The Central government has decided to rope in the private sector to commence production of concentrated poppy straw from India's opium crop to boost their yield of alkaloids, used for medical purposes and exported to several countries." *The Hindu,* April 7, 2021 "A committee set up the Delhi government has recommended lowering the legal drinking age in the national capital." *India TV News Desk*, December 30, 2020	Substance legal act related		
"Cannabis transaction is largely illegal and strictly controlled in India. But now, the United Nations has decided to remove cannabis and cannabis resin from the list of dangerous narcotic substances. And, India voted in favor of the decision." *Indian Express,* December 6, 2020	Cannabis legalization		
"Women from Assam consume much more alcohol than their counterparts across the country, according to the findings of a recent survey released by the Union Ministry for Health and Family Welfare (MoH&FW)." *Hindustan Times*, October 28, 2020	International/national/regional survey data		Epidemiological data

Table 3 (Continued)

Article excerpts	Code	Subtheme	Theme
"Indian wines are perceived as "better value for money" by cost-conscious consumers who often find imported wines a bit expensive. Thus, despite a similar awareness of wines from India (59 percent) and France (58 percent) among wine drinkers in India, a higher proportion of Indian drinkers consume domestic wine." *Indian Briefing*, May 26, 2021	Business promotion of alcohol		Business and marketing
"Flipkart Starts Selling Alcohol In India; Aims To Expand Online Alcohol Delivery" *Knowleindia.com,* August 16, 2020	Online platform for alcohol sale		
"Women from Assam consume much more alcohol than their counterparts across the country, according to the findings of a recent survey released by the Union Ministry for Health and Family Welfare (MoH&FW)." Hindustan Times, *October 28, 2020*	Sociodemographic pattens of alcohol use Women and alcohol use		Sociocultural aspects of substance use
"Earlier, Health and Family Welfare Minister Balbir Singh Sidhu said medicines worth ₹ 70 crore were being given every year to people undergoing treatment for drug de-addiction." *All India Press Trust of India*, June 27, 2021 "Timely intervention, awareness about the issue, availability of professional help, and appropriate policies are the only way to improve the situation." *eHealth network, April 22, 2021*	Community outreach service/role of awareness and treatment		Treatment strategies

XXXX depicts name of different individuals

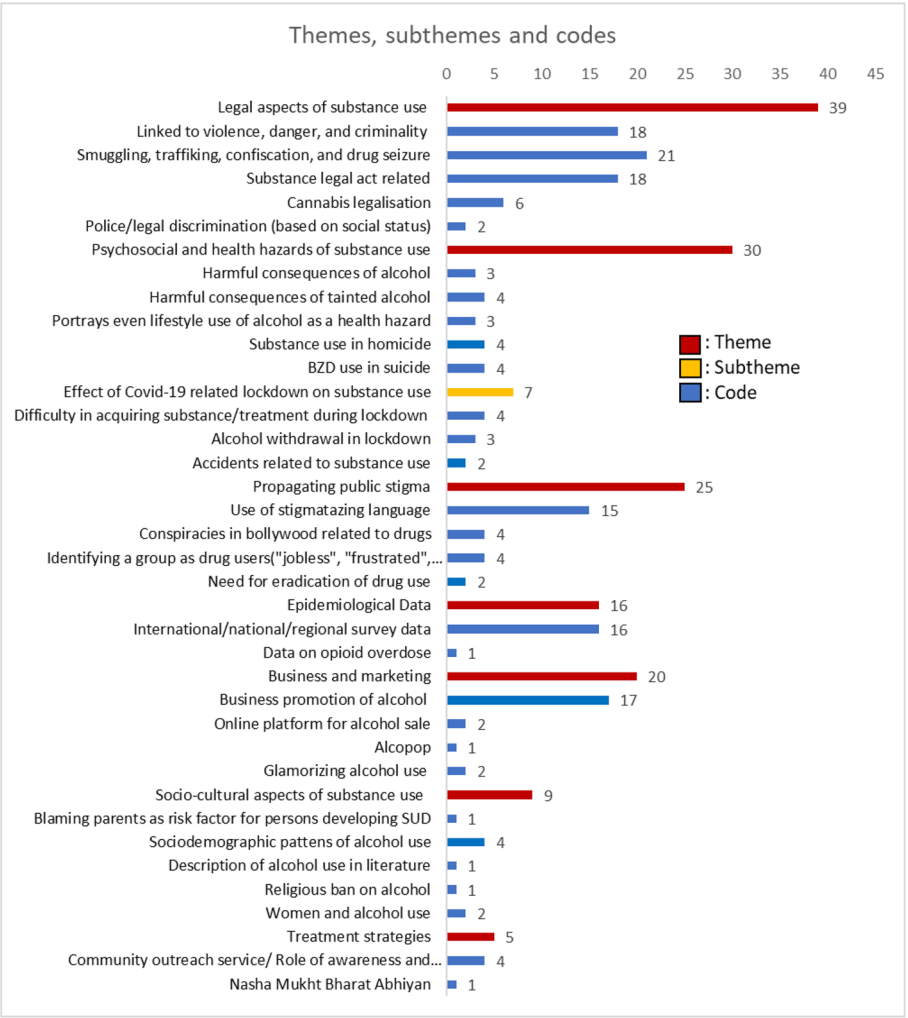

Fig. 2 Bar chart showing frequencies of appearance of themes, subthemes, and codes

reduction aspects, the media reports are reinforcing prevalent structural stigma. Expert opinion, stories of personal recovery, and emphasis on facts from surveys that might reduce public stigma, were seldom used in media reports (Corrigan & Nieweglowski, 2018). Language plays a significant role in shaping peoples' beliefs and attitudes; thus, use of negative, pejorative language maybe an inadvertent vector of propagating negative stereotypes and assumptions (Volkow et al., 2021). Use of stigmatizing and discriminatory language in media reports may shape harmful stereotypes in public care providers and policy makers (Yang et al., 2017). Finally, restrictions of promotion and advertisement of alcohol is one of the best buys in alcohol policy; it is also a cost-effective measure to reduce alcohol harm at population level, especially in countries with a

lower prevalence of drinking (Chisholm et al., 2004, 2018). We were worried to see the direct or subtle alcohol promotion in the media reports.

One-third of the articles discussed about the health and social hazards of substance use. This information might help in public awareness generation. However, use of emotive language, an individual case-based approach (rather than a data-driven discussion), and subtle blame for the familial and societal harms might inadvertently marginalize the issue and the people with substance use problems.

The finding of only a handful of articles ($n = 10$) discussing interventions for substance use is worrisome, but not unexpected. Media analyses from elsewhere also show that media reports tend to focus on "moral panic," "crisis," and attribute drug use to "crime and deviance" (Hughes et al., 2011). Perhaps, these stories feed to the need for sensationalism in media reports, whereas discussions around medical and scientific aspects of drug use may seem less popular. Even when treatment of substance use is discussed, it shows treatment in "negative" lights by focusing on the human rights violation and compulsory treatment, rather than the availability and access to evidence-based effective treatment. This too, seems to reflect the media's penchant for creating an "alarmist fear imagery" (Blood et al., 2003).

Our study has certain limitations: (a) analysis of only online English media reports might limit the generalizability of study results, (b) only a year of analysis was performed; hence, any comment on the changes in the quality of reporting over a period of time could not be made; moreover, the study period coincided with the COVID-19 pandemic; it might explain the relatively less number of drug and alcohol-related media reports; nevertheless, the qualitative aspect of the media analysis is unlikely to be influenced by the pandemic or the number of articles, and (c) two different authors performed the thematic analysis and we did not check the inter-rater agreement.

World Health Organization has guidelines for media reporting of suicide; likewise, several countries (e.g., UK, Canada) have guidelines for media reporting of mental illness. Although there is an ongoing movement to choose appropriate language while reporting substance use in scientific journals, similar efforts have not been directed to the lay-media (Volkow et al., 2021). There is an urgent need for media guidelines for reporting substance use. Based on our media analysis, we recommend (a) use of non-stigmatizing, person-first language (e.g., not using words like "tippler,"or "addict" and instead describing them as "person with alcohol use disorder" or "person with addiction," respectively), (b) preservation of human dignity and anonymity, (c) having a dispassionate, fact-based, balanced discussion on substance use, (d) writing positive stories on treatment of and recovery from SUD, and (e) restriction of direct or indirect alcohol and other substance use promotion and advertisement. The reporting guidelines may be integrated with the national plan for substance use prevention for better surveillance and commitment. There is also an urgent need to conduct awareness and capacity building courses for the media professionals. Researchers must communicate their study findings to the media to help them report and disseminate evidence-based information.

In the future, we would expect researchers to perform media analysis, for both print and online media, across different countries so that we can understand the variability in the quality of reporting, the points of concern that might increase stigma and discrimination—all these would help international agencies such as the WHO to come up with comprehensive media reporting guidelines.

Declarations

Competing Interests The authors declare no competing interests.

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