

Assessment of Epidemiological Data and Surveillance in Korea Substance Use Research: Insights and Future Directions

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Objectives: Effective data collection and surveillance of epidemiological trends are essential in confronting the growing challenges associated with substance use (SU), especially in light of emerging trends and underreporting of cases. However, research and data are scarce regarding SU and substance use disorder (SUD) in Korea.

Methods: We conducted a scoping review to identify data sources and surveillance methods used in SU research in Korea up to December 2023. This review was complemented by semi-structured consultations with experts in this area in Korea, whose feedback led to revisions of previously identified data sources and assessments.

Results: Our review identified 32 publications conducting secondary analyses on existing data to examine the epidemiology of SU and SUD in Korea. Of these, 14 studies utilized clinical databases to explore the prescription patterns of addictive substances, particularly opioids. Eleven data sources showed promise for advancing SU research; however, they face substantial limitations, including a lack of available data, missing data, the absence of key variables, the exclusion of marginalized populations not captured within the clinical system, and complexities in matching individual-level data across time points and datasets.

Conclusions: Current surveillance methods for SU in Korea face considerable challenges in accessibility, usability, and standardization. Moreover, existing data repositories may fail to capture information on populations not served by clinical or judicial systems. To systematically improve surveillance approaches, it is necessary to develop a robust and nationally representative survey, refine the use of existing clinical data, and ensure the availability of data on treatment facilities.

Key words: Substance use, Substance use disorder, Data surveillance, Epidemiology, Databases, South Korea

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INTRODUCTION

According to the 2020 United Nations Office on Drugs and Crime report, more than a quarter of a billion people worldwide use drugs, with over 35 million individuals affected by drug use disorders [1]. Substance use disorder (SUD) accounts for a significant proportion of the global disease burden [2]. The 2016 Global Burden of Disease, Injuries, and Risk Factors study estimated that drug use contributes to 31.8 million disability-adjusted life-years (DALYs) annually, representing 1.3% of all DALYs [3]. In Korea, statistics on narcotics offenders indi-

cate a potential rise in substance use, particularly within younger populations [4]. In 2022, a total of 18 394 individuals were sentenced for drug use (accounting for 46.1% of drug-related offenses), possession, trafficking, or production. This represented a 13.9% increase from the previous year, with the majority (57.1%) of those convicted being under 40 years old [4]. Law enforcement records reveal that the most commonly abused substances in Korea are psychostimulants (e.g., methamphetamine) and cannabis [4,5].

Robust substance use (SU) surveillance systems are essential for identifying individuals at risk of SUD and for understanding the factors driving SU, as well as the associated health and social issues experienced by a diverse population. These systems are critical in providing data that not only inform policymakers but also support targeted prevention and treatment interventions, ultimately improving public health outcomes related to SU. Furthermore, high-quality research on SU epidemiology depends on access to valid data sources that can capture trends in SU, its consequences, and early indicators of emerging epidemics.

The Substance Abuse and Mental Health Services Administration (SAMHSA) data surveillance system, while not yet fully established, stands out for its effective approach to monitoring substance abuse and mental health trends in the United States, as detailed in Supplementary Material 1. With a history spanning over 50 years and substantial development efforts, SAMHSA's data infrastructure serves as a valuable model due to its comprehensive scope and versatility [6]. SAMHSA underscores the necessity for an SU surveillance system to assess both ongoing and emerging trends in SU by integrating various data infrastructures. These include early warning systems [7,8], national surveys [9,10], and data on harm reduction and treatment strategies [11,12], covering a wide range of settings and aspects of SU. The types of data collected range from case reports and surveys to healthcare encounter data—such as poison control center calls, emergency department visit abstracts, electronic health records, and administrative claims—as well as mortality records, which include vital statistics and medical examiner data [13-15]. The extensive nature of these data sources enables SAMHSA to span a broad spectrum of environments, from clinical systems to households and non-institutionalized populations, including individuals in homeless shelters.

Although data surveillance systems are crucial for preventing SU, the details of SU behaviors, their scope, and their con-

sequences in Korea are not well-documented. The country has not yet implemented systematic monitoring of the health impacts and evolving trends of SU and SUD. Moreover, the existing literature lacks research summarizing and critiquing the methodologies used in SU epidemiology in Korea, as well as the data sources available to inform such research. By examining the current data on SU and comparing this information to established frameworks like those of SAMHSA, we can pinpoint the shortcomings of Korea's current system and suggest directions for improvement.

To guide future epidemiological research on SU in Korea, our objective was to identify population-level data sources utilized in peer-reviewed publications regarding the prevalence and burden of SU in the country and to evaluate the advantages and limitations of these sources. We employed established scoping review methods [16,17], which enable the exploration of research topics that have not been extensively examined in previous studies while shedding light on key issues and knowledge gaps. In keeping with current public health research terminology, we used the term “substance” when referring to “narcotics (마약)” within the Korean context. This term encompasses a diverse array of illicit or regulated substances, including opioids, psychostimulants, cannabis, and hallucinogens. In this study, we excluded alcohol and tobacco, as they exhibit distinct patterns of use that are influenced by cultural acceptance and legal status in Korea [18,19].

METHODS

On November 4, 2023 and December 4, 2023, we conducted searches of online bibliographic databases, including PubMed, Web of Science, CINAHL, and PsycINFO, for peer-reviewed published articles. Our search terms were: (“substance use disorder” OR “illicit drug*” OR “addiction” OR “narcotic*” OR “opioid*” OR “methamphetamine” OR “cocaine” OR “marijuana” OR “cannabis”) AND (“Korea”) AND (death* OR mortality OR morbidity OR epidemiology* OR incidence OR prevalence OR distribution OR statistic* OR rate*). We also searched the RISS, KISS, and DBpia databases for published Korean-language literature using equivalent search terms. Additionally, we conducted a parallel online search for relevant non-peer-reviewed reports or presentations published by government or professional agencies. Articles and reports cited in these identified documents were subsequently explored.

The complete set of search results was imported into End-

Note 20 (Clarivate Analytics, Philadelphia, PA, USA). After the removal of duplicates, a single author (MS) screened all titles and abstracts using predetermined inclusion and exclusion criteria. We included articles that provided quantitative or descriptive analysis of SU in Korea and were available in full text in either English or Korean. Studies focusing solely on alcohol or tobacco, articles not relevant to the Korean context, and review articles lacking original data on the epidemiology of SU in Korea were excluded. From the included studies, we extracted data sources, research objectives, outcome measures, key variables, and the time periods covered.

The included studies served as a basis for identifying potential data sources. These sources were then cataloged in a table, detailing the data elements, years available, population covered, public availability, and variables relevant to SU and SUD. Additionally, the table delineated the strengths and limitations of each data source, as well as the academic literature utilizing it. The authors evaluated the strengths and limitations by comparing them to the elements established by SAMHSA for SU data surveillance systems.

The identification and assessment of data systems were augmented by contributions from experts in SU research, including 2 researchers from academic institutions and 1 individual from a non-governmental organization in Korea. Members of the expert panel were selected for their specialized knowledge in the SU research domain within Korea. Structured consultations were performed to collect insights regarding the available data sources. SM initiated contact with the panelists via email and facilitated semi-structured discussions to evaluate the identified data systems, focusing on their strengths and limitations. The experts were asked to identify additional data sources or to provide recommendations for improving the initially identified systems. Furthermore, we sought their perspectives on the potential integration of new data sources into epidemiological research and asked them to discuss the challenges involved.

Ethics Statement

The Harvard Longwood Campus Institutional Review Board (IRB) allows researchers to self-determine IRB oversight requirements using the IRB Decision Tool. Data sources covered in this research did not meet the regulatory definition of human participant research, and therefore determined to be exempt from a full institutional review.

RESULTS

Scoping Review

The literature search yielded 2461 published papers after the removal of duplicates. Screening these papers by title and abstract narrowed the selection to 32 relevant studies. Many of these studies ($n=15$) focused on patients prescribed opioids or on prescription practices [20-32]. Other substances mentioned include benzodiazepines [33], propofol [34,35], codeine [36], and methamphetamine [37]. Two datasets derived from the National Health Insurance system were predominantly used; the Korean Health Insurance Review and Assessment Service (HIRA) database appeared in 3 studies [21,22,26], while National Health Insurance Service (NHIS) data were employed in 9 [20,28,29,33,38-42]. The Korea Youth Risk Behavior Web-based Survey provided quantitative evidence in 4 studies [43-46]. Additionally, 3 studies utilized data from the Korea Adverse Events Reporting Systems [23,24,35], and some research targeted specific sub-populations within a particular hospital database [36]. A full list of the included studies can be found in Supplemental Materials 2 and 3 summarizes the topics, data sources, methodologies, and findings from the reviewed literature.

Identified Data Sources

We identified a total of 11 data sources regarding SU (Table 1) [4,47,49,50,52,53,55-59]. One-time reports funded by the Ministry of Health and Welfare in Korea are presented in Table 2 [5,60-62].

Among the 11 data sources identified, none offered substantial information on individual socioeconomic variables. This could notably restrict research capabilities related to addressing confounding, effect measure modification, and intersectionality. The Narcotics Information Management System (NIMS) appeared promising for observing SU outside the clinical context; however, access to its data is limited. Additionally, measurement errors and missing data were common issues in clinical national surveys, the Discharge Injury Patient Survey [56], and the Emergency Room Injury Survey [57], compromising the accuracy of the findings. Moreover, no data source could accurately identify the specific substances used.

The 4 databases—HIRA data, NHIS data, the Korea Adverse Event Reporting System, and the Korea Youth Risk Behavior Web-based Survey—are primarily utilized for research purposes. Among them, only the NHIS database facilitates the analy-

Table 1. Available data sources for SU research in Korea

Source	Data elements	Years'	Population	Availability	Variables related to SU	Strengths	Limitations	Studies using the data
Korean Health Insurance Review and Assessment Service (HIRA) [47]	<ul style="list-style-type: none"> Prescription and claims data • Opioid analgesic prescriptions • Electronic health records • Patient characteristics • Other prescriptions and comorbidities 	2009-1 y prior to present	Patients who use national health insurance; HIRA evaluates and from 98% of the Korean population	Accessible with application and fee (e.g., via virtual network or data centers); Various types of data by patient characteristic: National Patient Sample, Aged Patient Sample; tailored extraction of data available	Substance prescription (opioids, benzodiazepines, etc.), medical claims, diagnosis codes	<ul style="list-style-type: none"> Nationally representative sample • Medication and prescription data considered to be of comparatively high validity [48] • Detailed clinical data 	<ul style="list-style-type: none"> Captures national health insurance users • Cannot reveal temporal trends by patient since data are de-identified • Cannot monitor illicit use; addiction poorly documented in diagnosis codes • Socioeconomic variables are limited (e.g., codes for being under the poverty level) • Only cross-sectional research available 	[21,22,26]
National Health Insurance Service (NHIS) [49]	<ul style="list-style-type: none"> Prescription and claims data • Opioid analgesic prescriptions • Electronic health records • Patient characteristics • Other prescriptions and comorbidities • Medical histories 	2002-2019	Patients who use national health insurance; NHIS is the national insurer of medical services	Accessible with application, fee, and place restrictions (e.g., via virtual network or data centers); Various types of data by patient characteristic: sample cohort, medical examination cohort, aged cohort; tailored extraction of data available	Substance prescription (opioids, benzodiazepines, etc.), medical claims, diagnosis codes	<ul style="list-style-type: none"> Nationally representative sample • Medication and prescription data considered to be of comparatively high validity [48] • Detailed clinical data • Enables longitudinal data analysis by patient • More specified socioeconomic variables possible (e.g., geocoding) 	<ul style="list-style-type: none"> Captures national health insurance users • Does not include data of non-benefit users • Cannot monitor illicit use; addiction poorly documented in diagnosis codes 	[20,28,29, 33,38-42]
Narcotics Information Management System [50]	<ul style="list-style-type: none"> Imports and exports Distribution • Pharmaceutical companies • Wholesalers Prescription and dispensation data • Hospitals, clinics, pharmacies 	2018-present	Mandatory reporting by all narcotic handlers, collecting over 120 million cases annually	Partially accessible with application through medical narcotics big data utilization service; data provided for a maximum of 1 y	Four datasets are separately available (import/export, production, sales/purchase, and usage)	<ul style="list-style-type: none"> Large sample size • Holistic data collection across substance distribution systems • Nationally representative sample 	<ul style="list-style-type: none"> Cannot reveal temporal trends by patient since data are de-identified • Cannot reveal annual trends since data are only provided for a maximum of 1 y 	[51]

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Table 1. Continued from the previous page

Source	Data elements	Years'	Population	Availability	Variables related to SU	Strengths	Limitations	Studies using the data
Report on Public Awareness of Misuse of Drugs [52]	<ul style="list-style-type: none"> Perceptions on SU Experiences of SU Statistics are reported by sex/gender and region 	Yearly reports, 2006-1 y prior to present	Web panel and phone call samples from Entire Korean population Response rate around 5%; final sample size 1000	Report accessible through website	Q10. Experience with weight loss drugs, brain stimulants ("study aids"), other narcotics (e.g., marijuana, methamphetamine), "sobering drugs," and synthetic novel drugs Q11. Experience requesting over-prescription of substances	<ul style="list-style-type: none"> Yearly report Estimates of total SU prevalence in Korea 	<ul style="list-style-type: none"> No access to raw data Drug use assessed in broad categories Low response rate, possible bias from data acquisition methods Socioeconomic variables other than sex/gender and region not available 	
Korea Adverse Events Reporting Systems Database (KAERS DB) [53]	<ul style="list-style-type: none"> Detection of substance misuse & morbidity Patient characteristics Type of adverse event Mechanisms of SU 	1988-2 y prior to present	Cases reported through KAERS	Partially accessible with application (data are only within 10 y)	Demographics, substance code, results, doses and usage pattern, route of administration, indications, purpose of drug usage, adverse event information, medical history	<ul style="list-style-type: none"> Nationally representative sample 	<ul style="list-style-type: none"> Potential underreporting (reporting usually done by healthcare providers) Difficult to observe illicit SU 	[23,24,35,54]
Narcotic Crimes Report (Prosecution Service) [4]	No. of cases of trafficking, use, or possession of an illicit substance (opioids, heroin, cocaine, amphetamine/ATS/NPS, cannabis)	Yearly reports, 2004-1 y prior to present	Cases identified and secured in law enforcement operations	Report accessible through website	N/A	<ul style="list-style-type: none"> Yearly report Some data that could be used to estimate illicit drug use Frequently cited by media (high social influence) 	<ul style="list-style-type: none"> No access to raw data Limited to drug offenders; influenced by policies and political environment 	
Korea Youth Risk Behavior Web-based Survey (Centers for Disease Control and Prevention) [55]	Detection of SU morbidity	Every 3 y between 2005-2010, annually since 2011	Sample of 2% of total middle and high school students (average n = 77 105)	Reports, public-release research dataset	Alcohol use, mental health, SU (lifetime SU; reasons for SU; first SU)	<ul style="list-style-type: none"> Focused on the youth population, which is suspected to be experiencing the most rapid SU increase Routine data collection 	<ul style="list-style-type: none"> Sample is restricted to students enrolled Limited variables on SU Likely to be underreported 	[43-46]
Discharge Injury Patient Survey (Korea Disease Control and Prevention Agency) [56]	<ul style="list-style-type: none"> Detection of substance misuse & morbidity Inpatient stays Electronic health records Diagnostic codes for non-fatal overdose 	2005-2 y prior to the present	Patient sample of 9% from 220 sampled hospitals (approximately n = 300 000)	Public research dataset accessible with application	Demographics, diagnostic code, result of treatment, reason of injury (e.g., "poisoning"), type of poison substance	<ul style="list-style-type: none"> Large sample size Detailed clinical data and few missing data 	<ul style="list-style-type: none"> Frequent measurement error and misclassification of SU Self-reported variables included 	

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Table 1. Continued from the previous page

Source	Data elements	Years'	Population	Availability	Variables related to SU	Strengths	Limitations	Studies using the data
Emergency Room Injury Survey (Korea Disease Control and Prevention Agency) [57]	Detection of substance misuse & morbidity • ER visits • Diagnostic codes for non-fatal overdose	2006-2 y prior to the present	All patients who visited 23 sample ERs (approximately n = 280 000)	Public research dataset (year 2019, 2020) accessible with application	Demographics, diagnostic code, result of treatment, reason of injury (e.g., "poisoning"), type of poison substance, suicide risk factor (e.g., "drug addiction")	• Nationally representative sample • Includes the substances used	• Frequent measurement error and misclassification of SU • Occupation/education documented for only 10% to 20% of sample • Requires cleaning of manually entered data • Only 2 y publicly available	
Mental Health Survey (Research and Planning Division of the Mental Health Research Institute) [58]	Detection of SU morbidity	Every 5 y (2001-2021)	Those aged 18 y to 79 y (n = 5511) (2021)	Reports, public-release research dataset; Restricted dataset accessible with application	Alcohol use disorder, nicotine use disorder, suicide (2011, 2016, 2021), SUD (2016)	• Data collection extended for several years • Used in several mental health-related studies	• SUD only documented in 2016	
Cause of Death Survey (Statistics Korea) [59]	Mortality data • Cause of death demographics	Every year/month	Death, includes all reported cases	Publicly available	Death by poisonous substance, death by unknown substance, suicide by other method	• Regional/monthly data • Nationally representative sample	• Does not specify substance • Cause of death not sufficiently specific	

SU, substance use; SUD, substance use disorder; ATS, amphetamine-type stimulant; NPS, new psychoactive substance; N/A, not applicable; ER, emergency room.

¹Data availability was assessed in December 2023.

Table 2. National reports on SU

Report	Year	Study population	Content
Substance User Survey [5]	2021	540 Adult offenders sampled from rehabilitation facilities or undergoing SUD treatment	Type of substance, SU period, gender, education, income/wealth, previous health issues, comorbid conditions, childhood experience, age of SU initiation, purchase route, etc.
Mental Health Survey [60]	2016	Households from 21 community catchments throughout Korea	Past usage of any substances
Narcotic Substances Addiction Survey [61]	2014	936 Adults living in Incheon	SU prevalence estimates in Incheon
Narcotic Substances Addiction Survey [62]	2009	447 People with drug dependence in prisons, rehabilitation facilities, probation systems, and other hospital systems	Type of substance, SU period, gender, education, income/wealth, previous health issues, comorbid conditions, childhood experience, age of SU initiation, purchase route, etc.

SU, substance use; SUD, substance use disorder.

sis of longitudinal data at the patient level. The first 3 databases are composed primarily of clinical data, which are deemed to have greater validity because of the automated nature of clinical data systems, such as electronic health records and claims data. Nevertheless, these databases cannot be used to monitor illicit SU, and addiction-related International Classification of Diseases diagnosis codes are generally under-documented.

The HIRA and NHIS databases are both derived from Korea's National Health Insurance system, providing a substantial sample size and extensive coverage of data on medical services. Medical service providers submit claims to HIRA for review; subsequently, the results are forwarded to the NHIS, which reimburses the providers [63] (Supplemental Material 4). A key difference between the data of the 2 institutions is that HIRA supports only cross-sectional studies due to the annual de-identification of patient identifiers. In contrast, the NHIS database facilitates longitudinal data analysis and offers the possibility of incorporating aggregate-level socioeconomic variables through geocoding. Notably, however, the NHIS data do not include non-benefit users who receive no reimbursements from national insurance, potentially excluding a meaningful number of substance users from the data.

As indicated in Table 2, the national reports on SU offer some insights into individuals who use substances outside of a medical context. However, these reports do not include the raw data sources, precluding independent verification by researchers. Additionally, the sample sizes in these reports are relatively small, as the surveyed populations were confined to certain regions or living situations, such as prisons or treatment centers. Compounding these limitations, the complete reports for the years 2014 and 2009 are not accessible from of-

ficial sources, further restricting the availability and validity of information on SU for those particular years.

DISCUSSION

These findings offer a broad-based overview of the survey and administrative methodologies currently employed to assess SU in Korea. Initially, a literature review and consultations with an expert panel led to the identification of 4 national reports and 11 data sources. Subsequently, the utility of these sources for SU epidemiology research was summarized, with an emphasis on their application within the Korean context. Lastly, an assessment of these sources highlighted key challenges, including issues with data accessibility and missing information.

A comparison with established systems like SAMHSA reveals several deficiencies in Korea's existing data sources. Notable limitations include suboptimal precision of SU measures, the absence of longitudinal data collection, and the omission of specific SU populations not served by the judicial or medical systems, such as economically disadvantaged groups and socially isolated individuals. Moreover, the available data do not include variables necessary for evaluating concurrent clinical and socioeconomic conditions, including chronic pain, mental health disorders (e.g., depression, bipolar disorder, schizophrenia, trauma), addiction, education, occupation, and household income [64]. Additionally, Korea lacks several essential data sources for effective SU surveillance, such as comprehensive national surveys and data regarding harm reduction and treatment strategies.

The limited scope of data sources, including judicial records, clinical databases, and surveys targeting young people, consid-

erably constrains the breadth of understanding of SU in Korea. For instance, the Narcotic Crimes Report issued by the prosecution office includes only information on individuals involved in substance-related offenses. This narrow focus does not offer a complete picture of SU prevalence, thereby distorting the perception of its true scope across the country. Furthermore, the absence of a unified national database hampers the application of advanced analytical methods to study SU in Korea [65].

The skewed reliance on such data sources has seemingly directed the academic focus primarily toward opioid prescription and misuse, potentially overlooking broader SU trends. This focus may not accurately reflect real-world experiences, given that substances like methamphetamine and marijuana are reported to be more widely used in Korea [4,5]. The discrepancy between academic research and real-world SU patterns underscores the need for a more diversified and representative approach to data collection.

First, to bridge the identified knowledge gaps regarding SU in Korea, a multifaceted approach to diversifying data sources must be adopted. A nationally representative survey is a fundamental starting point. Drawing on the example of the SAMHSA National Survey of Drug Use and Health (NSDUH) [9], this survey should be designed to capture a wide range of SU information across diverse segments of the population, including marginalized groups. The NSDUH methodology, which includes data collection from settings such as college dormitories, group homes, shelters, rooming houses, and civilian residences on military bases, could provide a useful template. The monitoring of SU should extend beyond the observation of severe cases that present in emergency departments or are processed within the judicial system. To inform effective prevention strategies, it is essential to track and understand the patterns of both occasional and moderate use. Additionally, the survey should evaluate concurrent clinical and socioeconomic conditions to gain a more accurate, holistic understanding of SU and its broader implications.

Second, a health surveillance system based on clinical data could be established using the robust systems already in place in Korea, such as the HIRA, NHIS, and NIMS databases. A potential benchmark for this is the Treatment Episode Data Set from SAMHSA, which provides insights into admissions to and discharges from SU treatment across the nation. Furthermore, Korea's current Discharge Injury Patient Survey and Emergency Room Injury Survey must be improved. As it stands, these surveys are inadequate as an emergency department moni-

toring source, in comparison to resources like the Drug Abuse Warning Network of the United States [7]. Poor data quality, influenced by a high rate of misclassification and a substantial volume of unclassified or uncategorized handwritten data, substantially impedes research efforts regarding SU. Additionally, the documentation of socio-demographic variables in these data sources is insufficient, currently capturing only 10% to 20% of the necessary information, and thus requires considerable improvement.

Third, it is important to publicize the availability and fundamental details of SU treatment services. The establishment of a dataset for this purpose is exemplified by existing models, such as the SAMHSA National Survey of Substance Abuse Treatment Services and the National Substance Use and Mental Health Services Survey. These surveys highlight the recognition of SU as a public health issue. However, the current shortage of treatment facilities and medical providers equipped to offer such treatments in Korea limits the development of these data sources. Despite these challenges, major strides are being made, as demonstrated by the Korean government's initiative to increase the number of addiction treatment centers from 3 to 17 nationwide and to establish a 24-hour call center [66]. Looking forward, integrating adequate treatment and harm reduction services into the existing clinical system is critical. This integration should extend beyond specialized facilities to address issues of accessibility and stigmatization.

Ensuring the quality and accessibility of data is crucial at all stages [67]. Assessing quality through measures such as sensitivity, specificity, and positive predictive values, as well as evaluating representativeness, can improve the reliability and validity of the data [68,69]. Moreover, the integration of standardized data elements across databases is essential for facilitating more thorough and interconnected research. Utilizing de-identified individual IDs as merge keys for linking data sources or using aggregate-level data from small geographic areas could significantly improve data linkage capabilities. By enabling the possibility of data connection, researchers can employ methods like capture-recapture analysis to address gaps in information across multiple databases [65].

This study had several limitations. First, while the data sources were identified through a systematic search and consultations with experts, we may have overlooked databases that are not available online. Second, the article might not fully capture the challenges associated with the existing data sources as experienced by research institutions and the government.

Finally, highlighting the limitations and challenges in the SU data infrastructure represents only an initial step. Further exploration and collaboration with relevant entities are essential to deepen our understanding of the epidemiology of SU.

CONCLUSION

In Korea, high-quality research on SU is complicated by the scarcity of publicly available data. Although we identified 11 potentially useful data sources, key challenges remain, such as issues with data availability, quality, underreporting, and compatibility across datasets. Improving access to information, enhancing its usability for research, and standardizing data elements would increase the utility of existing sources. Establishing a reliable national survey to gather comprehensive data on SU, while incorporating longitudinal analysis and accounting for cases that are currently overlooked, is imperative to support the development of informed research and policy interventions.

NOTES

Supplemental Materials

Supplemental materials are available at <https://doi.org/10.3961/jpmph.24.171>.

Conflict of Interest

The authors have no conflicts of interest associated with the material presented in this paper.

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