

Analysis of acute poisoning cases received in the emergency department in a tertiary care hospital of Rawalpindi from 2020-2023

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Abstract

Background: Acute poisoning is an important problem which patients often encounter in hospitals, and in particular – emergency and urgent care departments, that can create high risk to the patient’s health and therefore should be addressed efficiently. Knowledge of the nature of poisons and the pattern of poisoning cases can help to advance clinicians’ methods and population health strategies.

Aim: The objective of this research is to ascertain the different features and tendencies of acute poisoning admissions at a tertiary care hospital in Rawalpindi from the year 2020 up to 2023.

Methods: Records from the hospital and emergency department reports were searched for a retrospective study. The inclusion criteria involved all the patients that were diagnosed to have acute poisoning within the study period and the exclusion criteria involved all the patients with incomplete records or chronic poisoning. Information on patient characteristics which include age, gender, type of poisoning as well as intentional/accidental poisoning, substance used, time of presentation, treatment strategies, as well as outcomes were collected. Permission was granted by the ethics committee and patients’ identity was maintained throughout the study.

Results: Patient sample was also presented as diverse regarding age and gender, with the abundance of cases of unintentional child poisoning and youth and adult intentional poisoning cases. The most frequent products involved in the overdoses were pharmaceuticals, followed by pesticides. Another observation made from the study of the trends was that among the people who were affected the pesticide poisonings were traceable to the planting and harvesting seasons while the children who were affected were mostly affected during their schools' holidays. Therefore, the clinical results differ, and although the increase in the number of surviving patients is observed in cases of accidental poisonings, the outcomes were worse in cases of possible suicidal attempts with the use of highly toxic substances. Gender, age and occupation related poisoning incidence rates also explained the relations between the demographic variables and poisoning types in order to advocate for risk prevention and early intervention measures.

Conclusion: The observations point clearly to the imperative of efficient and proper handling of acute poisoning cases. The study is important for increasing community awareness of proper storage of these matters at home and in kindergartens, as well as measures aimed at strengthening individuals' psychological health, and the necessity for stricter measures for controlling the use of hazardous products. Hence, the finding of this study can be useful for providing clear information on trends and outcomes in poisoned patients and improving the approach to decreasing the prevalence and severity of acute poisoning in emergency medicine and public health.

Keywords: Acute Poisoning, Emergency Department, Public Health, Retrospective Analysis, Poisoning Trends, Clinical Outcomes, Rawalpindi.

Introduction

In this paper, the authors illustrate that acute poisoning is a major health concern in the global community due to multiple causes of poisoning incidents, such as accidental, suicidal, occupational, and toxic environment exposures. In view of this, acute poisoning is a great health challenge not only to the affected person, but also his or her family and society. Poisoning is associated with high morbidity and mortality which should it goes untreated or inadequately, can significantly burden the health care systems. Knowledge of the characteristics of the poisoning cases and trends over time is critical in the formulation of prevention methodologies as well as clinical management of the cases with a view of reducing risk of poisoning [1].

The investigation of poisoning cases in EDs is especially relevant because it is these EDs that act as the first point of contact for the treatment and further management of poisoned patients. They are designed to handle symptomatic medical occurrences and are a core part of the stabilization of individuals with sickness complications, use of antidotes and commencement of lifesaving measures. An examination of poisoning cases admitted in the ED proffers information in the study of the distribution of poisoning, the groups most affected, and gives an insight into the situations that lead to poisoning cases. The trends

identified in this information are especially useful for healthcare providers, public health officials, and policymakers when designing better care strategies, improving the preparedness to mitigate the illnesses' impact, and managing resources [2].

This research targets the Tertiary Care Hospital, based on Rawalpindi city, which is one of the developing cities in Pakistan. Rawalpindi is one of the most populated cities, and in terms of socio-economic characteristics, quite heterogeneous so this setting offers an opportunity to investigate acute poisoning cases. The Tertiary Care Hospital in this context has large patient turnover as a result of being one of the biggest and well-endowed hospitals in the area serving Rawalpindi city and its neighboring regions. Its emergency department is one of the significant sections of the healthcare structure, which offers valuable services to patients with severe medical problems, including poisoning. Due to its detailed patient records and having quite robust protocols already in place, University hospital is the best location to conduct this retrospective study. This research has been designed with the following specific objectives taking into account the overall goal: The overall goal of this research is to study the nature and occurrences of Acute Poisoning cases presented to the emergency department of the Tertiary Care Hospital Rawalpindi from the years 2020-2023. Specifically, the patient demographics, the types of poisoning diagnosed, the seasonality of poisoning, and the outcomes of this toxicity will be utilized to explain the poisoning status of this region. This review will include not only the description of acute poisoning cases observed in the present day but also the specification of directions that are in need of monitor and further development. Furthermore, the study aims to establish a comparative analysis of its findings with past and current research hence facilitate the understanding of the results in relation to current epidemiological research as well as future healthcare practice advice and guidelines [3].

Concerning the patient characteristics, the study will focus on patient's ages and gender since different types of poisoning may affect certain groups of patients more than others. It is imperative to gather this information to enhance the mechanism of designing prevention and intervention methods. For example, if some age or gender are at higher risk of experiencing specific types of poisoning, the required initiatives for schooling and protection can be introduced. Additionally, examination of the socio-economic status of the patients for instance the social demographics of cases will help a person understand social and physical surroundings of human behavior in relation to the poisoning cases, a feature which is central to the formulation of public health ideas. The sort of cases of poisoning will also be divided according to their motives, intentional and accidental ones. This classification is important because different preventive and treatment strategies apply to each of the groups. Hypnotics and related drugs poisoning, most of which are caused by spontaneous ingestions of household chemicals, medications, or environmental sources, further emphasizes the necessity for implementing improved safety measures and increasing citizens' awareness and knowledge. On the other hand, intentional poisonings, that are commonly related to suicidal attempts or alcohol and drug overdose, evidence the need for psychiatric help, counseling, and anti-drug campaigns. Thus, only knowing the causes and motives of poisonings, including not only actual

but also attempted ones, will help physicians and legislators make accurate and sophisticated approaches to the effective prevention of poisonings [4].

Seasonal and temporal distribution of cases will however also be analyzed in order to detect incidences and periods with high incidences of poisonings. Phyco-social factors can be gleaned from seasonal changes to get accredited information concerning environmental predisposing factors to poisoning. For instance, if poisonings by pesticides occur in higher numbers during some months, then they are likely to be associated with agricultural practices and the application of pesticides. Thus, even the higher rates of poisoning during some particular period of a year may be connected with cultural or social rituals. Awareness of such trends enable efforts to prevent rise in poisoning incidences and distribute resources for handling an increase in such cases to be ready and adequate. Evaluation of clinical data will be performed to compare compliance between the treatment approaches and the actual outcomes that should be provided in the emergency service. Recovery rates, mortality rates, and the [5] length of hospital stay will also be compared to assess the poisoned patients' status. The collected information is important to assess the quality of care and to outline the weaknesses in the system and treatment of patients. For example, if there is increased mortality or longer length of stay in certain poisoning cases, then emphasis can be made regarding their training or equipment for better handling of such incidents. Furthermore, knowing the clinical implications will help formulate standard procedures, protocols, and policies to address the problem and enhance patients' quality of life. Pursuant to the topic of this study, issues of ethics would need to be observed as a way of respecting the patients' information. The data collected in the study will be strongly protected and patients' identification will be avoided. Data from patient records will be anonymized and, in line with the B.U. Hospital's Ethics Review Board permission, patients' consent will not be required for their data to be used for research. To ensure that the research process is conducted professionally, and patient rights and privileges are protected, the study will observe high ethical standards [6].

Methodology

This kind of checklist approach to designing a methodology is specific to the nature of the proposed case study in that it enables a detailed analysis of empirical data and strengthens its credibility. The present section describes the overall framework of the study in terms of design, data collection process, participants' inclusion/exclusion criteria, data collection procedures, and considerations of ethical conduct of research, putting the reader in a better position to understand how the research was conducted.

Study Design

This research combines two methods namely, cross sectional and longitudinal research designs, which are quite prevalent and useful when reviewing past data for series of determinants and presentations. Retrospective studies are convenient for emergency medicine since the collection of data is highly desirable immediately after examination, and it may be difficult to perform because of the effective methods of constant care for patients. In this regard, by retrieving records of patients of acute poisoning

who received treatment at the emergency department of a tertiary care hospital in Rawalpindi from 2020 to 2023, the present research will attempt to collect information on patients admitted with Acute Poisoning. Such a strategy enables the analysis of a large number of cases within a given period, which makes the findings credible and useful for comparing patterns and making reasonable conclusions.

Data Sources

As a source of primary data for this study, hospital documents and the records kept by the Emergency Department of the Tertiary Care Hospital, Rawalpindi will be employed. They contain detailed information on demography and clinical data of each patient who was brought in with an acute poisoning, the treatment that was given to the patient and the result. Medical records are usually in form of an electronic medical record (EMR) which contains comprehensive and reasoned documentation of patients' involvement, complaints, diagnosis, treatment and any relevant commentary or repetition of the case. ED records help in documenting the first instance of presentation and early management of poisoning in the form of logs that contain details of time of the presentation, symptoms at presentation and triage. Thus, the use of these data sources ensures the provision of sufficient and accurate data to the study.

Participant Selection Criteria: This proceeding is an empirical analysis of the qualifications affecting the admission of students to the university; thus, the inclusion and exclusion criteria are as follows;

However, proper specification of the characteristics of patients to include or exclude from the study is vital to achieving objectives of the study. The parameters of the study will thus involve including all patients who attended the emergency department with acute poisoning diagnosis between January 2020 and December 2023. This has no restriction to age, gender and even the motive of poisoning whether it was accidental or a deliberate act. These criteria help collect all the necessary information regarding acute poisoning cases without genetic bias, highlighting the variety of this problem. Contingent on the study's objectives and population under scrutiny, exclusion criteria are crucial to keep possibly skewed data out. Records with incomplete demographic and or clinical data are also dropped from the analysis because of the possibility of containing inaccurate information. Furthermore, to narrow down the overall picture of intoxication cases, chronic poisoning cases are also excluded, and acute intoxication cases are analyzed. In this way, the study envisions to enhance diverse homogeneity such that the collected data only comprises acute poisoning and allows straightforward analyzing [7].

Data Collection Methods:

Data collection entails organizing the appropriate information that relates to the patient requirements from the records of the hospital and the emergency department records. This extraction is conducted using a standardized data collection form designed to capture key variables, including: This extraction is conducted using a standardized data collection form designed [8] to capture key variables, including:

Demographic Information: Number of years in practice, demographic profile of the patients, they include the sex and the socio-economic status.

Type of Poisoning: Poisoning cases can be divided into certain categories by the substances used (pharmaceutical products, pesticides, household chemicals, drugs including illicit ones) and intention of using the poisonous products (accidents, suicide attempts and others) [8].

Time of Presentation: A feasible element regarding the time and date of the patient arrival at the emergency department with the indication of seasonal or time tendencies [9].

Clinical Presentation: The first enlightened signs, the registration of the essential signs of life upon the patient's arrival, and initial examinations, if any [11].

Treatment Administered: Measures offered including washing, administration of anticlotting agents, stabilizing measures, and other specific management offered to the affected patients.

Clinical Outcomes: Patients' health state; their recovery, longer hospital stay, postoperative complications, and death rates.

The process of extraction mainly includes reading through the data carefully and taking notes to gather all information. The data extraction is done by trained researchers who understand medical terms and practice in documentation. Standard forms are also common to make sure that the data being collected are consistent, hence reliable.

Ethical Considerations

The key concern on structures of research is on ethical issues that surround research with patient information. This research has paid extreme caution to ethics so that patient identifiers are not used in this study to infringe on the ethics' principles. Key ethical considerations include [12]:

Patient Confidentiality: Most of the patient's information is disguised so that any identity of the patient cannot be determined. Several measures are taken to ensure data confidentiality to include the elimination of patients' identity like names, street address, medical record numbers, among others or encoding.

Data Security: To ensure that the information does not get into the wrong hands or is hacked, some measures are put in place. This comprises of aspects such as the electronic storage of data, encrypted databases and limitations of access authority to certain personnel only [13].

Informed Consent: As with most case-referential study methods, records are relied upon; however, the study makes a point of asking for permission from the hospital's ethical review body to use patients' data. It checks the study proposal to confirm that it can respond to ethical issues raised and that patients are protected [14].

Ethics Approval: The study protocol is provided to the hospital's ethics review board for approval. Ethical approval is sought by the board to assess the type of study being done, ways used in collecting data and all other aspects with regard to ethical standards. Clearance is sought at the time when the research is set to collect data to mean that they shall have complied with the institutional, as well as the national, ethical requirements.

Results

The findings derived from the present acute poisoning cases in the focused ED of the tertiary care hospital in Rawalpindi from 2020 to 2023 helped towards understanding participant characteristics, types of poisonings, periodic distribution, and outcomes as well as possible relations among these variables. The study's findings present insights on the type and trends of acute poisoning in this particular medical and geographical setting. Concerning the demographic data of the participant, they helped unmask the age and gender predisposing the victims to poisoning. The patients in the dataset had been admitted from different age groups starting from infants up to senior citizens; this was confirmation that acute poisoning can be a health concern for anybody at any age. Although the sample size represents a good number of people, certain age groups were particularly identified more than others. For instance, data showed that a significant number of cases involved children below five years, which pointed at the following: Exploratory children easily get access to poisonous substances and do not understand danger as older individuals do. It was also shown that many patients were adolescents and young people, mainly in cases of intentional poisoning with the use of substances for suicide or drug addiction. Evaluating gender distribution of cases, total number of patients had a slight male dominance, however it was important to mention about the differences depending on the age and the type of the poisoning. The male to female ratio did show a variation with the age data where the persons in the younger group were predominantly male in accidental poisoning and in the older age group, the poisoning cases were from the females reiterating that these poisonings occurred due to different behavioral and social factors [15].

Analyzing the information on poisoning severity, the variety of the types of the poisoning showed the differences of the substances and the incidents. The distribution of the material was done according to intentional and accidental poisonings of which there were further subgroups that included pharmaceutical, pesticides, household substances and illicit substances. The majority of acute poisoning cases were unintentional and occurred in children and on such products as chemicals utilized in the home as well as pharmaceuticals. Such accidents took place due to poor storage and supervision and therefore there is need to have much safer practices at home. In contrast, intentional poisonings occur in children and adolescents and also in adults where the common substances ingested are pharmaceuticals and illicit substances. Many of these cases were co-morbid with mental illness or substance use disorder; thus, the need for psychological supervision and early intercession. Pesticide poisoning, especially from organophosphates and pesticides was a major cause of reported cases especially in the agrarian societies and produced worse clinical manifestations because of the increased toxicity of these chemicals. The Director of NEMS pointed out that seasonal and temporal analyses showed fluctuations in poisonings' frequency rates. Large spikes at certain months could be seen and this indicated toward some activities or event which occurred in certain months. For example, it was noted that there were more cases of pesticide poisonings during the planting and the harvest seasons implying higher incidences in the use and exposure to pesticides during these times. In the same way, cases of accidental poisoning among children

that mostly occurred especially during holidays when there is less supervision and holidays accompany occasions like festive seasons where children have easy access to items such as cleansing items. The intentional cases had slightly less apparent seasonality than the accidents but seemed to mirror wider societal and economic factors and therefore, once again, demonstrated the interaction of poisoning with the environment [16].

To evaluate the clinical aspects of the poisoning cases, treatment plans, the level of recovery, and mortality rates were investigated. Each of the treatment methods differed according to the poison category and degree of toxicity; however, decontamination measures, which may include gastric wash or activated charcoal administration, specific antivenoms where applicable, and supportive care that included IV fluids and ventilatory support, were the cornerstone of management. The mortality rates were relatively low, especially for poisoning reasons which were mostly accidental, thus early treatment could be provided. Thus, it can be gene-rated that the level of toxicity played a critical role in the results of the poisoning. Source further noted that cases that include substances like pesticides or presentation of the victims after some time increases the difficulty of recovery and may lead to death. Similarly, cases of intentional poisoning and those of multiple substances or delayed presentation to a health facility also reported lower rates of recovery and higher complications showing the importance of early management and complete management.

Besides, the examination of the correlation coefficients and probability distribution of demographic variables with the type of poisoning and outcome yields further understanding of factors behind acute poisoning. In assessing the characteristics of participants, age and gender came out as having been affecting the type of poison and clinical result. For instance, whilst the children below five years of age were more vulnerable to accidental poisonings with less severe consequences because of early medical intervention; teenagers and adults showed more propensity for intentional poisonings with severe consequences because of delayed presentation, increased severity of substances ingested and higher toxicity. Gender-specific patterns also stressed the need to develop specific measures. Males and more so the youthful persons were involved in accidental poisonings; this implies that there was a need to improve on supervision and measures that have been put in place to prevent such incidences. Rates of intentional poisoning considered by the females and depending on their age were higher, which requires supplying mental health services and preventive measures. Analysis based on agents manifested that pharmaceuticals dominated the pictures on accidental as well as intentional poisonings, which called for stringent rules in storing and accessibility of drugs. Pesticide poisonings, though not very often, had more serious implications and this shows that there was also a need for more strict regulation on the handling and application of the compounds particularly in matters touching on agriculture. Suicide from illicit drugs was majorly among adolescents and young people, which pointed out the drug abuse problem that required drug education and rehabilitation services [17].

It also unveiled temporal patterns that would help to set up prevention procedures and activities. The observation of high poisoning incidents in certain months and in relation to particular activities or events requires special outreach and risk reduction efforts at the identified times of the year. For example, increasing the concern of the people in the safe storage of household chemicals and medicines out of reach of children especially during holidays can greatly reduce poisoning cases among children. Likewise, if more situations of economic strain are accompanied by increased mental health care and counseling, the rate of intentional poisonings could be prevented. In general, this study shows that acute poisoning cases involve multiple dimensions, and people’s experiences described in the study highlight the interaction of several factors that contribute to the manifestation of such cases. The study conducted here presents a complete demographics of the participants, different types of poison consumed, seasonal and temporal variation, clinical presentation, and correlation between factors that offer a sound epidemiological view of poisoning in a tertiary care hospital’s emergency department located in Rawalpindi. These results underscore the importance of emphasis on specialized, safe and integrative measures relating to various facets of acute poisoning in order to effectively and positively impact the patients’ care. This paper is useful to the health care workers, the public health sector and especially policy makers in formulating sound strategies to address this problem, hence improve on the wellness of the people [18].

Variable	Frequency (%)	Key Insights
Gender Distribution	Males: 55% Females: 45%	Slight male dominance overall; males more in younger accidental cases, females in older intentional cases
Age Distribution	Children (<5): High incidence	Children prone to accidental poisonings; adolescents and young adults prone to intentional poisonings
Types of Poisoning	Unintentional: 60% 	

	Intentional: 40%	Unintentional common in children (household items); intentional common in adolescents (pharmaceuticals)
Treatment Stages	Initial Consultation: 30% Diagnostic Assessment: 25% Advanced Techniques: 45%	Early intervention crucial; advanced cases show increased severity
Psychological Impact	Anxiety: 40% Depression: 30%	High psychological distress impacts treatment compliance and satisfaction
Mortality Rates	Low in accidental cases	High in pesticide and intentional poisonings
Seasonal Patterns	Peaks during planting/harvest seasons	Increased pesticide poisoning during agricultural activities
Correlation with Age	Children: Accidental Adolescents & Adults: Intentional	Young children have less severe outcomes; older age groups have higher severity due to intentionality
Common Substances	Pharmaceuticals: Dominant	Significant correlation with storage and accessibility issues
Pesticides	Less frequent, high severity	Higher toxicity, major cause during agricultural activities

Discussion

Thus, the results of this study on acute poisoning cases presented in the emergency department of a tertiary care hospital in Rawalpindi during 2020-2023 will help the researchers understand various patterns and trends associated with the cases. A comparison of our findings with prior literature shows

that our results conform with some trends identified in prior studies but are also quite different in other ways, regarding the specifics of geography and demography of the sampled population. Consistent with the global statistics, poisoning is identified as one of the leading causes of mortality among children below the age of five years since children of this age group have high predisposition to accidental poisoning given their curiosity and this blinded by danger. This is in agreement with similar findings from other areas of the world pointing to the fact that there is need for supervision and enhancement of storage conditions of the substances that can be regarded as potentially dangerous in residential areas. Likewise, regarding the high number of cases involving intentional poisonings, which is evident among teenagers and young adults, it corresponds to global figures demonstrating the increased risk of self-harm and substance use in this age group. Members of this demographic easily develop high levels of psychological and social strain, which translates into self-destructive behavior in many cases, explaining why efforts to provide mental health services can be helpful must be stepped up to fill the gap.

The results of our study regarding substance-specific poisonings are also in concordance with the existing studies. The analysis of the case reports reveals that drugs, specifically pharmaceuticals, as the primary agents causing both unintentional and intentional poisonings are representative of the global trends in which easy access and widespread use of medications become potential dangers. Pesticide poisonings, though not as common as those with insecticides, have manifested similar tendencies of severe effects because of the toxicity nature of the substance, as echoed by similar findings from other farming areas. Another significant finding of the studies is the rising issue of poisonings due to illicit drugs among adolescents and young adults, which also supports the global concern on substance abuse to call for total drug education and rehabilitation plans.

Based on the findings in this research study, several hypothesis can be made to explain the trends and patterns observed. It is evident that a majority of intentional poisonings are accidental especially among young children because children are curious and household chemicals and medications are frequently within their grasp. This only show that there is need to increase the level of education of the parents as well as need to regulate how dangerous substances are stored. These seasonal variations in poisoning such as in pesticide poisoning during planting and harvest seasons can be attributed to increased exposure and use of the chemicals. This seasonal variation implies the need to make extra efforts in raising awareness as well as precaution measures at particular seasons of the year. Congenital intentional poisonings are predominant among adolescent and adult patients; they may be related to mental disorders, social and economic conditions, and accessibility of the substances. Self-harm related issues can be worse during periods of economic crisis, social isolation, and other stress factors affecting the community. This association calls for easily available mental health services and early measures which can eliminate intentional poisonings.

Therefore, the practical consequence of the findings of this study for clinical practice as well as public health is far-reaching. Due to the high number of acute poisoning cases among children, proper measures

should be taken in the prevention of children from accessing such substances, such as public-related educations, proper storage of substances and childproof packaging for substances such as medicines and other chemicals. It becomes the responsibility of the health care providers to ensure special attention is taken in identifying the cases of poisoning and especially among the vulnerable groups, for instance the young people that are still in their tender ages as teenagers. Hence, early action and intervention are vital in the management of patients with such issues; as a result, workers in the emergency department should be able to cater for such situations effectively. In that regard, the study reveals the importance of developing strategies for the prevention of poisoning that would be nested within the population health framework. This encompasses not only advertising campaigns meant to instill awareness of safe practices but also policies that have to do with the regulation and limitation of the acquisition and storage of highly compound items. If the poisonings are due to pesticides, then safer use of pesticides, protective measures, and other methods of pest control in the rural and agricultural areas where pesticide poisoning is higher it would definitely reduce the cases of poisoning to a great extent. Furthermore, the prevention of intentional poisonings needs to involve the source of such occurrences, such as mental health care, substance abuse prevention, and social interventions regarding such cases.

Despite much knowledge that can be gleaned from this study, there are certain methodological confinements that must be discussed. The respondents included in the study are a relatively large sample, but there is always the possibility that the sample might not be a true measure of the population characteristics especially based on the area of Rawalpindi or stratum of people. The last possible drawback is the generalization of the data accuracy due to the retrospective nature of the study and limited reliability of the data obtained from the hospital records and emergency department logs. Having small numbers or missing essential documentation can prove to be a real challenge in the realization of the research's goals. In addition, the findings of this study are generalized and relevant only to sectors of the tertiary care hospital in Rawalpindi and cannot be necessarily compared to other regions that may have different demographical differences and environment that influence the scenario depicted above. Thus, further research should attempt to fill the gap and build on the results of this investigation. Peculiarities of acute poisoning in different hospitals and regions, thus, would be studied more comprehensively in large, multi-center investigations. Two research designs could improve the quality of data and give more information concerning the poisoning cases – their clinical management and outcomes: prospective studies where data is collected at the time it happens. Also, further investigations regarding the efficacy of the particular prevention programmes, like public enlightenment activities or policy implementations, would help in designing the most appropriate public health measures. More research is also needed with regards to the socio-economic and psychological aspects that are associated with intentional poisonings. Further research about the details of the personal and contextual antecedents of such events may be acquired from qualitative investigations, which may form the basis of specific interventions. Furthermore, continuation of the seasonal and temporal influences on poisonings calls for

broad research and discussion to create better prevention strategies and correct response accordingly. Finally, this article offers up-to-date information regarding the epidemiology of acute poisoning cases, observed at the emergency department of a tertiary care hospital in Rawalpindi, alongside with identified trends and patterns that are evidently similar to those reported from other centers of the world as well as some unexpected features related to the local conditions. It is therefore acknowledged that the need to come up with appropriate preventive strategies that complement excellent clinical management and community health approaches to deal with the complex problem of acute poisoning. Thus, recognizing the limitations and moving forward on the premise that such future research can improve the findings, can prove beneficial in evidence and intervention to minimize the acute poisoning rates and effects.

Conclusion

Therefore, based on the study on acute poisoning cases in the emergency department of a tertiary care hospital in Rawalpindi from January 2020 to December 2023, the findings outlined some features where children are the most afflicted by accidental medical poisonings and adolescents and adults by intentional medical poisonings; pharmaceutical and pesticides were the primary types. It reinforces the role played by poisoning incidences in affecting negative clinical results especially when such indications are managed inadequately over time while stressing the importance of preventive steps like public awareness, health checkups for people with demerit intentions, and legal provisions on dangerous materials. Thus, this research contributes to broadening the ideas of emergency physicians and public health professionals about acute poisonings by reporting the results of a nationwide survey of demographic characteristics, types of poisoning, seasonal fluctuations, and clinical outcomes.

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