www.ijarp.com ISSN 2456-9992 Page: 01-13

International Journal Advanced Research Publications

Research Article

Volume: 02
Issue: 10

AWARENESS ON SAFE STORAGE OF MEDICINES

Sania Ansari, Vijay D. Gangan*, Annu Yadav, Sonia W. Puduparam, Aditi Mishra, Saniya Ansari, Sweety J. Vishwakarma and Sheetal Chaudhary

Department of Chemistry, Reena Mehta College of Arts, Commerce, Science and Management Studies, Bhayandar (W), Thane – 401101.

Article Received: 07 September 2026, Article Revised: 27 September 2026, Published on: 17 October 2026

***Corresponding Author: Vijay D. Gangan**

Department of Chemistry, Reena Mehta College of Arts, Commerce, Science and Management Studies, Bhayandar (W), Thane – 401101.

Doi: https://doi-doi.org/101555/ijarp.9768

ABSTRACT

Safe storage of medicines is an essential aspect of healthcare that ensures the quality, safety, stability, and therapeutic effectiveness of pharmaceutical products. Improper storage conditions, such as exposure to excessive heat, moisture, direct sunlight, and inappropriate temperatures, may lead to medicine degradation, reduced efficacy and potential health risks. The present study aims to create awareness among the general public regarding the importance of proper medicine storage practices and to assess their knowledge about safe handling, storage conditions, expiry dates, and disposal of unused medicines.

The study focuses on educating individuals about maintaining medicines in their original packaging, storing them in a cool and dry place according to manufacturers' instructions, keeping medicines out of the reach of children, and following specific refrigeration requirements wherever necessary. Special emphasis is placed on preventing accidental poisoning, medication errors, and the use of expired or improperly stored medicines. Public awareness can be promoted through questionnaires, educational campaigns, counselling sessions, posters, and community-based activities.

The study highlights the important role of pharmacists and healthcare professionals in providing appropriate guidance regarding medicine storage and disposal. Improving public knowledge and encouraging responsible storage practices can contribute to better medication safety, preservation of medicine quality, and overall public health.

KEYWORDS: Safe Storage of Medicines, Public Awareness, Medication Safety, Pharmaceutical Stability, Storage Conditions, Expiry Date, Patient Education, Pharmacist, Medicine Disposal, Public Health etc.

INTRODUCTION

Medicines play an important role in preventing and treating diseases and maintaining good health. However, medicines must be stored properly to maintain their quality, safety, and effectiveness. Improper storage[1] of medicines can reduce their effectiveness and may cause harm to health.

Safe storage of medicines means keeping medicines in suitable conditions according to the instructions given on their packaging or by a pharmacist[2]. Medicines should be stored in a cool, dry place away from direct sunlight, heat, and moisture. Some medicines require refrigeration, while others should be kept at room temperature. Therefore, it is important to read the storage instructions carefully[3].

Medicines should always be kept in their original packaging with the label intact. The expiry date should be checked regularly, and expired or damaged medicines should not be used. Medicines must also be kept out of the reach of children and pets to prevent accidental poisoning. They should not be stored near food items or in places such as bathrooms where humidity is high.

Lack of awareness about the safe storage of medicines is a common problem. Many people may not know the correct storage conditions or the importance of checking expiry dates. Creating awareness about proper medicine storage can help prevent medicine wastage, accidental misuse, and health risks.

Temperature is an important factor[4] affecting the quality of medicines. Excessive heat may damage certain medicines, while freezing can also affect some products. Therefore, medicines should not be exposed to unsuitable temperatures. People should always read the storage instructions printed on medicine packaging and follow the advice of healthcare professionals.

Moisture can also affect the quality of medicines, particularly tablets and capsules. Storing medicines in damp places, such as bathrooms near showers, may expose them to humidity. Medicines should be kept in their original containers with labels and instructions intact. This helps people identify the medicine correctly and understand its storage requirements[5].

Therefore, the present project, “Awareness on Safe Storage of Medicines,” aims to educate people about the importance of proper medicine storage, checking expiry dates, maintaining

suitable storage conditions, and following safety precautions to promote the safe and effective use of medicines.

LITERATURE REVIEW

1. Jogdand *et al.* (2013)

Jogdand and colleagues conducted a study on knowledge and patterns of medicine use among rural people in Maharashtra. The study examined medicines stored at home and people's knowledge of expiry dates and side effects. The findings highlighted the importance of improving public awareness about the safe use and storage of medicines.

2. World Health Organization (WHO), 2011

The World Health Organization published guidelines on the storage and transportation of medicines that are sensitive to temperature. These guidelines emphasized maintaining appropriate storage conditions to protect the quality and safety of medicines.

3. Lee and Schommer (2022)

Lee and Schommer conducted a study titled "Medication Use and Storage, and Their Potential Risks in US Households." The study examined medicines stored in households and the potential risks they may pose to children, pets, and the environment. It highlighted the importance of responsible medicine storage and management.

4. Suryawanshi *et al.* (2024)

Suryawanshi and colleagues conducted a study titled "Storage, Reuse and Disposal Practices of Home-Stored Medicines in Urban Households in Pune, India." The study investigated how medicines were stored, reused, and disposed of in urban households. It highlighted the importance of promoting safe medicine storage practices and preventing the inappropriate reuse of medicines.

5. More *et. al.* (2024)

More and colleagues conducted a study on knowledge, attitudes, and practices regarding the storage and safe disposal of unused medicines among medical and dental personnel. The study identified gaps in safe disposal practices and emphasized the need for better awareness and education regarding medicine safety.

6. World Health Organization (WHO), 2003

The World Health Organization published guidelines on good storage practices for pharmaceutical products. These guidelines highlighted the importance of maintaining suitable temperature, humidity, cleanliness, and security during medicine storage. Proper storage helps maintain the quality and effectiveness of medicines.

METHODOLOGY

In order to understand people's awareness about the safe storage of medicines, a short questionnaire was prepared before starting the activity. The pre-test helped in identifying their basic knowledge about medicine storage practices, checking expiry dates, protecting medicines from heat and moisture, and keeping medicines away from children.

Following this, the topic was explained using simple examples, medicine packaging demonstrations, and interactive discussions. Participants were educated about the importance of storing medicines in suitable conditions, checking expiry dates, and following the instructions printed on medicine labels.

After the completion of the activity, a post-test was conducted to assess the improvement in participants' knowledge and their understanding of safe medicine storage practices in daily life.

A) QUESTIONNAIRE

Pre-Test: Awareness on Safe Storage of Medicines.

1. Do you check the expiry date before using a medicine? (Yes/No)

ANSWER:About 93.9% of respondents always check the expiry date before using a medicine, while 6.1% check it sometimes.

2. Where do you usually store medicines?

ANSWER: About 72.7% of respondents store medicines in a medicine cabinet, while 18.2% keep them in the bedroom or on a table. The remaining respondents store medicines in other places, such as the refrigerator, kitchen, or other locations.

3. Do you keep medicines away from direct sunlight?

ANSWER: About 78.8% of respondents keep medicines away from direct sunlight, while 12.1% do not, and 9.1% do so sometimes.

4. Do you read the storage instructions written on the medicine package?

ANSWER: About 54.5% of respondents always read the storage instructions on medicine packages, while 42.4% read them sometimes and 3.0% never read them.

5. Do you keep medicines out of reach of children?

ANSWER: The survey results show that most respondents keep medicines away from children. However, some respondents do not follow this practice consistently.

6. Do you keep medicines in their original packaging?

ANSWER : A strong majority of respondents (81.8%) stated that they always keep medicines in their original packaging, while 18.2% reported doing so sometimes.

7. Do you check the medicine package for damage before using it?

ANSWER: A large majority (72.7%) of respondents always check the medicine package for damage before use, 21.2% check sometimes, and 6.1% never check.

8. Do you avoid storing medicines in places with high heat or moisture?

ANSWER: 69.7% of respondents answered yes, actively avoiding high heat or moisture for medicine storage, while 15.2% do so sometimes, and 15.2% answered no.

9. What do you do with expired medicines?

ANSWER : Most respondents (72.7%) throw expired medicines in the dustbin, 18.2% return them to a pharmacy or medicine take-back facility, and 6.1% indicated other practices.

10. Do you check the label/instructions before storing a medicine?

ANSWER : Over half of the respondents (54.5%) always check the label or instructions before storing a medicine, 39.4% check sometimes, and a small proportion never check.

11. Do you think proper storage of medicines is important for safety and effectiveness?

ANSWER: An overwhelming majority (96.8%) of respondents agreed (Yes) that proper storage is important for medicine safety and effectiveness, while a minor fraction remained not sure.

POST-TEST: AWARENESS ON SAFE STORAGE OF MEDICINES.

1. Should you check the expiry date before using a medicine? Yes/No

ANSWER: All respondents should check the expiry date before using any medicine.

2. Should medicines be stored in a cool and dry place? Yes/No

ANSWER: Medicines should be stored in a cool and dry place, according to the instructions on the package.

3. Should medicines be kept away from direct sunlight? Yes/No

ANSWER: Yes, medicines should be protected from direct sunlight.

4. Should medicines be kept out of reach of children? Yes/No

ANSWER: Yes, medicines should be kept in a secure place away from children.

5. Should medicines be kept in their original packaging? Yes/No

ANSWER: Yes, medicines should generally be kept in their original packaging to protect them and retain important information.

6. Should you read storage instructions before storing medicines? Yes/No

ANSWER : Yes, storage instructions should be read carefully before storing medicines.

7. Should medicines be stored in places with high heat or moisture? Yes/No

ANSWER: No, medicines should be stored according to their recommended temperature and humidity conditions.

8. Should you use expired medicines? Yes/No

ANSWER: No, expired medicines should not be used.

9. Should you check the medicine package for damage before use? Yes/No

ANSWER: Yes, the medicine package should be checked for damage before use.

10. Is proper storage of medicines important for safety and effectiveness? Yes/No

ANSWER: Yes, proper storage helps maintain medicine quality and safety.

B) INTERVIEW QUESTIONNAIRE: AWARENESS ON SAFE STORAGE OF MEDICINES.

1. Do you check the expiry date before using a medicine? Yes/No

ANSWER: About 94% of participants reported that they check the expiry date before using medicines.

2. Where do you usually store medicines?

ANSWER: About 73% of participants reported that they store medicines in a medicine cabinet.

3. Do you keep medicines away from direct sunlight? Yes/No

ANSWER: About 79% of participants reported that they keep medicines away from direct sunlight.

4. Do you read the storage instructions written on medicine packages? Yes/No

ANSWER: About 55% of participants reported that they always read the storage instructions.

5. Do you keep medicines out of reach of children? Yes/No

ANSWER: About 85% of participants reported that they keep medicines out of children's reach.

6. Do you keep medicines in their original packaging? Yes/No

ANSWER: About 90% of participants reported that they keep medicines in their original packaging.

7. Do you check medicine packages for damage before using them? Yes/No

ANSWER: About 90% of participants reported that they check medicine packages for damage before use.

8. Do you avoid storing medicines in places with high heat or moisture? Yes/No

ANSWER: About 85% of participants reported that they avoid storing medicines in places with high heat or moisture.

9. What do you do with expired medicines?

ANSWER: About 70% of participants reported that they prefer returning expired medicines to a pharmacy or an appropriate medicine take-back facility.

10. Do you think proper storage of medicines is important for safety and effectiveness? Yes/No

ANSWER: About 97% of participants agreed that proper storage of medicines is important for safety and effectiveness.

C) DEMONSTRATION AND ACTIVITIES :

The demonstration and awareness activities were conducted to educate participants about the importance of safe storage of medicines. Simple examples and practical activities were used to explain proper medicine storage practices.

1. Demonstration of Medicine Packaging

Different medicine strips, bottles, and containers were shown to the participants. They were taught how to identify the medicine name, manufacturing date, expiry date, and storage instructions printed on the packaging.

2. Checking Expiry Dates

Participants were shown how to locate and read the expiry date on medicine strips and bottles. They were informed about the importance of checking expiry dates before using medicines and avoiding expired medicines.

3. Demonstration of Proper Storage Conditions

Participants were explained the importance of storing medicines in a cool, dry place away from direct sunlight and excessive heat. They were also informed that some medicines require refrigeration according to the manufacturer's instructions.

4. Awareness About Keeping Medicines Away from Children

Participants were educated about keeping medicines in a secure place, out of the reach and sight of children, to prevent accidental ingestion.

5. Identification of Safe and Unsafe Storage Practices

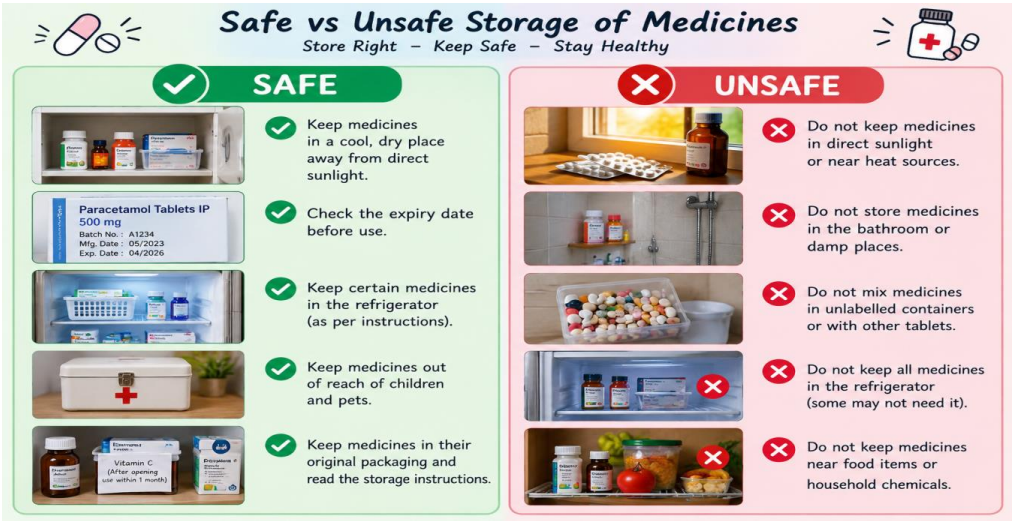
Examples of suitable and unsuitable medicine storage locations were discussed. Participants learned why bathrooms, damp places, and areas exposed to direct sunlight may be unsuitable for storing many medicines.

The demonstration and awareness activities helped explain the importance of safe medicine storage. Participants were educated about checking expiry dates, protecting medicines from heat and moisture, keeping medicines away from children, and following storage instructions. These activities aimed to encourage safe and responsible medicine storage practices at home.

Medicines Storage:



Safe And unsafe Storage of medicines:



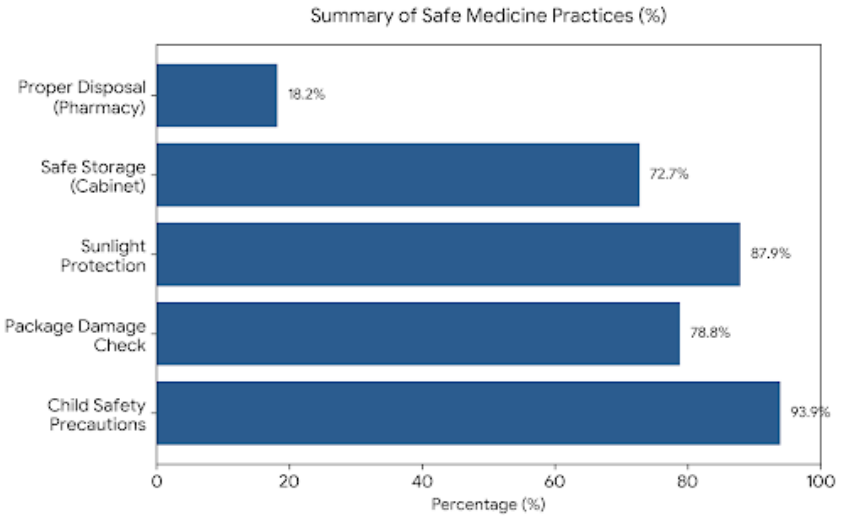
Checking Expiry Date:



OBSERVATIONS

1. Most participants checked the expiry date before using medicines.
2. Most participants stored medicines in a medicine cabinet.
3. Some participants kept medicines away from direct sunlight.
4. Many participants read the storage instructions written on medicine packages.
5. Most participants kept medicines out of reach of children.
6. Many participants stored medicines in their original packaging.
7. Most participants checked medicine packages for damage before use.
8. Some participants were aware of the harmful effects of heat and moisture on medicines.
9. Some participants knew how to dispose of expired medicines safely.
10. Most participants understood the importance of proper medicine storage for safety and effectiveness.
11. Some participants were unaware that improper storage can affect the quality of medicines.
12. Participants learned the importance of keeping medicines in a clean and dry place.
13. Some participants needed more information about the proper disposal of expired medicines.
14. Participants understood the importance of following the storage instructions mentioned on medicine labels.
15. The awareness activity helped participants understand the importance of safe medicine storage practices.

DATA ANALYSIS



- Disposal of Expired Medicines: Majority of the participants (72.7%) throw expired medicines in the dustbin, while 18.2% return them to a pharmacy or medicine take-back facility. Only a small fraction keep them for future use (6.1%) or other methods.
- Medicine Storage Location: Most respondents store their medicines in a medicine cabinet (72.7%) or in a bedroom/table (18.2%), with smaller portions using the kitchen or refrigerator.
- Sunlight Protection: A significant number of participants (87.9%) recognize that medicines should be kept away from direct sunlight, reflecting good general awareness.
- Package Damage Inspection: Around 69.7% to 78.8% of individuals consistently check medicine packaging for any signs of damage before usage.
- Child Safety Precautions: A vast majority (93.9%) ensure that medicines are kept safely out of the reach of children to prevent accidental ingestion.

INTERVIEW SUMMARY

The pre-test was conducted to assess respondents' initial knowledge of safe medicine storage. The findings showed that some respondents lacked awareness about proper storage conditions, expiry dates, and medicine safety. This highlighted the need for an awareness programme.

The interview findings showed that although many respondents followed basic safety practices, some did not regularly read storage instructions. The interaction helped identify common mistakes and areas requiring further education. It also encouraged respondents to adopt safer medicine storage habits.

POST-TEST SUMMARY

The post-test was conducted after the awareness programme to evaluate improvements in knowledge. The results showed better understanding of expiry dates, storage instructions, protection from sunlight, and keeping medicines away from children.The educational activity helped respondents understand the importance of storing medicines according to the instructions on their packaging. It also highlighted the need to keep medicines away from children and dispose of expired medicines safely. Overall, the post-test helped assess the effectiveness of the awareness programme.

PER-TEST SUMMARY

An interview was conducted with respondents to understand their medicine storage practices. Most respondents checked expiry dates, but some did not regularly read storage instructions.

The interview highlighted the importance of educating people about safe medicine storage.The findings helped identify gaps in awareness regarding expiry dates, storage conditions, medicine packaging, and child safety. These results highlighted the need for an awareness programme.The pre-test also helped understand the respondents' existing habits and practices related to medicine storage. Some respondents were unaware of the importance of following storage instructions and protecting medicines from direct sunlight. These findings provided a basis for planning educational activities to improve awareness.

RESULTS AND DISCUSSION

1. Expiry Date Checking:

The survey showed that 93.9 % of respondents always check the expiry date before using medicines, while 6.1 % check it sometimes.

2. Place of Medicine Storage:

The results showed that 72.7 % of respondents store medicines in a medicine cabinet, 18.2 % on a bedroom table, and 3 % each in the refrigerator, kitchen, and other places.

3. Protection from Direct Sunlight:

The survey found that 78.8 % of respondents keep medicines away from direct sunlight, 12.1 % do not, and 9.1 % do so sometimes.

4. Reading Storage Instructions:

The results showed that 54.5 % of respondents always read medicine storage instructions, 42.4 % read them sometimes and 3 % never read them.

5. Overall Result:

The survey included 33 respondents. The findings indicate that most respondents check expiry dates and keep medicines away from direct sunlight. However, more awareness is needed about reading storage instructions and storing medicines correctly.

The results indicate that most respondents were aware of checking expiry dates before using medicines. However, some respondents did not consistently read storage instructions, showing the need for further awareness.

The findings also showed that medicine cabinets were a common storage location. However, medicines should always be stored according to the instructions provided on their labels, as different medicines may require different storage conditions.

Keeping medicines away from direct sunlight and protecting them from unsuitable temperatures and moisture are important safety practices. Medicines should also be kept securely away from children to prevent accidental ingestion.

Overall, the study highlights the importance of educating people about safe medicine storage. Awareness programmes can encourage individuals to check expiry dates, read labels, follow storage instructions, and dispose of expired medicines safely.

CONCLUSION

The project "Awareness on Safe Storage of Medicines" was conducted to understand the importance of storing medicines safely and to create awareness among people about proper medicine storage practices. Safe storage of medicines is essential for maintaining their quality, effectiveness, and safety. Improper storage can affect the quality of medicines and may make them less effective.

During this project, information was collected through a questionnaire involving 33 respondents. The results showed that 93.9 % of respondents always check the expiry date before using medicines. It was also found that 72.7 % of respondents store medicines in a medicine cabinet, while 78.8 % keep medicines away from direct sunlight. However, only 54.5 % of respondents reported that they always read the storage instructions mentioned on medicine packaging. These findings show that although many people follow some safe storage practices, there is still a need to improve awareness about all aspects of medicine storage.

The project highlighted that medicines should be stored according to the instructions given on their packaging or by a healthcare professional. They should be kept in their original packaging whenever possible, protected from unsuitable heat, moisture, and direct sunlight, and stored out of the reach of children. Medicines that require refrigeration should be kept at the recommended temperature. Expired or damaged medicines should not be used and should be disposed of safely according to the advice of a pharmacist or healthcare professional.

The project also helped to understand the importance of checking expiry dates, reading labels carefully, and keeping medicines organised at home. Awareness programmes, posters, demonstrations, and questionnaires can help educate people about the risks associated with improper medicine storage. Family members should also be encouraged to follow safe storage practices and avoid sharing medicines without proper medical advice.

In conclusion, safe storage of medicines is an important part of maintaining health and preventing medicine-related problems. The project helped identify common storage practices and areas where further awareness is required.

REFERENCES

1. World Health Organization (WHO). Good Storage and Distribution Practices for Medical Products (2020). Link : https://www.who.int/publications/m/item/trs-1025-annex-7
2. U.S. Food and Drug Administration (FDA). Don't Be Tempted to Use Expired Medicines.
   Link : https://www.fda.gov/drugs/safe-disposal-medicines/dont-be-tempted-use-expired-medicines
3. U.S. Food and Drug Administration (FDA). Disposal of Unused Medicines: What You Should Know.Link: https://www.fda.gov/drugs/safe-disposal-medicines/disposal-unused-medicines-what-you-should-know.
4. World Health Organization (WHO). Guidelines on Pharmaceutical Products.
   Link: https://www.who.int/teams/health-product-and-policy-standards/standards-and-specifications/norms-and-standards-for-pharmaceuticals/guidelines
5. Primary Data. Questionnaire survey conducted with 33 respondents for the project "Awareness on Safe Storage of Medicines" (2026).