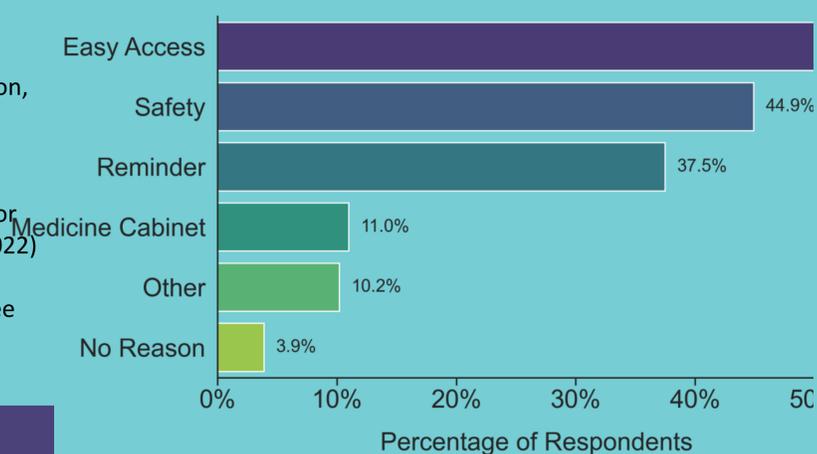


Climate Change and Medicine Storage: Understanding Patient Practices and Safety Risks

Background

1. Most UK medicines are licensed for storage $\leq 25^{\circ}\text{C}$
2. Heat and humidity accelerate drug degradation, reducing efficacy
3. Medicines are tightly controlled in the supply chain but not in patients' homes
4. UK homes are increasingly overheating: Indoor overheating rose from 20% (2011) to 82% (2022) in UK homes.
5. UK temperatures may exceed 40°C every three years by 2100¹

Reasons for Storage Location
(Multiple responses allowed)



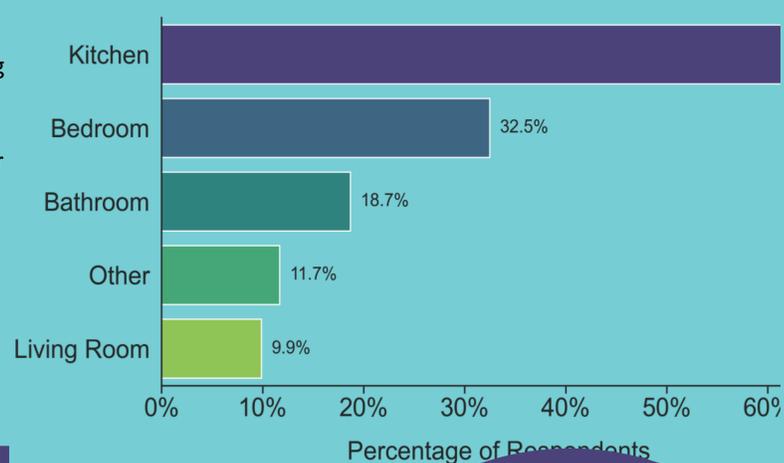
Aim and Objectives

AIM: The research aimed to explore patient attitudes, practices and knowledge regarding the storage of medicines in their own homes.

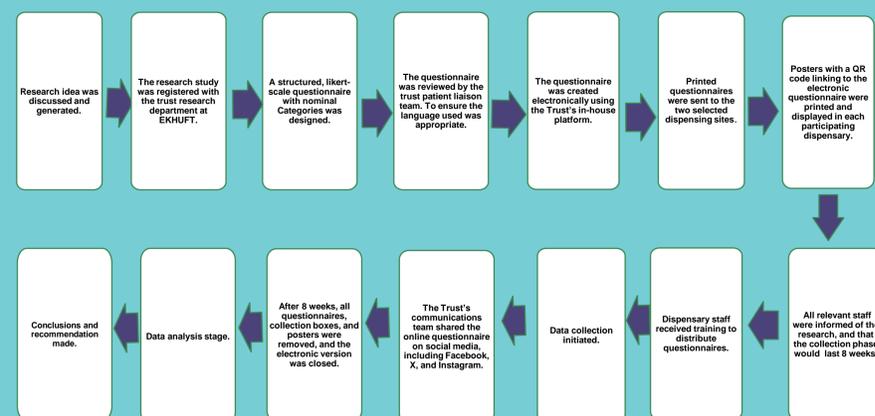
OBJECTIVES: The research focused on the following objectives:

1. Where do patients store their medicines in their home, and why?
2. To determine if current storage practices are compliant with healthcare professionals and/or manufacturing recommendations.
3. To assess if current storage practices could be challenged by manmade climate change.

Where do you typically store your medicines at home
(Multiple responses allowed)



Method and Materials



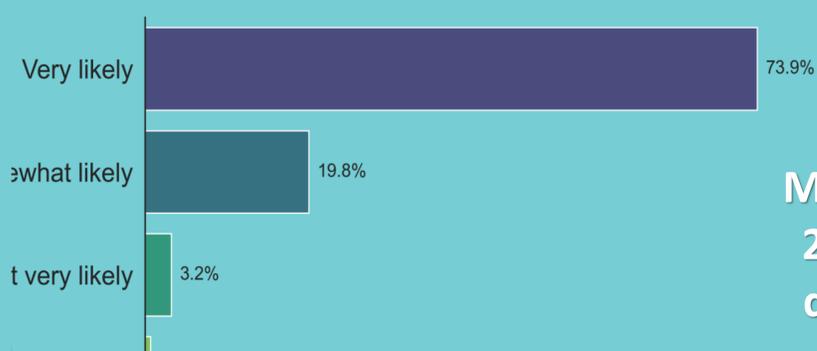
71% Had a designated storage location, mainly the kitchen.

78% Did not look at the manufacturers recommendations guidance on medicine storage locations.

Results

The survey included **283** participants, of whom 72% identified as female and 0.71% as Other, with ages ranging from 18 to 44 years.

Likelihood of Following Medicine Storage Instructions



Most homes already exceed 26°C for extended periods during summer months in the UK(3)

Conclusion and Relevance

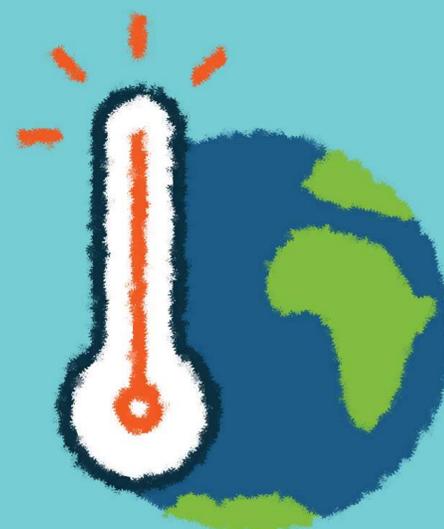
Rising indoor temperatures and humidity increasingly challenge medicine stability in domestic settings across Europe. Many homes already exceed recommended storage limits during warmer periods, particularly in older or poorly insulated housing. Despite guidance to store medicines in cool, dry environments, patients frequently store them in heat- and humidity-prone locations such as kitchens and bathrooms, largely due to convenience, ease of access, and child safety.

More than half of participants were unaware of the risks associated with improper storage, despite expressing willingness to receive guidance. Current storage guidance typically specifies a 25°C upper limit but does not reflect fluctuating domestic conditions. Engagement with existing advice is limited, and storage counselling is rarely provided at the point of dispensing. This highlights domestic medicine storage as an under-recognised patient safety issue.

Addressing this issue requires a shift in how medicine storage and its environmental context are addressed in pharmacy education and practice. Formal training on sustainability and the health impacts of environmental change has historically been limited, and while professional standards increasingly acknowledge environmental responsibility, implementation remains inconsistent.

As a result, the impact of suboptimal storage on medicine efficacy and patient outcomes is poorly characterised.

Pharmacy professionals are well positioned to address this gap by integrating clear, practical storage advice into routine consultations. Strengthening education, improving consistency of counselling, and supporting further research into real-world storage conditions are essential to safeguarding medicine quality and patient safety in home settings.



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