

# An analysis of the third World Health Organization's Global Safety Challenge 'Medication Without Harm' patient-facing materials: an exploratory descriptive study

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## Abstract

**Objectives** To evaluate patients' views on the content and use of the 'Five Moments for Medication Safety' materials developed as part of the World Health Organization's 'Medication Without Harm' Global Patient Safety Challenge. These comprise a booklet, flyer, infographic poster, pamphlet and mobile application. They include recommended questions for patients to ask healthcare professionals to gain a better understanding of their medication.

**Methods** Structured interviews were conducted with members of the public who entered an outpatient pharmacy in a London teaching hospital, using a combination of open and closed questions. Qualitative data were analysed thematically. Quantitative data were analysed descriptively. Chi-Squared, Fisher's Exact, Mann Whitney U and Kruskal Wallis tests were used to test for associations between responses and variables such as age.

**Results** We approached 147 people; 100 (68%) agreed to take part. Of these, 83% thought that the materials would be 'quite' or 'very' useful. Potential barriers to their use were patients being of the view that they already ask healthcare professionals about their medicines or that there would be limited time available to answer their questions during consultations. Fifty nine percent of participants stated that they would prefer to be given the materials in waiting areas before seeing a healthcare professional; 61% thought they should be displayed on television screens in general practice surgeries. Age was significantly associated with preference for the mobile application (Chi-squared test,  $p < 0.01$ ), with younger people preferring this format.

**Conclusions** Patients' views of the 'Five moments for medication safety' materials were generally positive. Our findings suggest that they should be displayed on television screens in waiting areas and given to patients prior to appointments. More advice is needed for patients on how to incorporate the questions suggested in the resources into a brief healthcare consultation.

#### Key messages

What is already known on this subject

- An estimated 237 million medication errors occur each year in England, often resulting in avoidable adverse drug effects.
- Communication breakdown between healthcare professionals and patients is responsible for over 60% of all reported medication errors and adverse effects.
- Medication safety can be improved by effective patient engagement about medication.

What this study adds

- Eighty three percent of patients interviewed thought that the World Health Organization materials, that have been designed to engage patients in asking healthcare professionals about their medicines, would be 'quite' or 'very' useful.
- However, more advice is needed for patients on how to incorporate the suggested discussions into a brief healthcare consultation.

#### Keywords

Medication without harm, patient involvement, health education materials, medication safety, patient safety

#### Introduction

Patient safety has been identified as the most important quality improvement activity in healthcare<sup>[1]</sup> and a priority among patients.<sup>[2]</sup> An estimated 237 million medication errors occur each year in England alone, with 66 million of these clinically significant.<sup>[3]</sup> The resulting burden of definitely avoidable adverse drug reactions has been estimated to be £98.5 million in NHS costs per annum.<sup>[3]</sup>

Patient involvement has been advocated as an important way to improve safety.<sup>[4-5]</sup> An English Department of Health report stated the need to create a clear role for patients in helping to achieve safety goals.<sup>[6]</sup> Previously, strategies to reduce preventable adverse events were targeted mainly on changing systems of care and professional behaviour, but there also is a growing interest in involving patients in safety initiatives.<sup>[7-8]</sup> Several international safety initiatives have demonstrated the importance of patient engagement.<sup>[9-10]</sup> Research suggests that communication breakdown between healthcare professionals and patients is responsible for over 60% of all reported medication errors and adverse effects, and that medication safety can be improved by effective patient engagement about medication.<sup>[11]</sup>

'Patients and the public' has been identified as a specific domain to target in the third World Health Organization (WHO) Global Patient Safety Challenge 'Medication Without Harm.'<sup>[12]</sup> This aims to reduce severe avoidable medication-related harm by 50% globally within 5 years, by 2022. As part of this campaign, The WHO developed the 'Five moments for medication safety' patient engagement tool, which focuses on five key moments where action by the patient and/or carer can reduce the risk of medication-related harm: 'Starting a medication', 'Taking my medication', 'Adding a medication', 'Reviewing my medication' and 'Stopping my medication'. There are multiple patient-facing materials that portray the 'Five Moments for Medication Safety' message, comprising a booklet, flyer, infographic poster, pamphlet and mobile application. These materials suggest questions that a patient can ask to enable them to have a better understanding of their medication(s) and treatment. Each moment includes five questions, some of which are for the patient to ask themselves and some of which are for patients to ask healthcare professionals.

There is limited evidence exploring the patient's perspectives of educational campaign materials<sup>[13]</sup> with most studies focussing on readability.<sup>[14-17]</sup> We are not aware of any published evaluations of the 'Five moments for medication safety' engagement materials and it is not clear how they should best be used in practice. We therefore aimed to explore patients' perspectives of the WHO resources and their views on how they would like to receive them.

## Methods

### Study design and setting

This was an exploratory and descriptive study in a convenience sample of patients in the outpatient pharmacy and nearby coffee shop of an NHS Trust teaching hospital in London. Data collection took place between November and December 2019.

### Study population and sample size

Participants comprised patients and the public who entered the outpatient pharmacy and were willing to participate. Non-English-speaking patients and children under 16 were excluded. We aimed to conduct 100 interviews to allow exploratory analysis of associations between variables. A pragmatic approach was used to determine sample size, taking into consideration the timeframe for data collection.

### Data collection

A structured interview schedule was developed that focussed on participants' views of the patient-facing materials. Participants were asked their views about the materials, their preferences for the different formats, and how they would like to receive them (supplementary file 1), using a combination of open and closed questions. The interview schedule was piloted, after which minor adjustments were made.

Potential participants were identified by a researcher and approached after they had been assisted at the pharmacy counter. Participants were also approached if they were seen waiting within the pharmacy or adjacent hospital coffee shop. Participants were given a brief explanation of the study and invited to take part. If they wished to participate, they were then handed the different 'Five moments for medication safety' patient-facing materials: the booklet, pamphlet, flyer, poster and mobile application [loaded onto a researcher's smartphone]. After reading through the resources, the patient was verbally asked each question from the interview schedule.

### Data analysis

A combination of quantitative and qualitative analysis was used. Data from open-ended questions were analysed to identify recurring patterns of meaning using inductive thematic analysis. This involved familiarisation with the data by repeated reading of the interview schedule to identify emerging themes; data were then coded against these themes. A second researcher checked the themes and coding.

Quantitative data were coded and entered into an SPSS database (version 26), and summarised descriptively. Inferential analysis was then carried out to explore whether

there were significant associations between patients' views regarding the materials and their age, gender, level of education and ethnicity. Chi-squared test, and Fisher's exact test, Mann-Whitney U and the Kruskal Wallis test were used as appropriate;  $p < 0.05$  was considered statistically significant.

#### Ethics

This study was approved as a service evaluation at the relevant NHS trust. All participants provided verbal informed consent.

#### Results

##### Response rates

In total, 147 people were approached, of whom 100 (68%) agreed to take part. Of those declining, nine reported that were too unwell to take part, eight said they didn't speak English, seven did not have time, three were too tired or had waited too long, two had completed too many questionnaires/paperwork already, two did not want to sit down and read through the resources, one was not interested in the resources and one reported that they had received bad news so doesn't feel like talking to anyone. Fifteen did not give a reason.

Table 1 presents descriptive information on participants' demographics.

Socio-demographic variables	Participants ( <i>n</i> )	Percent of all participants
<b>Gender</b>		
Male	37	37
Female	62	62
Prefer not to say	1	1
Other	0	0
<b>Age</b>		
<18-34	25	25
35-54	40	40
55-64	16	16
65 and over	19	19
<b>Ethnic group</b>		
White	56	56
Mixed or multiple ethnic groups	6	6
Asian or Asian British	19	19
Black/ African/ Caribbean/ Black	11	11
British		
Other	8	8
<b>Conditions</b>		
Severe visual impairment	4	4
A learning difficulty	2	2
None of the above	94	94
<b>Is English your first language?</b>		
Yes	84	84
No	16	16
Prefer not to say	0	0
<b>Highest level of education completed</b>		
Degree or equivalent	58	56
Higher education	10	10
A-Levels or equivalent*	6	6
GCSEs (A*-C) or equivalent*	15	14
Other qualifications	7	7
None	6	6
Don't know	0	0
Prefer not to say	2	2
<b>Are you a healthcare worker?</b>		
Yes	12	12
No	88	88
Prefer not to say	0	0

**Table 1** Participants' characteristics. \* In England and Wales, GCSEs are usually sat at age 15-16. A-Levels are usually sat at age 17 or 18 after two further optional years of schooling.

### Respondents' views of the 'Five moments for medication safety' materials

Participants generally viewed the materials positively, with 83% (of 100) stating that the materials were 'quite useful' or 'very useful'. Responses to open questions suggested that they were of the view that the materials were informative. However,

some expressed concern about how to integrate the suggested questions into a short consultation with a healthcare professional. They were of the view that they might forget the questions or that there would not be enough time for healthcare professionals to answer them all. One participant expressed the opinion that this may be a specific concern during telephone consultations. Some were of the view that there was too much information on the materials. Others were of the view that the materials would be less useful for those who already asked questions.

*'Would be informative for some people, just not for me as I tend to ask these questions anyways. Really useful for some people.'* (participant 76).

*'This is useful to some people; more useful to older people. It is less useful to those who can advocate for themselves'* (participant 45)

A minority view expressed by some participants is that they did not have the authority, or didn't feel the necessity to question healthcare professionals

*'I assume the doctor wouldn't prescribe things that interact'* (participant 52)

The poster was the most popular format overall. However, different participants expressed preferences for different materials. Table 2 outlines themes that were identified in regard to each of the poster, flyer, pamphlet, booklet and mobile application. Table 3 summarises general themes around how the materials could be improved.

**Participants' views about the 'Five moments for medication safety' poster**

- Liked how it had 'more visual illustrations' and was 'concise'
- Provided a 'good overview' whilst still being 'engaging' and 'user-friendly'.
- 'Easier to read' as it contained 'less information' and was 'all on one page'
- 'Simplistic' and 'not overwhelming', which allowed the 'message to easily get across'.
- 'Attracts more of the general public'
- 'Can put on wall'

**Suggestions for improvement:**

- 'Make poster bigger size'
- 'Remove the small print'

**Participants' views about the 'Five moments for medication safety' flyer****Amount of information:**

- 'Contained all the information on one page' so they could 'quickly scroll through' and they liked how it was 'easy to read' and 'to the point.'
- 'Too much information', 'I would put the flyer in the bin straight after'
- 'Too much on one page'

**Suggestion for improvement:**

'Break down the information into subsections' as currently, it is 'not very eye-catching.'

**Participants' views about the 'Five moments for medication safety' pamphlet**

- Felt it was a 'bit of a faff', especially if 'having to open it up in public areas'
- There was 'no need for the notes pages' provided in the booklet, instead can just 'write underneath if needed' (minority view)
- 'Don't need the extra back pages'
- There was 'no need for the pamphlet or booklet' (minority view)

**Suggestions for improvement:**

- 'More information about the purpose of the material'
- 'More welcoming front page'

**Participants' views about the 'Five moments for medication safety' booklet**

- Liked that it was 'small, compact' so 'easier to manage'
- It looked 'like too much'(minority view)
- There was 'no need for the pamphlet or booklet' (minority view)

**Notes pages:**

- Participants appreciated the extra 'notes pages', especially helpful for the 'elderly' and 'those with short memory'. The majority who liked the booklet stated it was because of the 'space for notes'

**Participants' views about the 'Five moments for medication safety' mobile application**

- 'Easier', 'more convenient'
- 'Saves paper'
- 'Easier to access' as 'phone is on person a lot of the time'
- Others stated they 'didn't use apps', instead preferring to 'write by hand'
- 'Aimed at younger people'
- 'Not everyone has access'

**Suggestions for improvement:**

- 'Have voice recognition so when the doctor speaks, the app turns it straight into text. This makes it easier for the patient and doctor, as they are useful questions'
- Contain 'more personalised information about their specific condition' and possibly 'have the ability to link with doctor and have everything on one app'.
- Have 'drop-down options rather than just free text for applicable questions (e.g. for dosing). Then data collection can be done from the app to improve medicines information and can use this to improve the app after a pilot.'

**Table 2** Respondents' views of the different materials with example quotes

**Information provided on the materials:**

- 'Reduce amount of information... make materials more concise'
- 'Highlight' or 'bold the main questions'
- 'Provide some form of contact details to access extra information'
- 'Make more personal for [patient] rather than just general questions'

**Title:**

- 'Five moments for medication safety' is 'vague', 'misleading' and not very 'informative about what the questions were about'.
- Title should be 'more direct' and 'punchier'. It should be 'patient-friendly' but also 'informative as to what the materials are about'
- Ideas suggested were: 'Do you have questions about your medications?' or 'Questions you could ask GP [General Practitioner] to improve your standard of care'
- One participant commented that especially since it has the term 'safety', patients 'wouldn't understand what the material is about'.

**Making materials more available for patients:**

- 'Have resources come up as the top result when searching related terms on a search engine'
- 'Have it on the NHS [National Health Service] website'
- 'Make as small, laminated cards to hand out instead of A4 paper'
- Make it 'more durable by making it into a ring-bound book'
- The 'paper should be compatible with writing, therefore not laminated' (minority view)

**Improving accessibility:**

- 'Have materials available in larger print, braille etc.'
- Make 'language/ words easier to understand' 'for those who don't have a high level of English'.

**Table 3** Respondents' general suggestions for how to improve the 'Five moments for medication safety' materials

Timings and settings for receiving the 'Five moments for medication safety' materials

Table 4 shows patients' preferences for where and when to receive the materials.

Method of receiving materials	Number of respondents (n=100)
Displayed on screens in GP practices	62
Given before seeing the healthcare professional	59
Handed out when being seen by the healthcare professional	36
Given during handing out of medicines by pharmacy	23
Displayed on televisions screens in hospitals	21
Displayed within community pharmacies	8
Displayed on notice boards around NHS settings	7
Displayed in other public places (see text)	4
Online	4

**Table 4** Participants' preferences for receiving the patient-facing materials (patients were able to select more than one option). GP: General Practitioner; NHS: National Health Service

The majority of participants expressed a preference for receiving the materials before going into a consultation, such as in the waiting area. Two suggested the materials should be sent out with appointment letters. Participants also suggested the materials be handed out at the pharmacy when patients were given their medicines. Other public settings suggested were bus stations, train stations, billboards, public toilets in NHS settings, universities, gyms, healthcare centres and support groups such as those run by the charity Age UK. The majority were of the view that they would want to take the materials home so they have time to read through them. However, some participants stated that they wouldn't take them home and would prefer to only use them for the current consultation.

#### Associations between demographics and preferences for different campaign material(s)

##### *Gender*

Females were significantly more likely to express a preference for the booklet than males ( $p=0.03$ ; Fisher's exact test; table 5). There was no association between gender and other preferences.

Variables	Respondents (%)			
	Male	Female	Other	Total
Mobile application	37.8	33.9	100	36
Flyer	35.1	30.6	0	32
Booklet	16.2	38.7	0	30
Poster	21.6	33.9	0	29
Pamphlet	8.1	6.5	0	7
No preferences	2.7	0	0	1

**Table 5** Participants' gender compared with their preferences for material(s) (patients were able to select more than one preference).

### *Age*

There was a statistically significant relationship between age and preference for the mobile application (Chi-Squared test,  $p < 0.01$ ), with visual analysis (figure 1) suggesting that younger participants preferred the mobile application. There were no significant associations between age and preference for the other materials.

### *Ethnic group*

There was a significant association between a participant's ethnic group and their preference for the poster (Fisher's Exact test,  $p = 0.01$ ) and flyer (Fisher's Exact test,  $p = 0.04$ ). Black / African / Caribbean / Black British people had the greatest preference for the poster. Patients who preferred the flyer mainly described themselves as being from 'other' ethnic groups.

### *Highest level of education completed*

Participants who had 'higher education' as their highest education level were significantly more likely to prefer the poster (Fisher's Exact Test,  $p = 0.03$ ). There was also a significant association between a patient's highest level of education being 'A-Levels or equivalent' and their preference for the mobile application (Fisher's Exact Test,  $p = 0.02$ ).

### *Participants' demographics and its effect on their opinions regarding the usefulness of the campaign material(s)*

There were no significant associations between perceptions of materials' usefulness and age (Mann-Whitney U,  $p = 0.18$ ), gender (Mann-Whitney U,  $p = 0.6$ ) or level of education (Mann-Whitney U,  $p = 0.54$ ).

## Discussion

Most participants were of the view that the 'Five moments for medication safety' materials were useful. They found the resources informative and were of the view they should be made available. Preferences for materials differed between participants. Some preferred materials that contained all the necessary information on one page as on the flyer whereas others preferred it broken up into sections. Having different types of patient-facing materials is therefore advantageous.

However, patients reported concerns over how they would integrate the suggested discussions into a healthcare consultation. In addition to this, a minority reported complete trust in their healthcare professionals and/or were unwilling to question them. Such patients may believe that healthcare professionals have the sole responsibility to provide safe, high-quality care. Healthcare professionals need to proactively engage with patients<sup>[11]</sup> as patients are more willing to participate in discussions if encouraged by a healthcare professional.<sup>[18-20]</sup> Nevertheless, in agreement with previous literature,<sup>[21]</sup> there were also many participants who stated that they do generally ask questions about their medications and are not satisfied with having a passive role in their health.

## Implications for Practice

Our findings suggest that the 'Five moments for medication safety' materials are valued by patients and should be used in practice. Healthcare professionals need to play a role in engaging patients and helping them integrate the questions into consultations.

The finding that 'one size does not fit all' in terms of the different materials may also be relevant to other patient resources and fits with the findings of previous research<sup>[22]</sup>. Having a range of materials and formats for patient facing materials is therefore an important consideration. A suggested improvement to the materials was that they would have been more beneficial if the materials were more personalised to the patient. This may be difficult to achieve in practice but this also supports a more individualised approach to patient safety rather than a 'one size fits all' approach.<sup>[13,23]</sup>

## Strengths and limitations

This study took a holistic patient-centred view of patient education materials rather than focussing on the technicalities of the materials, such as word count and sentence length. Another strength was that the different patient-facing materials portrayed the

same message and reiterated the same content, allowing direct comparisons to be made to identify patient preferences.

Limitations were that the study was only conducted in one hospital, only in the outpatient pharmacy, and that convenience sampling was used. As a result, it may not have been representative of the whole population. Additionally, non-English-speaking patients were excluded. This could limit findings as non-English-speaking patients could benefit from the materials if translated. Another limitation was that this study did not explore patients' understanding or retention of the information or the actual use of the behaviours promoted. Finally, as this was an exploratory study, we did not have sufficient power to carry out multi-variate analysis to test for confounding factors e.g. interactions between age and highest level of education attained.

### Conclusion

Participants generally had a positive view of the 'Five moments for medication safety' materials with different people having preferences for different materials. Further work is needed to help patients integrate the questions into a short consultation with a healthcare professional.

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