JOURNAL OF EVIDENCE-BASED MEDICINE

Journal of Evidence-Based Medicine ISSN 1756-5391

ARTICLE

Priority setting for resources to improve the understanding of information about claims of treatment effects in the mass media

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Keywords
Appraisal; benefits and risks; health risk; therapeutics; understanding.

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Received 1 July 2014; accepted for publication 8 April 2015.

doi: 10.1111/jebm.12153

Abstract

Objective: Claims about benefits and harms of treatments are common in the media. We engaged health journalists in prioritizing concepts of evidence-based medicine that we believe the public needs to understand to be able to assess claims about treatment effects; and which could improve how journalists report such information.
Methods: We conducted a three-day workshop with a group of Ugandan journalists in which we presented and explained the concepts. We asked journalists to prioritize groups of related concepts using four pre-specified criteria i.e. relevance of the concepts to journalists and their audiences; ease of comprehension; feasibility of developing resources for teaching the concepts and, whether such resources would potentially have an impact. Using a modified Delphi technique, participants ranked each group of concepts using these criteria on a scale of one to six (one = lowest; 6 = highest). We analyzed the rankings in real time using STATA statistical software.
Results: All six groups of concepts were considered relevant and comprehensible with scores of five and six on a scale of one to six. Twenty two out of 25 participants reported having understood the concepts well, with subjective scores of above 75 on a scale of one to 100.
Conclusion: Journalists in Uganda recognize the importance of evidence-based medicine concepts in assessing claims about benefits and harms of treatments to them and their audiences. They should be empowered to use these and similar concepts in order to improve how information about effects of treatments is relayed in the media.

Introduction

The ability of individuals to obtain, process, and understand basic health information is a critical element in making healthcare choices (1). However, such abilities are often limited in both the developed and developing world (2, 3). Evidence from studies evaluating people's understanding of informed consent (4, 5), randomization (6), risks (7, 8) and drug approval (9) among patients, their caregivers and the lay public suggests that people's ability to assess benefits and harms (effects) of treatments is low. These inadequacies often result in low uptake of preventative and curative interventions, and inappropriate utilization of health services (10). They also create communication barriers between health workers and patients (11, 12) and increase costs of care (13, 14).

Patients and health consumer groups are increasingly advocating for more participation in their healthcare, and are expected to assume more roles in the future. However, some individuals might not have sufficient capacity to understand critical health information and make well-informed healthcare choices (9, 15, 16). The high prevalence of self-care, including self-medication, in low-income countries compounds this problem, which also necessitates empowering the public to make appropriate evidence-based healthcare choices.

There have been numerous efforts to improve population health outcomes through focused health communication and health education. However, it is not clear to what extent this empowers people to critically evaluate health information and make decisions based on results of such an appraisal process. This notwithstanding, the long-term success of any health communication campaign is likely to be heavily reliant on the population's ability to synthesize, understand and appraise health messages.

The media plays a central role in conveying health information to the public (17–21) and influences the formation of public perceptions and opinions about healthcare choice (22). The media also presents opportunities to deliver key messages about appraising healthcare information (23) and making informed healthcare choices. In Uganda, liberalization of the media in the early 1990s resulted in an increase in the number of media houses, with over 100 registered radio stations and over 40 television channels (24). Persuasive health product adverts and claims of effects of treatments and wellness products are commonplace. Evidence from elsewhere has revealed that some of the health information conveyed through the media may be erroneous, unsubstantiated, biased, misleading, and sometimes driven by commercial interests (25–27).

Improving the ability of journalists and their audiences to evaluate health information might improve the quality and relevance of information communicated through the media and how that information is understood and used by the public.

To address the above challenge the Informed Healthcare Choices research project is being conducted in Uganda with the aim of developing and evaluating resources that could be used by journalists and their audiences (the general public) to appraise claims about the effects of treatments. This paper presents the participatory process and experiences from the first phase of the project that engaged journalists as key stakeholders in the identification and prioritization of key concepts that are important for people to understand in order to improve people's ability to assess claims about treatment effects (28). Similar work involving teachers and children is on-going and is described elsewhere (29).

The process that developed the list of concepts that we believe people need to understand to assess claims about treatment effects is described in another paper (28). Concepts were generated and revised based on a review of relevant literature; feedback from an international advisory group, researchers and consensus of the project team. This resulted in the following six groups of concepts:

1. Recognizing the need for fair comparisons of treatments
2. Judging whether a comparison of treatments is a fair comparison
3. Understanding the role of chance
4. Considering all the relevant fair comparisons
5. Understanding the results of fair comparisons of treatments
6. Judging whether fair comparisons of treatments are relevant

Methods

Between July and August 2013 we contacted leaders of three major health journalists' professional organizations in Uganda (Uganda Science Journalists' Association, Health Journalists Network of Uganda and Uganda Health Communication Alliance) and the national professional organization for journalists (Uganda Journalists' Association), by phone and, or email. They identified journalists and media practitioners involved in health reporting, writing, editing and running health programs in media houses or working as freelance journalists.

At the beginning we attempted to work with journalists' lists available within the professional organizations to identify a systematic random sample but the process was extremely cumbersome and futile. The lists were not up to date, had numerous members cross-listed in several journalists associations, had multiple duplications, had some members who were no longer practicing and had some members who were not journalists by training. We therefore assembled our sample of 25 health journalists (*our journalists' network*) using a snowball technique (30) starting with leaders of health journalists' organizations and editors of health news identified from newspapers.

The number of participants was restricted to ensure active participation and interaction. We hypothesized that 25 people would be manageable but would also participate actively in this exercise. Since the lists were not up to date, it is difficult to know what percentage this sample represents of the total number of journalists in the three organizations from which participants were selected.

We conducted workshops with the journalists' network over three consecutive days. The objectives of the first day were to introduce the project and the priority setting activities, to establish principles for inclusive and transparent participation, and to introduce and explain the six groups of concepts. On the second day we explained and discussed the groups of concepts in detail, giving appropriate examples, with the goal of aiding understanding of each of the six groups of concepts.

We used a problem-based, participant-driven approach to the discussion of these concepts in which a group of concepts was presented as a question and discussed by participants, divided into six groups of four or five members each. Each group of concepts was discussed by participants for 15 minutes and presented by one group in five minutes. Other groups were invited to comment and ask questions after each presentation and each group of participants presented at least one group of concepts. Three researchers from the "Informed Healthcare Choices" project team (DS, AN, and NKS) then delivered a prepared presentation after each of the participants' presentations, giving appropriate examples and clarifying any misconceptions that came out of their earlier presentations. Two other individuals (MM and RL) assisted the "Informed Healthcare Choices" project research team in taking notes, recording proceedings and attended to any other administrative issues throughout the workshops.

On the third day we had a recap of the groups of concepts followed by the prioritization exercise. To ensure that the process was well understood, we undertook a mock prioritization exercise with hypothetical concepts just before the actual prioritization exercise. During the actual prioritization exercise we adopted an iterative process using a modified Delphi technique to achieve consensus in one day as described below. The Delphi technique, in many modified versions has been used elsewhere for prioritization and consensus building and has been recommended by several researchers (31–36) for similar accomplishments.

We explained the procedure for the prioritization exercise to the participants in detail, and clarified any issues that were not well understood, before the ranking process. To ensure anonymity during the exercise we distributed prepacked sealed envelopes containing at least four pretested questionnaires bearing the same questions in varying orders. We also included an additional brief questionnaire to collect data about the participants' characteristics and their experience with the whole exercise. Every package had a unique identifier printed on each of the questionnaires to track responses and scores across the series of Delphi rounds. We re-submitted the same questions in a different order but we did not change the number or format of survey questions in the subsequent rounds.

We used four criteria to assess each group of concepts.

1. Is this group of concepts important for journalists and media practitioners to understand?
2. Is it reasonable to expect journalists and media practitioners to understand and or use this group of concepts?
3. Are there potential resources we could develop to help journalists and media practitioners understand and or use this group of concepts?
4. If resources were developed for this group of concepts would those resources potentially have an important impact on journalists' and their audiences' ability to appraise claims about the effects of treatments?

Ranking was based on pre-set criteria against which each of these groups of concepts would be judged. For each group of concepts participants were asked to award a numeric score against each criteria above on a scale of one to six with a score of 1 being the lowest and 6 the highest score.

Table 1 Characteristics of participants

Sex	n (%)	Median age (years, Min-Max)	Median years of experience (Min-Max)
Male	11 (44.0)	32 (23–45)	5 (1–17)
Female	14 (56.0)	32 (26–50)	5.5 (1–14)

We used anonymity in the ranking process to ensure that any undue influence from dominant individuals was prevented and those less inclined to speak out had their voices heard and input considered in equal measure as those from more vocal participants. Participants did not discuss their rankings with colleagues during the ranking process. Each participant ranked the groups of concepts individually according to their understanding as explained by the "Informed Healthcare Choices" project research team.

Survey responses from the first round of Delphi surveys were analysed in real time and results shared with the group and participants were asked to participate in a second survey to confirm or modify results of the first survey in accordance with the principles underlying the Delphi technique (32, 33).

In the second survey, participants were asked to select a fresh questionnaire from their envelopes. In this questionnaire the order of the same groups of concepts that were presented in the first survey had been changed and participants were asked to re-rank the groups of concepts using the same response options that were used in the first round. Results of the second survey were also shared before a third survey of the survey was done. The exercise was terminated when there was no meaningful difference in the rankings of participants between the successive surveys. Quantitative data were entered in a Microsoft Excel spread sheet and analysed using STATA version 12.0 (37).

The study was approved by the ethics committees of Makerere University College of Health Sciences-School of Medicine and Uganda National Council for Science and Technology.

Results

The characteristics of the 25 participants in the study are summarized in Table 1. The participants worked in several media categories, including print, television, radio, and the Internet. 17 of the 25 worked in only a single category of media establishment while 8 worked in two or more categories (Table 2).

Thirteen out of 25 (52%) reported having additional supervisory responsibilities on top of their journalism work. Only four out of the 25 respondents (16%) had ever heard of the study concepts or related health concepts, two of whom had masters' degrees in their fields of practice. Twenty out of

Table 2 Participants' work places

Items		Freq (%)
Institution type	Government	8 (32.0)
	Private	16 (64.0)
	Public–private partnership	1 (4.0)
Media category	One category	17 (68.0)
	Two categories	7 (28.0)
	More than two	1 (4.0)
Work location	Rural	2 (8.0)
	Urban	18 (72.0)
	Both	5 (20.0)

25 (80%) rated health literacy to be a very highly relevant issue for Uganda's population.

All the six groups of concepts were generally well understood by the participants, based on their self-assessments. Three out of 25 participants reported that the concepts were explained very well while the remaining 22 out of 25 (88%) reported that the groups of concepts had been explained excellently. Participants awarded median scores of 94 (on a scale from 0 to 100) to the methods of presentation and discussions. Twenty-four of the 25 (96%) rated themselves as having generally understood the groups of concepts very well, with self-assessment scores above 75 (on a scale from 0 to 100). However, four out of 25 respondents reported having not understood at least one group of concepts. The group of concepts most commonly reported as not well understood was "understanding the role of chance" in research, which had concepts pertaining to interpreting statistical significance, P values and results from small studies.

Participants were able to achieve consensus within 3 surveys. The rankings from the surveys conducted during the prioritization exercise are summarized in Table 3. All six groups of concepts were ranked important, applicable and understandable to journalists and their audiences across the three surveys, with median scores of five and six (strongly agree and very strongly agree respectively) on a scale of one to six; with one being the lowest score and six the highest score. Similarly, participants thought that if any resources were developed for any of the groups of concepts, those resources would have an impact on how they conduct their work, with median scores of five and six across the surveys with the exception of "the role of the chance," which had median scores of four for the most part.

Following the workshop, the research team reviewed each of the individual concepts. Although the journalists considered all six groups of concepts relevant, they indicated that in addition to "understanding the role of chance," two other concepts might be less important and more difficult to understand and use. Based on this, we concluded that all six groups of concepts should be kept, but that two concepts would be difficult for journalists and their audiences to understand and use, and should not be addressed by the resources that we will develop. These two concepts were: Judging whether a comparison of treatments is a fair comparison: People's experiences should be counted in the group to which they were allocated; Understanding the results of fair comparisons of treatments. Average differences between treatments can be misleading.

We kept the group of concepts "understanding the role of chance" because we thought it could be understood if we used more appropriate examples. Although some of the journalists found some of the other concepts difficult to understand, particularly those related to understanding the role of chance, we decided that those concepts were important and that we would develop resources that help people to understand and use those concepts.

Discussion

Our findings confirm that Ugandan journalists with an interest in health reporting agree that all the six groups of concepts are relevant to their work and that resources to aid understanding and use of the concepts could help to improve the reporting of information about the effects of treatments in the mass media. The groups of concepts that we presented were completely new to the majority of participants. Most participants reported that they understood them after they were presented and discussed. However, we did not objectively measure their understanding of the concepts and it is uncertain how well they understood them.

The group of concepts "understanding the role of chance" ranked generally low across all four criteria. Journalists found this group of concepts more difficult to understand than the other groups of concepts. Some journalists said they could not envisage chance occurring in science where factors are experimentally controlled. Others said the concepts of confidence intervals, p-values and statistical significance needed more time and more training to digest.

Participants were selected to include people with a range of experiences in health reporting, writing, editing and running health programs in media houses or working as freelance journalists. Other people who work in mass media are also unlikely to be familiar with the concepts, given that all of the participants were selected because of their interest and experience in health reporting.

Strengths of this study include the use of a process that ensured that participants had some understanding of the concepts before ranking them, use of a participatory process that engaged all of the participants equally, and engaging participants who work in the different sectors of the media industry. By using anonymity in the ranking process we ensured

Table 3 Results from the Delphi surveys

Description of group of concepts	Scoring criteria	Median scores from the surveys on a scale of 1–6		
		Survey one	Survey two	Survey three
Recognizing the need for fair comparisons of treatments	How important is it to journalists?	6	6	6
	How understandable is it to them?	5	5	5
	Any potential resources to develop?	4	4	5
	Would such resources have an impact?	6	5	5
Judging whether a comparison of treatments is a fair comparison	How important is it to journalists?	5	5	5
	How understandable is it to them?	4	4	5
	Any potential resources to develop?	4	4	4
	Would such resources have an impact?	5	4	5
Judging whether a comparison of treatments is relevant to your setting	How important is it to journalists?	6	6	6
	How understandable is it to them?	5	5	5
	Any potential resources to develop?	5	4	4
	Would such resources have an impact?	5	4	5
Understanding the results of fair comparisons of treatments	How important is it to journalists?	6	6	5
	How understandable is it to them?	5	5	5
	Any potential resources to develop?	4	5	5
	Would such resources have an impact?	5	5	5
Understanding the role of chance	How important is it to journalists?	4	4	4
	How understandable is it to them?	4	3	4
	Any potential resources to develop?	4	4	4
	Would such resources have an impact?	4	4	3
Considering all the relevant fair comparisons	How important is it to journalists?	6	6	6
	How understandable is it to them?	5	5	5
	Any potential resources to develop?	5	5	5
	Would such resources have an impact?	5	5	6

that any undue influence from dominant individuals was limited and that each participant contributed equally to the assessments.

It is not clear how our findings apply to journalists working in rural areas since participants in this study predominantly worked in urban areas. Another potential limitation of our study is that the responses to perceived understanding of the concepts might have been influenced by the presence participation of the investigators (social desirability bias). Scores for the quality of presentations might have been awarded because the investigators who presented and discussed the concepts also administered the questionnaires. Although the responses were anonymous, we cannot rule out a possible response bias. In addition, participants subjectively rated their understanding of the concepts and they might have overrated this. Their objective understanding of the concepts will be measured in subsequent stages of the project.

Other studies have documented shortcomings of health reporting that reflect a failure to apply concepts such as those that we have identified and prioritized (38) and there are several checklists that incorporate some of these concepts (39, 40). Other studies have also found that it is feasible to teach basic evidence based medicine to patients and consumer representatives and that this can improve self-confidence and statistical literacy (41).

What this study adds

To our knowledge, there are no other lists of concepts that are directly comparable to the list of concepts that we developed or systematic efforts to prioritize such concepts or engage journalists in an effort to develop and evaluate a set of resources to help them and their audiences to understand and use such concepts.

We are not aware of any other attempts to systematically establish priorities for resources to help improve health care information in the mass media in general or information about the effects of treatments specifically.

This study confirms that people working in the mass media in a low-income country recognize the importance of key concepts that people need to understand to assess claims about treatment effects and that it is possible to teach these concepts of evidence-based medical decision-making to people without a medical background. Most of these concepts were new to experienced health journalists. These findings suggest that there is opportunity to teach; there is a need for resources that can help lay people understand and apply these concepts.

The workshop helped to build capacity among journalists and media practitioners to critically appraise health information. Although this was only an initial step, all participants now recognize that this is something they needed and described the process as insightful.

Conclusion

All six groups of concepts are relevant to journalists and media practitioners. Journalists in Uganda are interested in learning about these concepts and consider this important for their work. We were able to establish a network of journalists involved in health reporting who will work with us to develop and evaluate resources to improve information about the effects of treatments in mass media. Journalists involved in health reporting should be empowered to address the knowledge gaps identified in this study and to further build capacity to critically appraise and report claims about the effects of treatments. The next step on this project is to develop resources that address barriers to journalists improving the informative value of health reporting in mass media, also identified by other scholars (42) and help journalists and their audiences to understand key concepts that underlie critical assessments of claims about treatment effects.

Acknowledgments

We would like to acknowledge the contribution of research teams at the Norwegian Knowledge Centre for the Health Services and Makerere University College of Health Sciences, the international and national advisory panels and the network of journalists we worked with on this phase of the project.

Funding

This project was funded by the Norwegian Research Council as the Supporting informed Healthcare Choices in Low-income countries research grant, through the Norwegian Knowledge Centre for the Health Services.

Competing Interests

The authors have no conflicting interests to declare.

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