From facts to arguments: A study of the 2014 Swiss controversy over systematic mammography screening

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A R T I C L E   I N F O

A B S T R A C T

Objective: The Swiss Medical Board (SMB) has recently revived the controversy over mammography screening by recommending to stop the introduction of new systematic mammography screening programs. This study aimed to examine the Swiss media coverage of the release of the SMB report.
Methods: The dataset consisted of 25 newspaper and "medical magazine" articles, and TV/radio interviews. The analytic approach was based on argumentation theory.
Results: Authority and community arguments were the most frequent types of arguments. With respect to *authority* arguments, stakeholders for instance challenged or supported the expertise of the SMB by referring to the competence of external figures of authority. *Community* arguments were based on common values such as life (saved thanks to systematic mammography screening) and money (costs associated with unnecessary care induced by systematic mammography screening).
Conclusion: The efficiency of mammography screening which was the key issue of the debate appeared to be largely eluded, and the question of what women should do endures.
Practice implications: While interpersonal and interprofessional communication has become a major topic of interest in the medical community, it appears that media communication on mammography screening is still rather ineffective. We call in particular for a more fact-based discussion.

1. Introduction

Mammography screening has become one of the greatest controversies in health care policies, capturing the attention of professionals, the media, and the public [1]. In 1995, Wright and Mueller called for perspective and critical analysis of benefits, harms, and costs of mammography screening, whose demand was increasing among professionals and the public [2]. However, the debate over its benefits started with the 2000 meta-analysis by Gøtzsche and Olsen in which they concluded that "Screening for breast cancer with mammography is unjustified [. . .] there is no reliable evidence that screening decreases breast-cancer mortality" [3]; this meta-analysis was followed by two publications of Olsen and Gøtzsche in *The Lancet* [4] and the *Cochrane Review* [5]. The evidence was subsequently weighted by multidisciplinary committees which endorsed organized breast cancer screening programs based on the conclusion that screening is likely to reduce breast cancer mortality [6–9]. The debate was again inflamed around 2010 when questions were raised about the negative side effects of mammography screening and its substantial rate of overdiagnosis [10,11].

In 2013, the Swiss Medical Board [SMB] (funded in 2008 to provide a system of Health Technology Assessment) evaluated benefits, harms, and cost-effectiveness of organized breast cancer screening in Switzerland [12]. The SMB concluded that cost-effectiveness is negative with no additional benefits with regard to quality-adjusted life-years gained, and recommended: to not introduce new systematic mammography screening programs; to set a time limit on existing programs; to evaluate all forms of mammography screening with regard to quality; and to precede all forms of mammography screening by a thorough medical evaluation and a comprehensible presentation of the desirable and undesirable effects [13].

Since the SMB report revived the breast cancer screening controversy, we decided to examine its news media coverage with an argumentation-based approach. With respect to similar research, the controversy related to the findings of Gøtzsche and Olsen was studied by Holmes-Rovner and Charles [14], who raised the question of what kind of information would be useful to make an informed choice, and Steele et al. [15], who evaluated how the media contributed to the evolution of the debate. Our study deviates from those aforementioned since we examined form and

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content of arguments used in news media by stakeholders of the debate. Such argument analysis provides the opportunity to observe how information is delivered to the public and to women, who have to decide to attend mammography screening or not.

To contextualize our subject-matter, a brief overview of the Swiss situation seems relevant. Compulsory health insurance reimburses mammography screening when it is part of a program. Cantons ($N = 26$) are responsible for the implementation of these programs, which currently exist in ten (including all six French-speaking cantons); four cantons have decided to implement programs, but have not yet done so, and in the others discussions and first political steps are underway. To facilitate coordination and harmonize approaches, the programs are supported by Swiss cancer screening [16].

2. Methods

2.1. Study aims

The purpose of the analysis was (i) to identify the arguments utilized by stakeholders commenting on the SMB report (e.g., experts in the field, representatives from public health or cancer screening programs), and (ii) to classify these arguments by type, depending on the nature of the reasoning (the "argumentative mold" [17]), and specific content, based on the meaning of the arguments (the opinions themselves).

2.2. Data source

The data source was a set of oral and written discourses reflecting the media coverage of the SMB report in the French-speaking part of Switzerland. This included 25 newspaper and "medical magazine" articles and TV/radio interviews (for the detailed description of the dataset, see Appendix A). While the controversy raised by the report was echoed in other parts of Switzerland and in other countries, collected data were restricted to the French-speaking part of Switzerland; the aim was thus not to comprehensively assess the media coverage, but to obtain a kind of "biopsy" of arguments on a scientific issue most relevant to women. The report is dated December 15, 2013, the press release was issued on February 2 2014, and the data set covered a period from February 2 to November 12, 2014; the study was conducted from September 2015 to December 2016.

2.3. Data analysis

The analytic approach was based on argumentation theory; three elements allow to define the field of argumentation: arguing means to communicate; arguing does not mean to convince at all costs; and arguing means to reason [17–19]. An *ad hoc* analysis grid was developed based on the argumentation literature. The grid included the four major types of arguments – i.e., authority, community, framing, and analogy arguments – with a description of the different arguments they each include and their respective definitions (form and content) [17–19]. A detailed description is provided in the results section.

The analysis was carried out in a stepwise manner. The first step was to read the articles/interviews to get a sense of the data. The second step (conducted by CP and CB) aimed to identify and classify the arguments by means of the analysis grid, working first together (40% of the dataset) and then separately. Validation by consensus was then achieved for divergent ratings (very few in number) (CP and CB) and for a random subset of the data (20%) with the third author (FS).

Most importantly: the goal of this study was not to evaluate whether arguments used by stakeholders were well-funded or not. We analyzed their opinions as conveyed in the media consistently and without bias.

3. Results

Authority and *community* arguments were the most frequent types of arguments in the dataset. The authority argument type includes (1) *appeal to authority* ("positive" authority) and (2) *ad hominem* arguments ("negative" authority); the *community* type refers to arguments where reasoning is based on common assumptions, which include a set of values such as life.

3.1. Arguments of authority

3.1.1. Appeal to authority ("positive" authority: speaker's own or external authority)

Three subtypes were distinguished in the analysis grid: the *competence* argument, which presupposes scientific, technical, moral or professional competence to motivate a way of seeing; the *experience* argument, based on effective practice in a specific field; the *testimony* argument, which refers to the authority gained by having attended an event [17–19]. In the articles/interviews of the dataset, only *competence* arguments were identified ($N = 89$) (see Table 1).

On the one hand, the expertise of the SMB was challenged or supported by emphasizing the competence of external, scientifically or professionally recognized figures of authority. The external authorities whose competence was most frequently cited were:

- "Scientific evidence" through reference to major studies ($n = 12$): e.g., *According to the most reliable studies [. . .], for thousand women of 50 years who attend screening regularly for 10–12 years, between 0,5 and 2 deaths from breast cancer will be prevented [. . .].*(19 = No. of the article/interview, see Appendix A)
- National and world health-related institutions or organizations ($n = 8$): e.g., *From 1995 to 2002, mortality by breast cancer in women aged 55 to 74 years decreased by 35% in French-speaking Switzerland against 14% in German-speaking Switzerland, according to data of the Federal Statistical Office (FSO)*[(3)].
- Identified national experts ($n = 4$): e.g., *According to Professor Bouchardy* [the director of the Cancer Registry of Geneva University], *actual data are the only answer against the conclusions of the debate launched by the board*[(3)].
- Experts and specialists in the field, without provision of further details ($n = 4$): e.g., *All experts know that benefits are limited, but they exist. The difficult weighting, involving social choices, has already been made [. . .]*[(17)].
- Leading medical journals ($n = 3$): e.g., *Already in 2010, we can read in the New England Journal of Medicine that they [organized breast cancer screening programs] do reduce mortality by only 10%, as opposed to the 25 to 35% calculated in 2002 by the World Health Organization*[(4)].

On the other hand, arguments focused on the doubtful character and weakness of the expertise of the SMB and of their recommendations and conclusions. It was argued (i) that the knowledge mentioned in the report does not exist or does not support the recommendations; (ii) that the opinion of the SMB was biased or invalid because of conflicts of interest; and (iii) that the SMB provides its opinion on a subject outside of its area of competence.

(i) Lack of knowledge or lack of relevance of knowledge provided by the SMB: