









BMJ Open Journalists' views on media coverage of medical tests and overdiagnosis: a qualitative study

Mary O'Keeffe ¹, Brooke Nickel ^{2,3}, Thomas Dakin ^{2,3}, Chris G Maher ¹,
Loai Albarqouni ⁴, Kirsten McCaffery ^{2,3}, Alexandra Barratt ²,
Ray Moynihan ⁴

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¹Institute for Musculoskeletal Health, The University of Sydney, Sydney, New South Wales, Australia

²Sydney School of Public Health, University of Sydney, Sydney, New South Wales, Australia

³Sydney Health Literacy Lab, Sydney School of Public Health, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia

⁴Institute for Evidence-Based Healthcare, Bond University, Gold Coast, Queensland, Australia

Correspondence to

Dr Mary O'Keeffe;
mary.okeeffe@sydney.edu.au

ABSTRACT

Objective Promotional media coverage of early detection tests is an important driver of overdiagnosis. Following research evidence that global media coverage presents the benefits of testing healthy people far more frequently than harms, and gives little coverage to overdiagnosis, we sought to examine journalists' views on media reporting of tests, overdiagnosis, and strategies to improve critical reporting on tests.

Design Qualitative study using semistructured telephone interviews. Interviews were conducted between February and March 2020 and were audiorecorded and transcribed verbatim. Framework thematic analysis was used to analyse the data.

Participants and setting Twenty-two journalists (mainly specialising in health reporting, average 14.5 years' experience) based in Australia.

Results This sample of journalists acknowledged the potential harms of medical tests but felt that knowledge of harms was low among journalists and the public at large. Most were aware of the term overdiagnosis, but commonly felt that it is challenging to both understand and communicate in light of strong beliefs in the benefits of early detection. Journalists felt that newsworthiness in the form of major public health impact was the key ingredient for stories about medical tests. The journalists acknowledged that factors, like the press release and 'click bait culture' in particular, can influence the framing of coverage about tests. Lack of knowledge and training, as well as time pressures, were perceived to be the main barriers to critical reporting on tests. Journalists felt that training and better access to information about potential harms would enable more critical reporting.

Conclusions Effectively communicating overdiagnosis is a challenge in light of common beliefs about the benefits of testing and the culture of current journalism practices. Providing journalists with training, support and better access to information about potential harms of tests could aid critical reporting of tests.

BACKGROUND

Advances in early detection testing through diagnostic technology, screening programmes, biomarkers, artificial intelligence and self-tracking technologies such as the Apple Watch are increasingly aimed at

Strengths and limitations of this study

- This is the first study to explore Australian journalists' views on the reporting of medical tests and overdiagnosis.
- The findings will help inform strategies to improve critical reporting on medical tests and communicate better about overdiagnosis.
- Our sample comprised mainly health-specific journalists with an interest in taking part in the study and may not be representative of all journalists.
- It remains unclear if the journalists' knowledge of how to critically report on tests translates into critical reporting in practice.

healthy people to detect a potential disease prior to the onset of symptoms.^{1–5} While early detection tests may have benefits for those with a potentially serious disease, there is considerable evidence that unnecessary testing can harm healthy people through overdiagnosis.^{6–8} Overdiagnosis occurs when individuals are labelled with a technically correct diagnosis that does not improve health outcomes.^{9–10} It is now widely recognised as a threat to human health and health system sustainability.^{9–11–16}

Many possible drivers of overdiagnosis have been documented. The media, through promoting early detection tests to healthy individuals, is considered an important driver.¹⁵ A recent cross-sectional study¹⁷ of global media coverage—including over a thousand media stories about five early detection tests (three-dimensional mammography for breast cancer, liquid biopsy for cancers, Apple Watch for atrial fibrillation, blood biomarker tests and artificial intelligence technology for dementia)—found that the potential benefits of testing were presented far more frequently than potential harms. The risk of overdiagnosis was mentioned in very few stories. These findings align



with published studies of media coverage of health and medicine, which have found that the media emphasise potential benefits more than harms.^{18–21} The COVID-19 pandemic—in particular—has brought this problem into sharp focus. Many media outlets have hyped the effect of anti-viral drugs on the basis of small, industry-funded, uncontrolled studies—potentially hampering treatment evaluation efforts and responses to the pandemic.²²

The media's often unrealistic and over-optimistic expectations about the value of early detection tests is a cause for concern for four main reasons. First, the general public, and patients, already tend to overestimate the benefits of early detection^{23–25} and uncritical media coverage can reinforce these perceptions. Second, few individuals seem to be aware of the potential harms of early detection and overdiagnosis.^{26–27} Third, there is evidence that tests are already widely overused.^{28–29} And fourth, media coverage can influence patterns of health-care utilisation—with positive coverage of a test or treatment associated with increases in utilisation^{30–32} (eg, see box 1).

Given the powerful role that the media can play in perpetuating the present lack of awareness of the downsides of testing, including overdiagnosis, and in shifting public health behaviours, strategies to improve media reporting of tests and overdiagnosis are needed. While there is a considerable scientific literature on how the media frames different health issues, less attention has been given to hearing journalists' perspectives on media coverage of medical tests and overdiagnosis. To our knowledge, one qualitative study³³ has previously examined US journalists views of media coverage of overtreatment. The sample of journalists in this study nominated overtreatment (eg, cancer screening) as an important driver of overtreatment. However, no study has examined journalists' specific perspectives of new tests, and their benefits and harms. This study sought to redress this knowledge gap.

METHODS AND ANALYSIS

Study design

This qualitative study used semistructured telephone interviews to explore journalists experience of, and attitudes to, reporting on medical testing, overdiagnosis and strategies to improve media coverage of both tests and overdiagnosis. It was designed and reported according to the Consolidated Criteria for Reporting Qualitative Research.³⁴ See online supplemental file 1 for the study protocol.

Participants and recruitment

Participants were 22 Australia-based journalists. Both health journalists and generalist journalists across any type of media were included. To be eligible, participants needed to be currently working as a journalist in Australia, be able to communicate in English (both orally and in written form) and be able to give informed consent. Ability to read and understand English were key

Box 1 The power of the media

- ▶ Media coverage of Kylie Minogue's breast cancer diagnosis in Australia in May 2005 led to a 20-fold increase in media coverage about breast cancer, with a particular emphasis on how young women can get breast cancer and the importance of early detection.³²
- ▶ Bookings for mammograms as part of government-sponsored BreastScreen programmes across Australia rose 40% during the 2 weeks of the coverage, and there was a 101% increase in non-screened women in the eligible age group (40–69 years). Six weeks after the coverage, bookings stayed more than a third higher in non-screened women.³²

inclusion criteria for the study because the interview was conducted in English. There were no restrictions on the age or gender of participants.

Journalists were purposively recruited through three different avenues: (1) There was journalism expertise in the author team (RM) and personal contacts played a role in the initial development of a list of potential participants to contact; (2) One author (MO) performed Google and Twitter searches to locate potentially eligible journalists. If a journalist had publicly available contact information, they were emailed about the study and; (3) Active 'snowball' recruitment was used by asking participating journalists to suggest other eligible journalists they believed would be interested in being involved.

All potential participants were emailed a participant information sheet outlining aims and important information about the study. Those interested in taking part returned a consent form to researchers through email and were contacted to arrange an interview.

Data collection

An interview schedule (online supplemental file 2) was developed, discussed and piloted by the research team. The research team have expertise across public health (MO, BN, TD, CM, LA, KM and AB), epidemiology (AB and LA), psychology (KM), health communication (MO, BN, KM and AB), overdiagnosis (MO, BN, TD, LA, CM, KM, AB and RM) and journalism (AB and RM). The telephone interviews were conducted by four researchers (MO, BN, TD and RM) between February and March 2020. Interviews lasted approximately 45 min, and were audiorecorded and transcribed verbatim. The interviewers took notes during the interviews to highlight key themes emerging from the interviews and direct further questioning (eg. explore a point raised by the journalist). This information enabled the interviewer to summarise back to the journalist at the end of the interview and give them an opportunity to provide further information.

Data analysis

The interview data were analysed using Thematic Framework Analysis. Microsoft Excel was used to organise the data to capture the views expressed by the journalists. The first step was familiarisation of the data, where one researcher (MO) independently reviewed the transcripts

and developed a list of emerging themes arising from the transcripts. Those themes along with the interview schedule (online supplemental file 2) formed the structure of the coding framework. An additional three researchers (BN, TD and RM) then read a subset of transcripts and reviewed the coding framework and necessary changes or additions to the framework were discussed and made. Once the coding framework was finalised, one researcher (MO) coded all of the interviews into the coding framework, and an additional researcher (BN) independently double-coded a random 20% of the interviews. Differences in the coding between the two researchers were discussed and resolved.

Patient or public involvement

Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research.

RESULTS

Journalist characteristics are shown in [table 1](#).

The results of the analysis of the interview data are organised around seven main themes: (1) Readers' interest in medical tests; (2) Ingredients of a 'good' news story; (3) Journalists' knowledge of potential harms of medical tests; (4) Factors influencing the framing of media coverage on tests; (5) Barriers to critical coverage of medical tests; (6) Enablers of critical coverage of medical tests and; (7) Interest in a training intervention. See online supplemental file 3 for extra journalist quotes relating to each theme.

Readers' interest in medical tests

The vast majority of journalists felt that stories about medical tests are popular among readers, particularly where the test relates to a common or serious health condition, like cancer and inheritable conditions.

"the concept of being able to detect disease in someone who might be unknowingly walking around with a ticking time bomb in their chest or blood stream is really compelling" (J7, 6 years' experience)

The public's enthusiasm for technology to catch a health issue early was mentioned by some journalists.

Ingredients of a 'good' news story

Public health impact was deemed the most important ingredient for reporting on a test by most journalists. Impact was frequently explained in terms of positive changes in the management of a common condition.

"how big is this step forward or, you know, how soon will it be introduced to patients, or practically speaking what does it change for them ... so I guess always having that patient lens in mind." (J22, 3 years' experience)

Peer-reviewed research as a prerequisite for reporting on a medical test was acknowledged by the vast majority

Table 1 Journalist characteristics

Characteristics	No of journalists (n=22)
Type of journalist	
Health	14 (63.6%)
Science (including health)	6 (27.3%)
General	2 (9.1%)
Gender	
Male	4 (18.2%)
Female	18 (81.8%)
Years of experience	
<5	3 (13.6%)
5–10	9 (40.9%)
11–20	2 (9.1%)
21–25	2 (9.1%)
>30	6 (27.3%)
Workplace setting	
The Australian Broadcasting Corporation (ABC)	8 (36.4%)
Freelance	6 (27.3%)
Online and print newspaper (Sydney Morning Herald)	3 (13.6%)
Health website (Medical Republic)	2 (9.1%)
Not-for-profit media outlet accepting stories from academics (The Conversation)	2 (9.1%)
Online newspaper (New Daily)	1 (4.5%)
Peer-reviewed journal (Medical Journal of Australia)	1 (4.5%)
Level of health story reporting	
A lot (writes health articles on most days)	18 (81.8%)
Some (every second week)	2 (9.1%)
Very little (less than once a month)	1 (4.5%)
History of reporting on medical tests	
Yes	16 (72.7%)
No	4 (18.2%)
Unsure	2 (9.1%)
History of training in understanding medical evidence	
Yes	7 (31.8%)
No	15 (68.2%)
Approached to report on medical tests	
Yes	15 (68.2%)
No	7 (31.8%)

The ABC provides radio, television and online services. The majority of ABC employed journalists in this study perform online and radio roles. The participants from The Conversation and The Medical Journal of Australia are journalists/editors who select, steer and edit news stories and submitted articles. They have former roles in mainstream media. Most of the journalists were based in major population regions such as Sydney, Melbourne, Gold Coast and Perth.

of journalists. Very few elaborated on the importance of the quality of the research (eg. the likelihood of bias). Many journalists said they seek independent comment

on tests from trustworthy sources like a university, and some journalists said they would seek clarification on vested interests before reporting on a test. Four journalists explicitly said they would ask about vested interests, including financial gain from promoting and/or selling the test.

Knowledge of potential harms of medical tests

The vast majority of journalists acknowledged the potential harms of medical tests, and mostly referred to the harms of screening for prostate and breast cancers, such as unnecessary testing, unnecessary treatments and anxiety. All journalists except one were aware of the term overdiagnosis. A few had a deeper understanding.

“Like my understanding of that is that you often will have people diagnosed with something, and they know they’ve got it but it’s not going to actually affect them. If they’d never had the test they would never have known and they’d have lived a happy healthy life.” (J13, 6 years’ experience)

Most journalists felt that knowledge of harms was low among the public and journalists in general due to frequent exposure to messaging about the benefits and importance of early testing. Several journalists felt that overdiagnosis was a difficult concept for readers to understand.

“I think generally there appears to be an attitude, certainly in a country like Australia, that public health screening is a very important public health measure. And that the more screening you do, the better. You know, I can’t remember a campaign ever that was trying to get people to not go to the doctor (laughs)” (J6, 6 years’ experience)

Only a small number of journalists viewed it as important to get information on safety concerns or potential side effects of a test before writing a story.

Factors influencing the framing of media coverage

The power of the press release to influence coverage was acknowledged by most journalists. A small number of journalists suggested that a journalist’s control over using the press release may be low depending on overall priorities for news content within the organisation.

“It’s like here’s the story, here’s the new product, here’s the patient, his life has been saved or changed or altered. You know, here’s how many people it’s going to save, here’s our expert. You know, it’s a real parcel.” (J1, 20 years’ experience)

Click bait (sensationalised titles designed to attract readers to click on stories) was mentioned by most journalists and was perceived to have downsides. However, a few journalists acknowledged that click bait can be driven by systemic issues which may be hard to modify. These include attempts to keep content interesting and obtain funding.

“if you can get a big headline out of it, if you can turn it into click bait, all the better. And I think that’s the danger. I mean I saw something the other day about some cancer test that’s

going to be a breakthrough, and it had only just, you know, made it to rat trials.” (J8, 32 years’ experience)

Most journalists acknowledged the potential for commercial interests to influence the media coverage of tests. About half of the journalists commented on a lack of training and experience, particularly among young generalist journalists, as a contributor to the framing of media coverage. A minority of journalists stated that many journalists are tempted to report very good or very bad news as it was felt that extremes in news coverage are more attractive to readers.

Barriers to critical coverage of medical tests

Lack of knowledge and experience of the medical evidence and harms was perceived to be the biggest barrier to improving coverage on medical tests by most journalists. Knowledge was generally in relation to reading research, and knowing the right questions to ask (eg. about commercial interests). Some journalists said that lack of knowledge and experience was compounded by the reduction in the number of specific health journalists.

“When it comes to screening tests, I would say the knowledge around the potential pitfalls of screening or over screening is not well known or understood. I think that applies to the general population but I also think that probably applies to journalists as well.” (J6, 6 years’ experience)

Most journalists mentioned time pressure as a significant barrier to critical reporting and often stated they themselves were fortunate to have time available to research a story.

Several journalists stated that access to trustworthy experts for independent comment was a real problem for their reporting. If a press release did not come with an independent comment, journalists often lacked the time to find one. Some felt it was difficult to access experts on certain health topics. Researcher availability was also mentioned as an issue. Specifically, it was difficult to speak with certain researchers as they may not answer calls/emails.

A small number of journalists said they tended to feel uncomfortable talking about harms including overdiagnosis as they can be difficult to communicate, and have potential to provoke unpleasant emotions in people who may be affected by a health condition (eg, cancer).

“I tend to be a bit hesitant to report on the dangers of over-testing and overdiagnosing when the proponents of these tests have such powerful and personal stories to tell.” (J7, 6 years’ experience)

Enablers of critical coverage of medical tests

The provision of journalist training was viewed as important to improve the critical coverage of tests by most journalists. They felt training should mainly focus on learning how to critically appraise research and press releases, understand statistics, and knowing the questions to ask about a test.

“A basic understanding of what the different levels of evidence are, what kinds of studies there are and why some are better than others about making strong conclusions. I think some statistics would help, if only just the basics of you know, absolute vs relative, and P scores and stuff like that. I think knowing, if we can train them about the downsides. They need to ask every single time, what are the downsides? And I don't think people do.” (J8, 32 years' experience)

Some journalists felt it was important for institutions like universities or government agencies to improve the quality of communication of the evidence. Common suggestions were improving press release quality to include conflict of interests and funding, and avoiding overstatements of findings.

Most journalists felt that researchers and national bodies (eg. Cancer Council) need to better communicate the harms of testing to journalists. This includes initiating stories, providing information about harms, as well as listing harms on websites where readers could find out more.

Interest in a training intervention

All journalists expressed an interest in training. The journalists were quite evenly split in terms of preferences for face-to-face, online or combined face-to-face and online training. All journalists highlighted the importance of keeping the training short in duration and most liked the idea of resources and ongoing support. Frequent suggestions were checklists, access to expertise for comment, fact-checking and reminders.

“And then I also think that a resource that would be useful, something you can take away like an at a glance kind of 'don't forget these five things'. Something that's, they can then sort of stick on their desk...” (J13, 6 years' experience)

DISCUSSION

Summary of key findings

The findings from this interview study suggest that many journalists may be aware of the potential harms of medical tests such as overdiagnosis, but they commonly view information about harms as difficult to access and communicate. Knowledge of harms such as overdiagnosis, however, was perceived to be low among the public and journalists at large yet important and interesting. In particular, overdiagnosis was viewed as a counterintuitive concept for many, given prominent public health efforts to promote the benefits of early detection. The journalists identified a number of factors that influence coverage and present challenges to improving critical reporting on tests. Journalists were engaged by the idea of receiving training and support.

Comparison to existing literature

Our findings align with a number of other qualitative and survey studies of journalists that newsworthiness, time pressures, click bait and a lack of medical knowledge are

important factors in both influencing media coverage of health topics and attempts to change coverage.^{35–38} Views on the power of the press release are supported by quantitative data showing that the quality of the press release is associated with the quality of the subsequent medical news reporting,^{39 40} and that journalists frequently rely on press releases for story ideas.⁴¹ The problems with press releases have been highlighted again during the COVID-19 pandemic through the media's reliance on potentially unreliable preprints, or preliminary or partial results promoted before peer review, to communicate treatment effectiveness.²²

The prevalence of click bait in media coverage fits broadly with cross-sectional studies displaying the media's frequent use of emotive words like 'breakthrough', 'revolutionary' and 'unprecedented' to report new treatments.^{42 43} In fact, one randomised trial found that use of words like 'breakthrough' and 'promising' in reference to medicines in media releases increases the public's belief in drug effectiveness compared with facts-only explanations.⁴⁴

The observation that promotion and desire for early detection testing is widespread fits with the considerable literature displaying public, patient, and clinicians' beliefs in the benefits of testing.^{22 23 45} In a qualitative study³³ examining US journalists views of media coverage of overtreatment, the sample of journalists viewed the issue of overtreatment—together with overtesting—as a complex matter driven by strong public faith in health-care and societal norms that make medical uncertainty difficult to accept. Further, there is data showing that medical marketing of tests to persuade individuals about the importance of early detection is escalating.⁴⁶ The journalists' need for access to better information and expertise aligns with previous qualitative work.^{35 37}

Strengths and weaknesses of this study

To our knowledge, this is the first study to explore journalists' views on media reporting of medical tests and the problem of overdiagnosis. This study provides useful information about the barriers to critical reporting on tests, and enablers which could improve it. The findings will facilitate the development of strategies to better support journalists to report on the harms of tests, including overdiagnosis.

The study has some important limitations. A highly selective sample of journalists was included. Only Australia-based journalists were included. Although we approached journalists of various levels of experience and from different types of media outlets, the majority of the sample were experienced health journalists working for well-regarded media outlets. These journalists expressed awareness of overdiagnosis. This may be influenced by our recruitment strategies and journalists' willingness to participate in this specific research. The generalisability of the results may be limited for journalists in different countries with a different media landscape or less experienced reporters who do not specialise in health reporting.



Meaning of the study

The finding that journalists are very interested in receiving research training and support should be welcomed by researchers and organisations interested in improving the critical reporting of tests and knowledge of overdiagnosis. Journalists are well positioned to educate the public about medical tests^{31 47} and media coverage of tests can influence healthcare utilisation.^{30 32} The media have contributed to improvements in health-related knowledge and behaviours—for example, in the areas of low back pain, smoking cessation and vaccination.^{48–50} Improving critical reporting on early detection could encourage more realistic expectations about the benefits of early detection and an awareness of potential harms such as overdiagnosis.⁷ Future research should focus on developing training and resources for journalists and examining their impact on journalist knowledge and the quality of media coverage on tests. This research should build on previous workshops and tipsheets for journalists (eg. The US National Institutes for Health Medicine in the Media workshops by Drs Lisa Schwartz and Steven Woloshin,^{47 51} and available checklists of medical reporting criteria for journalists (eg, those available from Media Doctor Australia and Health-NewsReview.org).

Journalists face numerous challenges. First, the public has long received the message that early detection is a good thing. Second, the complexity of overdiagnosis and uncertainty in the evidence base may together make it difficult to communicate the nuances involved. Third, journalists must grab the readers' attention by providing interesting stories within tight deadlines. There are opportunities for academics and organisations to understand these working environments and be available to communicate stories in an engaging but accurate manner. Finally, interventions should not only target journalists, but also the wider levers (eg. press releases) that contribute to how information about medical tests is communicated.

CONCLUSION

This sample of Australian journalists seem aware of the potential harms of medical tests such as overdiagnosis, which are often left out of media coverage.¹⁷ But, effectively communicating overdiagnosis is a challenge in light of entrenched beliefs about the benefits of testing and the culture of current journalism practices. Providing journalists with training and support in their efforts to communicate overdiagnosis could aid critical reporting of tests. This may contribute to addressing the wider problem of medical test overuse, which is a major threat to health system sustainability.

Twitter Mary O'Keeffe @MaryOKeeffe007, Brooke Nickel @brooke_nickel, Thomas Dakin @wiserhealthcare, Loai Albarqouni @LoaiAlbarqouni, Kirsten McCaffery @KirstenMcCaffer and Ray Moynihan @raymoynihan

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Contributors MO conceived the idea for the study. MO, BN, TD, CM, LA, AB, KM and RM all contributed to the design of the study. MO, BN, TD and RM were

involved in data collection and analysis. MO drafted the manuscript. All authors contributed to the interpretation of the analysis, and critically revised and approved the manuscript.

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ORCID iDs

Mary O'Keeffe <http://orcid.org/0000-0001-7104-9248>

Brooke Nickel <http://orcid.org/0000-0002-8100-4278>

Thomas Dakin <http://orcid.org/0000-0003-4452-1863>

Chris G Maher <http://orcid.org/0000-0002-1628-7857>

Loai Albarqouni <http://orcid.org/0000-0002-4114-9106>

Kirsten McCaffery <http://orcid.org/0000-0003-2696-5006>

Alexandra Barratt <http://orcid.org/0000-0002-2561-3319>

Ray Moynihan <http://orcid.org/0000-0001-9283-742X>

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