

It must be true ... I read it in the tabloids

SY Yip¹, D Namah², R Cook³, C Isles⁴

Abstract

Background Previous attempts to improve the quality of health journalism have not led to more responsible reporting of health news.

Method We reviewed the front pages of three daily tabloid and three daily broadsheet UK newspapers during a 1 month period in 2017 for medical headlines in which claims were made for diets, lifestyle behaviours or drug therapies that influence health.

Results Front page medical headlines were carried by the Daily Express (11), Daily Mail (two), Daily Mirror (one) and Daily Telegraph (one). Neither the Guardian nor the Independent carried medical stories on their front pages during the period of study. Eleven headlines suggested benefits and three suggested harm. One headline accurately reflected its source material, but in this instance the source material was of doubtful clinical relevance. The remaining 13 headlines either exaggerated benefit (seven), exaggerated harm (two) or made false claims (four).

Conclusions The cumulative effect of everyday misreporting of medical stories in UK newspapers may not only serve to confuse the public but also have serious consequences for public health.

Keywords: health journalism, medical headlines, tabloid newspapers

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Introduction

Tabloid newspapers have long been known to sensationalise health news, and while many of us may chuckle at their misreporting, it would be foolish to dismiss the effect the tabloids may have on health behaviours. The cumulative effect of everyday misreporting may not only serve to confuse the public but also have serious consequences for public health. For example, research on the now discredited link between measles, mumps and rubella vaccine and autism first made the news in 1998. By 2003 uptake of the vaccine had fallen to <80% and by 2006 cases of measles had risen to over 700, and one 13-year-old boy on immunosuppressive treatment had died.¹ A number of efforts around this time aimed to improve the public trust in science.² Against this background, the purpose of the present study was to determine whether previous efforts to encourage more responsible reporting of health news have had the desired effect.

Methods

We reviewed the front pages of three daily tabloid (Daily Express, Daily Mail and Daily Mirror) and three daily broadsheet (Daily Telegraph, Guardian and Independent) UK newspapers between 15 August and 15 September 2017

for medical headlines in which claims were made for diets, lifestyle behaviours or drug therapies that influence health. We sourced the abstracts or journal articles from which these headlines were derived in order to provide an unbiased and evidence-based summary of what we had read. For headlines reporting treatment trials we converted endpoints to percentages to enable absolute risk reduction and number needed to treat to be calculated when we could and when this information had not been given in the abstract or paper. We rated each paper as either: accurately reflected headline, exaggerated benefit, exaggerated harm or made false claim.

Results

Our review yielded 14 front page medical headlines in four newspapers over a period of just 31 days (Figure 1). These headlines were carried by the Daily Express (11), Daily Mail (two), Daily Mirror (one) and Daily Telegraph (one). Neither the Guardian nor the Independent carried medical stories on their front pages during this period. The sources of each headline were peer-reviewed journal articles (10) position statements (two) or conference abstracts (two). None of the sources was given in the article that accompanied each headline, but all could be accessed without the need for passwords. Eleven headlines suggested benefits and

^{1,2}Medical Student, ⁴Consultant Physician, Medical Unit Dumfries and Galloway Royal Infirmary, Dumfries, UK; ³Clinical Director, Bazian, Economist Intelligence Unit Healthcare, London, UK

Figure 1 Front pages in August and September 2017 that carried medical news stories

three suggested harm. One headline accurately reflected its source material, but in this instance the source material was of doubtful clinical relevance. The remaining 13 headlines either exaggerated benefit (seven), exaggerated harm (two) or made false claims (four). We document the differences between the headlines and the source material in the case histories that follow.

15 August Daily Express – Wine Is Key To A Longer Life: daily drink can slash risk of an early death.

Source: Journal article³

Context: Evidence regarding the risk of morbidity and mortality among light-to-moderate drinkers is inconsistent.

Method and results: 333,247 adults >18 years of age in US National Health surveys recruited between 1997 and 2009. Self-reported alcohol consumption patterns included light (≤ 3 drinks per week) and moderate drinkers (3–13 drinks per week in males and 3–6 drinks per week in females). Compared to lifetime abstainers, light and moderate drinkers were 20% and 19% less likely to die during a median follow up of 8.2 years, respectively. Males and females who drank more than this had 13% higher all cause and 40% higher cancer-specific mortality than lifetime abstainers.

Our verdict: Exaggerated benefit as risk of early death was not slashed and there was no mention of risks of heavy drinking.

22 August Daily Express – Arthritis: New Hope To End Pain: experts step up battle to beat agonising condition that blights millions of lives.

Source: Specialist society report⁴

Context: Musculoskeletal conditions are extremely common, can have a devastating impact on a person's quality of life, are costly and are a growing problem.

Method and results: This was a report on the state of the UK's musculoskeletal health using evidence from national datasets, surveys and audits. It was not a treatment trial. The report described the impact of a range of musculoskeletal conditions, including rheumatoid arthritis, gout and osteoarthritis, on individuals, society, work, health, social care and wider economy.

Our verdict: False claim because no new hope or trial results were presented.

24 August Daily Express – Daily Walk Adds Years To Your Life: just 10 minutes can help you fight diabetes, heart disease and dementia.

Source: Public Health England⁵

Context: Previous advice to exercise for at least 30 min per day on at least 5 days per week is probably unachievable for most. Achieving lower levels might be motivating and encourage people to progress to more time spent exercising later.

Method and results: Authors reviewed evidence relating to 10 min brisk walking 7 days a week and concluded, somewhat optimistically, that this was likely to increase uptake and utilisation of oxygen by 10%, and that this in turn would be associated with a 15% reduction in mortality.

Our verdict: Exaggerated benefit. It is difficult to escape the view that exercise is a good thing, but the headline should have at least emphasised that walking had to be brisk and that more physical activity is better.

28 August Daily Mail – Best Heart Drug Since Statins: three monthly injection could save thousands of lives.

Source: Journal article⁶

Context: Experimental and clinical data suggest that reducing inflammation without affecting lipid levels may reduce the risk of cardiovascular disease.

Method and results: 10,061 patients with stable coronary artery disease after previous myocardial infarction and high sensitive CRP level of $\geq 2\text{mg/l}$ were recruited. Patients were randomised to three different doses of canakinumab SC every 3 months or placebo. Primary endpoint was non-fatal myocardial infarction, non-fatal stroke or cardiovascular death. At a median follow up of 3.7 years, the incidence rate for primary endpoint was 16.0% in the placebo group and 14.0% in those taking canakinumab 150 mg [hazard ratio: 0.85; 95% confidence interval (CI): 0.74–0.98]. Absolute risk reduction (ARR) was 2%; therefore, number needed to treat to save one non-fatal myocardial infarction, non-fatal stroke or cardiovascular death (1/ARR) was 50. Canakinumab costs £9,927.80 per injection, equating to £39,711.20 per year; therefore, cost of treating 50 patients for 3.7 years to save one primary endpoint is £7,346,572. Canakinumab was associated with a higher incidence of fatal infection than placebo (1.1 vs 0.7%; $p = 0.02$).

Our verdict: Exaggerated benefit as the treatment did not save lives. Cost was not mentioned.

29 August Daily Mirror – Statins Halve Risk of Breast Cancer: cholesterol tablets lower chance of getting disease ... and of dying from it.

Source: Abstract⁷

Context: Hyperlipidaemia is a well-established cardiovascular risk factor, and may also be a risk factor for cancer.

Method and results: 16,043 women >40 years of age with hyperlipidaemia (not further defined) and 16,043 age and sex-matched controls without hyperlipidaemia were recruited. Main outcome measure was new cases of breast cancer developing over 10 years. Patients with hyperlipidaemia had a lower incidence of subsequent breast cancer than those without (0.5 vs 0.8%; odds ratio: 0.67; 95% CI: 0.49–0.93). For reasons not explored in the abstract they also had a lower risk of death (13.8 vs 23.7%; odds ratio: 0.60; 95% CI: 0.57–0.64).

Our verdict: False claim as this was not a treatment trial and statins were not even mentioned in the abstract.

29 August Daily Express – New Ibuprofen Health Alert: painkiller raises blood pressure in arthritis sufferers.

Source: Journal article⁸

Context: Even small differences in blood pressure may impact cardiovascular morbidity and mortality.

Method and results: 444 patients were randomly allocated to celecoxib, ibuprofen or naproxen. The mean daily doses of celecoxib, ibuprofen and naproxen were 208 mg, 2,031 mg and 852 mg, respectively. Primary outcome measure was effect on 24-h ambulatory blood pressure (BP) after 4 months. The change in mean 24-h systolic BP in celecoxib, ibuprofen and naproxen-treated patients was -0.3 mmHg, 3.7 mmHg and 1.6 mmHg, respectively. p-value for comparison between celecoxib and ibuprofen was <0.001.

Our verdict: Accurately reflected headline, but who would prescribe ibuprofen 2,000 mg daily for 4 months anyway?

2 September Daily Express – Blood Pressure Breakthrough: super cream just as good as taking pills.

Source: Journal article⁹

Context: Oral magnesium has been shown to lower blood pressure. No previous studies have looked at effects of transdermal magnesium in humans.

Method and results: 25 subjects were randomly allocated to receive magnesium cream or placebo for 2 weeks. Primary outcome was the change in serum and urinary magnesium. Serum magnesium increased from 0.82 to 0.89 mmol/l in those randomised to active treatment, and from 0.77 to 0.79 mol/l in those taking placebo cream. Neither change was statistically significant.

Our verdict: False claim as this was not a treatment trial and blood pressure was not even mentioned in the paper.

7 September Daily Express – Proof Statins Can Save Your Life: heart pills slash risk of early death by 28% says new study.

Source: Journal article¹⁰

Context: It remains unclear whether statins lower all-cause mortality in patients with hyperlipidaemia and no evidence of vascular disease.

Method and results: 2,560 West of Scotland males with no evidence of vascular disease, aged 45–64 years at baseline, who had low-dose lipoprotein (LDL) cholesterol >4.9 mmol/l (equivalent to total cholesterol >6.8 mmol/l) were randomised to pravastatin 40 mg once daily or placebo for 4.9 years then followed for further 15 years. Among individuals with LDL cholesterol >4.9 mmol/l pravastatin reduced all-cause mortality from 36.1 to 30.7% (hazard ratio: 0.82; 95% CI: 0.72–0.94) over 20 years of follow up.

Our verdict: Exaggerated benefit. Risk of cardiovascular death reduced by 28%, but all-cause mortality (which is what readers will understand by ‘saving lives’) reduced by only 18%. We do not know if participants took statins for last 15 years of follow up.

8 September Daily Express – How To Keep Your Brain Sharp: 7 simple steps will help you ward off dementia.

Source: Presidential advisory¹¹

Context: Advances in our understanding of the role of cardiovascular risks have shown them to be closely associated with cognitive impairment and dementia.

Methods and results: Review of literature in order to make recommendations for maintenance of brain health. Authors recommended seven simple steps that can be measured, monitored and modified: manage BP control cholesterol, reduce blood sugar, get active, eat better, lose weight and stop smoking. Good evidence linking vascular risk factors with later development of cognitive decline, but only 4 out of 16 randomised clinical trials of the effect of vascular risk factor modification on the prevention of cognitive decline have shown benefits.

Our verdict: Exaggerated benefit as limited evidence that the seven simple steps will actually ward off dementia. The media have confused correlation with causation and implied a treatment benefit based on this.

9 September Daily Express – Diabetes Risk in ‘Dark’ Meat: experts say change your diet to help fight off the disease

Source: Journal article¹²

Context: Eating processed red meat is associated with a higher risk of type 2 diabetes (T2DM). Does the same risk apply to unprocessed red meat?

Method and results: 63,257 Chinese adults aged 45–74 years were recruited between 1993 and 1998. A 165 item semi-quantitative food frequency questionnaire to evaluate usual diet was carried out at recruitment. 5,207 new cases of T2DM were reported during average follow up of 10.9 years.

Those eating most red meat were more likely to develop diabetes (adjusted hazard ratio: 1.13; 95% CI: 1.01–1.25 for highest vs lowest quartile of red meat intake). No such relation was found for poultry or fish.

Our verdict: Exaggerated harm as risk was only just statistically significant and is of doubtful clinical relevance. Unlikely that eliminating red meat from diet is as important as weight loss.

11 September Daily Telegraph – Bleach is Linked to Fatal Lung Disease.

Source: Abstract¹³

Context: Exposure to disinfectant has been associated with respiratory health effects including asthma. Despite biological plausibility for an association with chronic obstructive pulmonary disease (COPD), available data are sparse.

Methods and Results: 55,185 nurses who were still working and had no history of COPD in 2009 were recruited. 663 nurses developed COPD during 8 years of follow up. The authors say that 37% nurses were exposed to disinfectant at work but do not give the numbers of COPD cases in exposed and non-exposed groups. We think it must be around 285 (1.4%) of those exposed. Using disinfectant to clean surfaces at work on a weekly basis increased risk of COPD by 22% (adjusted odds ratio: 1.22; 95% CI: 1.04–1.43).

Our verdict: Exaggerated harm. Headline linked bleach to fatal lung disease, yet risk of COPD was small and no mortality data were presented in abstract.

11 September Daily Express – Pill to Slash Heart Deaths: ‘phenomenal’ new treatment could help to save thousands.

Source: Journal article¹⁴

Context: We know aspirin is effective as secondary prevention, also that warfarin with aspirin is more effective than aspirin alone, but is associated with more bleeding. Is aspirin and rivaroxaban, a factor Xa inhibitor, more effective than aspirin alone, with acceptable safety?

Method and results: 27,395 participants with stable vascular disease were randomised to receive rivaroxaban 2.5 mg twice a day plus aspirin 100 mg once daily or aspirin 100 mg once daily, then followed for mean of 23 months. Cardiovascular death occurred in fewer patients in the rivaroxaban plus aspirin group than in the aspirin alone group (1.7 vs 2.2%; hazard ratio: 0.78; 95% CI: 0.64–0.96). ARR was 0.5%, therefore, number needed to treat to save one cardiovascular death was 200. Major bleeding was more common in the rivaroxaban plus aspirin group (3.1 vs 1.9%; hazard ratio: 1.70; 95% CI: 1.40–2.05; number needed to harm was 83).

Our verdict: Exaggerated benefit because heart deaths were not slashed, also there was no mention of bleeding risk.

13 September Daily Express – Simple Diet Can Reverse Diabetes.

Source: Journal article¹⁵

Context: Restoration of normal glucose control is possible after weight loss in some individuals with T2DM after bariatric surgery and also after very low calorie diet (VLCD). The purpose of the study was to see if this can be maintained in the longer term.

Method and results: 29 patients with T2DM followed a liquid VLCD containing up to 700 calories for 8 weeks, followed by a structured programme of weight maintenance. All oral agents or insulins were stopped at baseline. 12 out of 29 (40%) achieved fasting blood glucose <7 mmol/l at 6 months and were judged to have responded.

Our verdict: Exaggerated benefit. Diet was not simple and only 40% responded. Those who did were younger, had shorter duration diabetes and were taking less antidiabetic treatment.

15 September Daily Express – Lose Weight to Lower Blood Pressure: shedding pounds is more important than giving up drinking and smoking.

Source: Abstract¹⁶

Context: The purpose of this study was to analyse the impact of maintaining five health behaviours on blood pressure levels over 25 years.

Method and results: 4,630 participants aged 18–30 years were recruited in 1985, then followed for 25 years. Healthy behaviours were defined as: BMI <25 kg/m²; never smoking; up to seven drinks per week for women and up to 14 for men; 150 min of moderate-to-vigorous physical activity per week; and adhering to Dietary Approaches to Stop Hypertension eating plan. Participants who maintained optimal body weight were 41% less likely to have increasing blood pressure as they aged. Maintaining the other health behaviours had lesser effects on blood pressure.

Our verdict: False claim because this was a study about maintaining a healthy weight not losing weight.

Discussion

Our review of medical stories that made the news in three tabloid and three broadsheet UK newspapers during a period of only 1 month revealed 14 front page headlines, nine of which either exaggerated benefit or harm, and four of which made completely false claims. We suspect this is a higher than average number of headlines, reflecting the fact that August and September are months in which many international conferences are held and parliament is in recess. Tablets that slash deaths, lifestyle measures to ward off dementia, simple diets to reverse diabetes, health risk in ‘dark’ meat, phenomenal new treatments to save thousands

Box 1 Resources for journalists covering healthcare stories

- **Science Media Centre:**
<http://www.sciencemediacentre.org/>
- **Sense about Science:**
<http://senseaboutscience.org/>
- **Winton Centre for Risk and Evidence Communication:**
<https://wintoncentre.maths.cam.ac.uk/>
- **Royal Statistics Society resources:**
<https://www.statslife.org.uk/resources/for-journalists/courses>
- **63 Postgraduate Courses for Science Communication in Europe:**
<https://www.postgrad.com/courses/science-communication/europe/>
- **A growing number of courses specifically for medical and healthcare journalism:**
<http://www.europeanhealthjournalism.com/> and the **Medical Journalists' Association:**
<http://www.mjauk.org/>
- **Check lists and tips for reporters:**
<https://www.healthnewsreview.org/toolkit/tips-for-understanding-studies/>

– each of the 14 headlines in our survey contained at least a grain of truth, but in each there was a clear and very obvious attempt to sensationalise or to alarm. Despite many attempts by doctors to influence the quality of medical news reporting in UK national newspapers in the last two decades,^{17–23} our survey of 14 consecutive front page health stories would suggest that little has changed. It seems unlikely, therefore, that a further appeal to newspaper editors to report rather than sensationalise health stories will make a difference.

We recognise that it would be wrong to blame the media entirely as press releases issued by universities and research centres may be where at least some of the misreporting stems from. Press releases, which are not peer reviewed, are frequently exaggerated because researchers have to show ‘impact’ and are competing to get their stories into the headlines.²⁴ A recent study confirms this, namely that an exaggerated press release is more likely to lead to an exaggerated headline.²⁵ Nevertheless, it feels reasonable to expect that health journalists are trained to interpret health news responsibly. A number of resources and training are available for journalists covering healthcare stories (Box 1). These address some of the core skills required for reporting on science, for example, critical appraisal (is this story true), simple statistics (what do the results mean, how confident can we be in the findings) and biomedical searching (what is already known and where does this research fit in).

If this continues not to happen then we feel that the following three steps could be taken. First, it should be possible to agree with newspaper editorial staff that medical stories carry a link to their source, be that a conference abstract or a peer-reviewed paper. Second, an approved press release could become a prerequisite for publication in a peer-reviewed

journal in much the same way that journal editors insist on summaries detailing 'what is already known' and 'what is new' when an article is submitted.²⁶ Third, those websites that aim to provide unbiased and evidence-based analysis of health stories that make the news^{27–31} could feed back to journalists as their counterparts do in the USA.³²

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