

medicine and physical education journals, and written 2 responses to letters from those entrenched in poor methodologies. Despite our polite, transparent, scientifically-based pleas for ‘constructive, collaborative debate’ we have encountered editorial bias, e.g. turned down without review; turned down despite positive reviews; appealed editorial decisions and been prevented from responding to letters commenting

Conclusions Others have attempted to diminish our contributions by employing in letters a tone of thinly disguised hostility or accusing us of evangelistic fervour whilst failing to justify their own methods. Yes, we are challenging; shifting an entire research culture, which has its roots in university teaching, is not easy – scientific rigour in aspects of our discipline plays second fiddle to practical, convenient, traditional and feasible. Although this is happening on the periphery of mainstream medical research, children’s health matters and as the population becomes increasingly sedentary and overweight we urgently need to develop scientifically rigorous methods to measure and interpret CRF in health and disease. Already a generation of researchers and policy makers has been misinformed and misled by flawed data. Those of us facing these challenges need to work together to develop strategies for shifting research culture back towards defensible science.

47 **COLORECTAL CANCER SCREENING – DOING NO HARM? – A SYSTEMATIC REVIEW OF THE EVIDENCE (ONGOING)**

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Objectives Screening for cancer intends to provide benefit and it unintentionally entails risk of causing harm. The type of harm most commonly studied is the risk of complications, i.e. physical harms. The risk of physical harm due to colorectal cancer screening has been quantified in systematic reviews. However, the harms of screening tend to be underreported and inadequately studied compared to the benefits of screening. In addition, the recently published PRISMA-harms extension raise concern that systematic reviews compound simplistic definitions, inadequate measurements and poor reporting in clinical studies of the harms of medical interventions. Due to these concerns, this systematic review aims to quantify the risk of physical harms due to colorectal cancer screening, to assess the quality of the evidence and to investigate the usability of guidance in the area, including the recommendations in the PRISMA-harms extension, the GRADE approach and the ROBINS-I bias assessment tool by the Cochrane Collaboration. **Method** A detailed account of the methods is available in the PROSPERO protocol (CRD42017058844). The review was conducted in line with the PRISMA harms extension and the Cochrane Handbook. Databases searched include Pubmed, Medline, Embase, Cinahl, PsycInfo and the Cochrane library. There were no restrictions concerning study design, language or date of publication. All types of studies were included if they provided data on physical harms due to screening of asymptomatic individuals in average risk of colorectal cancer by any combination of fecal occult blood testing, sigmoidoscopy and/or colonoscopy. The risk of bias was assessed per outcome via ROBINS-I, a bias assessment tool for non-

randomized studies. Prior to bias assessment, the tool was extended and adjusted to increase its applicability for studies reporting harms of screening. The overall quality of the evidence was evaluated using the GRADE criteria and the reporting quality of randomized controlled trials (RCTs) was judged via the CONSORT-harms extension.

Results Analyses are ongoing. Results will be presented at the conference. Preliminary trends: In total, 89 studies were included for review, 20 RCTs and 69 non-randomized studies (NRS) of various design. The majority of studies were conducted in Europe, the United States and in Asia. Both conduct and reporting of physical harms was very heterogeneous across RCTs and NRS. Overall, the risk of physical harms seems to be underreported, narrowly defined and inadequately measured in both RCTs and NRS. There is a trend towards higher estimates of harm in well-conducted studies (low risk of bias) and in studies of ongoing colorectal cancer screening programmes compared to RCTs.

Conclusions Pending analyses, the conclusions will be presented at the conference.

48 **OCTOPUS: A REVOLUTION IN SCIENTIFIC PUBLISHING**

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Objectives Octopus is a new publishing platform designed to replace journals and papers as the means of sharing scientific knowledge and ideas. It is designed to serve the needs of science and scientists above all else: to use every digital tool possible to ensure that good scientific practice is recognised and rewarded, and that there is no longer any advantage to questionable research practices.

Method Essential features of Octopus include:

- Complete language-agnosticism: every user reads and writes in their language of choice, maximising access.
- Free open access to read and publish
- The unit of publication is not a ‘paper’ but instead one of 8 shorter forms:
 1. Scientific problem
 2. Hypothesis
 3. Method/protocol
 4. Results/data
 5. Analysis
 6. Interpretation
 7. Implementation
 8. Review

Each publication must be linked to at least one ‘above it’ in the chain, apart from a Review, which can be linked to any other publication.

- **Rating of each publication** by readers (1-5 stars) on each of three predefined criteria, chosen to represent best practice in each kind of work => work is judged on the most appropriate criteria.
- **Red flagging of publications** by readers if they suspect misconduct (scientific, ethical, legal - eg. plagiarism) or serious error (eg. statistical).
- **Every author has a page listing their contact details, affiliations, potential conflicts of interest, and publications, with their ratings** (and who rated them).

Results The structure of Octopus would lead to a raft of improvements:

- Smaller author groups (for the smaller publication units) give more accessibility, meritocracy/accountability
- It encourages fast publication (to establish priority)
- It values each part of the scientific process regardless of subsequent or previous work (e.g. data can be published regardless of size or what it suggests about previous work) removing the pressures for questionable research practices
- It values perceptive reviewing and hence collaboration.
- It allows obvious flagging of potential issues in publications or with conflicts of interest.
- It removes many potential causes of bias (eg. removing first names in favour of initials in author lists)

It could also replace the wasteful process of grant funding submissions and improve the hiring/promotion systems within institutions by providing a crowd-sourced view of the quality of work.

Conclusions Octopus is not technically difficult to achieve and is now being built, with support and grants from several sources. It has the potential to change the way that scientific work is funded, carried out and shared - for the better.

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IS DISCLOSURE OF FINANCIAL CONFLICTS OF INTEREST IN PATIENT DECISION AIDS EFFECTIVE? INSIGHTS FROM A SIMULATED PILOT

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Objectives Patient decision aids are regarded as a strategy for engaging patients in decision-making, facilitating evidence translation, and reducing low-value health care. However, financial conflicts of interest among authors of these resources have the potential to bias their content and undermine their usefulness. The prevailing quality framework in this field – the International Patient Decision Aids Standards – requires that decision aids disclose author financial conflicts of interest. However, to our knowledge, no research has examined whether such disclosure has the desired effect. Our objective was to conduct a simulated pilot study of how members of the public perceive and respond to financial conflicts of interest disclosure in patient decision aids.

Methods We conducted an Internet-based between-subjects fractional factorial experiment. Participants were English-speaking adults in the United States invited by a research recruitment service. Quotas were imposed so the sample was composed equally of participants with adequate (AHL) and limited health literacy (LHL). Participants were asked to imagine they had been diagnosed with an illness, were presented with a fictional one-page decision aid on three treatment options (No Treatment, Abbatide, Benedent), and were advised either that they found it online or received it from a doctor. The decision aid featured a financial conflicts of interest disclosure either negative or positive in content and either basic or enhanced in detail and design. Participants completed several measures. Two items administered to verify the effectiveness of our experimental manipulation are the primary focus of this analysis.

Results After excluding people ineligible for the study or with missing or unreliable data, our sample comprised 395 participants. When asked if they read the conflicts of interest disclosure when they viewed the decision aid, 197 participants (49.9%) responded 'Yes' (AHL: 55.3%; LHL: 44.4%). Of participants who reported reading the disclosure, 72 (36.5%) gave a correct answer when asked, 'Are any of the authors of the decision aid paid by the company that sells Abbatide or Benedent?' (AHL 34.9%; LHL 38.6%). Overall, 18.2% of participants reported reading the disclosure and correctly recalled whether a conflict of interest was disclosed, with the lowest proportion (5.3%) observed for the basic, negative disclosure.

Conclusions A minority of study participants reported reading and correctly recalled the content of a financial conflicts of interest disclosure in a fictional decision aid. Whether these findings can be generalised to actual decision aid users is uncertain. Our recruitment of members of the public and use of a simulated illness scenario, although motivated by ethical considerations, may have weakened the salience of both the decision aid and the disclosure. On the other hand, knowledge of study participation along with the relative prominence of the disclosure in the fictional decision aid may have amplified participants' attention to it. Altogether, we tentatively conclude that disclosure of financial conflicts of interest in patient decision aids may not have the desired effect and advocate further research attention to optimal methods of addressing this issue.

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PERCEIVED EFFECT OF WEB-BASED SELF-HELP TOOL TO REDUCE DEPRESSIVE SYMPTOMS

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Objectives The objective of this study was to evaluate the perceived scope of effect across users of a web-based cognitive-behavioral therapeutic (CBT) mobile application for treatment of anxiety and mild depression (N=4711). In addition, the study sought to determine the potential preliminary effectiveness of the application in delivering self-administered CBT.

Method Participants (N=4711) were recruited from the users of the mobile application and were divided into three groups according to the length of use of the application. There was a significant difference in the scope of perceived outcomes between the first and the second group: Cohen's $d=0.56$, 95%CI[0.49-0.62] and between first and third group Cohen's $d=0.80$, 95%CI[0.72-0.88]. No significant differences were detected between second and third groups. The fact that many users spontaneously referred to a high level of psychological benefits in open questions suggests subjects perceived these as a notable benefit of using the method.

Results Participants in group one experienced a limited scope of effect compared to the medium and long-standing users in groups two and three. Subjects in these groups reported perceiving tangible changes in a wider range of areas as a result of usage, particularly regarding reduced symptoms of depression and anxiety. This study also explores the evidence base and novel research opportunities connected to the application. Collected data provides useful insights into how subjects typically interact with this application, a specific feature of which is that it can dynamically adapt to user's goals and needs.