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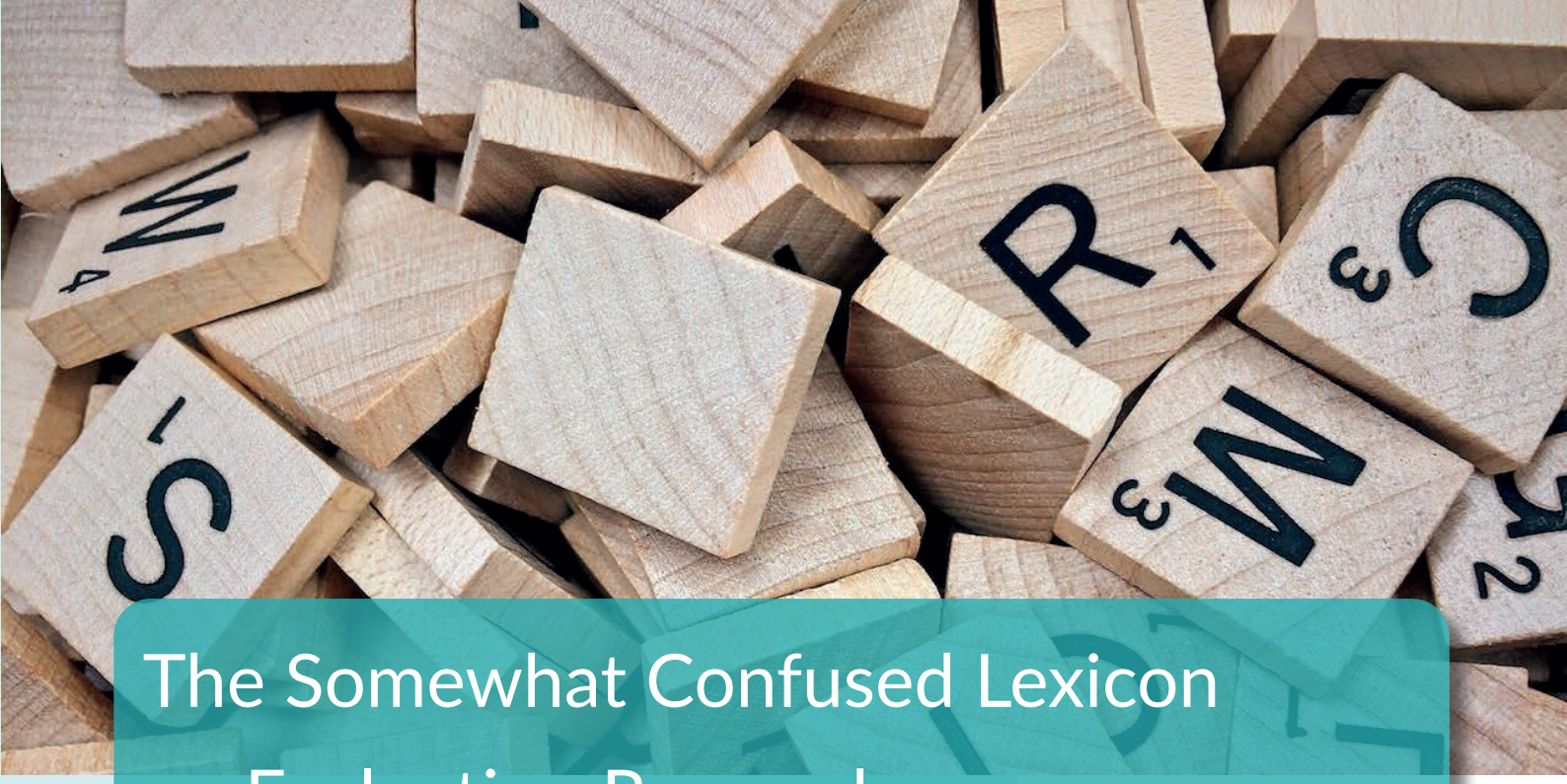


The Somewhat Confused Lexicon on Evaluation Research

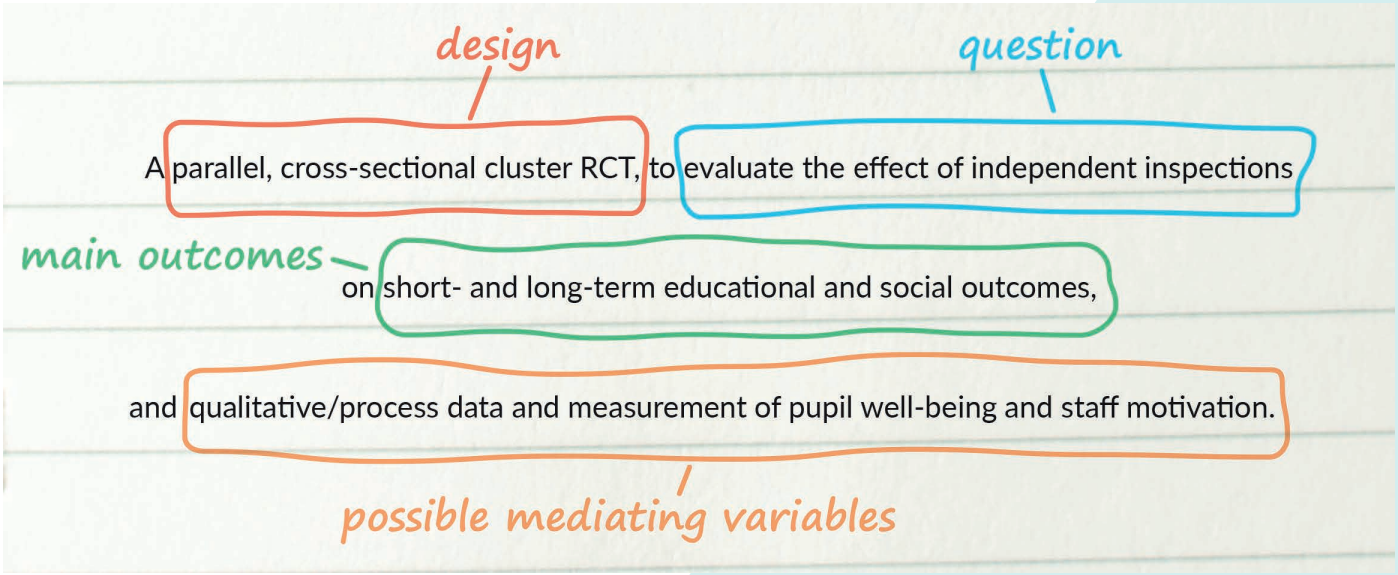
Richard Lilford, ARC WM Director

Has anyone noticed the rather confusing proliferation of words increasingly used to describe various aspects of evaluation? For example, words are frequently used to describe research design when they have nothing to do with design. "*We will use a mixed methods design*", for example. Mixed methods refer to the data collected (qualitative and quantitative), not the design of the study. It is possible to have a design ranging from an individual patient RCT to a cross-sectional survey, and in all cases collect qualitative and quantitative data. So, a better description might be '*a parallel cluster trial with qualitative and quantitative data collection.*' Less satisfactory, but arguably still acceptable, '*a mixed methods cluster RCT*' to acknowledge that qualitative research embodies a set of methods, albeit for data acquisition and analysis, not for the overall structure of the study.

Another term that is widely and loosely used is 'realist'. While the term realist has been appropriated by the systematic review fraternity, to mean a study that tries to make sense of an amalgam of studies (diffuse literature) that cannot be synthesised algorithmically, it is really a philosophical – in fact epistemological – term. I define it apophatically as an interpretation that goes beyond the limited structures of positivism and the vacuous dead-end of constructivism/relativism. More specifically, perhaps, it tries to look beyond any one set of observations to discern the underlying mechanisms. The cock's crow predicts the dawn, but the realist wants to know the causal mechanism – in this case the dawn causes the crow (I am told). So, the ARC WM Director pulls his hair out by the roots when someone says they will do a realist study or, worse, they will use a realist design. Realism is design agnostic. For some good examples of 'realistic' thinking, please see our News Blogs on milk consumption and osteoporosis, the Muslim mortality paradox, and the story of chorion villus sampling and limb deformities.[1-3] Most people today follow realist epistemologies; although some recidivists still take an hypothesis testing approach (especially to RCTs). However, most of us have imbued causal thinking and hence realism.

And now for my pet hate – realistic studies enable us to see '*what works for whom, when*'. Nonsense, they help us understand mechanisms by which we may infer 'what works for whom, when'. Direct measurement depends on sub-group analysis, which is sometimes possible – for example, when we have over 200 RCTs of service interventions for maturity-onset diabetes.[4]

So, I favour leaving out the word realism (with the possible exception of systematic reviews), describing 'design' in terms of the well-established principles (concerning whether and how the counter-factual is taken into account), what it is trying to find out, and what types of data are collected (including mediating variables and qualitative data). Below I parse a sentence in an attempt to show what I mean.



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Informing and Facilitating Choice in Maternity Care: What Do We Know & Where Are the Research Gaps?

Richard Lilford, ARC WM Director

The Theoretical Framework for Choice

Clinician/patient communication is a vast subject. Enabling preference-based choice is a particular issue within this broad topic. Maternity care provides a particularly large set of choices, covering pre-natal diagnosis, medical disorders in pregnancy, the timing and mode of birth, and so on. At the heart of many of these decisions lies a trade-off between foetal and maternal outcomes.

Patient Choice & Maternity Care

It has been four decades since publication of the seminal work on Clinical Decision Analysis by Weinstein and Fineberg.[1] In turn, these authors built on the work of von Neumann & Morgenstern [2] and John Nash.[3] Decision Analysis (formally Expected Utility Theory) provides an intellectual framework for choice by decomposing decisions into values and probabilities, and using these quantities to calculate the expected utility of various courses of action. Expected Utility Theory was first used to inform choice of pre-natal diagnosis for Down's syndrome by Pauker and Pauker.[4] The technique was then used to decompose choice of mode of birth for Breech Delivery.[5]

Although Expected Utility Theory provided an axiomatic framework for decision analysis, the explicit valuation of preferences that it entails was seldom practice in the consulting room. Rather, explicit valuations were used to represent group preferences for group decisions – that is to say, Expected Utility Theory was adapted by economists in the form of Cost Utility Analysis. While the idea of eliciting explicit trade-off functions never took off in clinical practice (with a few brave exceptions such as Pauker & Pauker above [4]), the underlying theory made the role of preferences explicit.

The Wane of Paternalistic Care and Rise of Non-Directive Counselling

Application of Expected Utility Theory to choices in health care in the 1970s and 1980s coincided with strong challenge by sociologists, such as Ann Oakley and Angela Coulter, to the 'paternalistic' model of patient/doctor communication. Ideas of non-directive counselling, and later of 'shared decision making', became popular – the latter emphasising the need for emotional support in the decision-making process.

Inherent in these ideas of non-directive counselling was the need to present women and their partners with the probabilities on which trade-offs turn. Since the best way to do this was not self-evident, a strong theme of research developed into how to maximise understanding of probabilities. This work was underpinned by the Nobel prize-winning work of Khaneman & Tversky,[6] which showed, among other things, that people are strongly influenced in their choices not just by the probabilities, but by how these numerical probabilities are presented. Gird Gigerenzer [7] and many others rose to the challenge of turning these findings into

recommendations for practice. This work has yielded evidence-based guidelines covering many facets of the subject – framing probabilities both positively and negatively (there is a 98% chance of survival – a 2% chance of death) to avoid 'anchoring'; using proportions rather than simple frequencies (0.5% not 1/200); using natural frequencies not proportions to explain contingent probabilities (50 people in 1,000 test positive for Down's syndrome and of them 20 will have Down's syndrome); and use pictorial descriptions of such quantities. For a majestical review of the state of the science in presenting probabilities see Spiegelhalter.[8]

Finding out how to frame probabilities is one thing, but how to implement this knowledge in practice is another. Two (non-exclusive) themes of work evolved to deal with this issue: decision aides and clinician education.

Decision Aids

A definition of a decision aid from ChatGPT is shown in the box.

> *"A decision aid is a tool or resource that provides information, guidance, and support to help individuals or groups make informed and effective decisions. It can take various forms, such as a checklist, a flowchart, a decision tree, a computer program, or a consultation with an expert. The purpose of a decision aid is to clarify options, weigh risks and benefits, consider values and preferences, and reduce uncertainty and complexity in decision-making. Decision aids can be used in various domains, such as healthcare, finance, education, and environmental policy, to empower people to make choices that align with their goals and values."*

Decision aids have been extensively studied in health care generally, and maternity care in particular. Guidelines for the production of decision aids have been published by NICE,[9] while the more recent Cochrane review of "Decision Aids for people facing health treatment or screening decisions" by Stacey, et al has over 7,800 citations.[10] The study includes 105 randomised control trials (RCTs). Outcomes evaluated across these studies include knowledge, accuracy of risk perception and score on a well-known scale of 'decision conflict'. The summary statistics show improvements across all these outcomes. Use of decision aids increases consultation time by only 7.5% on average (though this figure includes use of aids before as well as during consultation). Interestingly, only three of the studies included in the review concerned maternity care (two for patients who had previously undergone a Caesarean section, and one for patients who were diagnosed with a breech presentation).[11-13] However, a more recent systematic review found 35 RCTs on decision aids across both obstetrics and gynaecology (the study included all three of those in that by Stacey, et al.).[14] Eleven of these RCTs concerned maternity care. Of these eleven, seven concerned pre-natal diagnosis/screening, and four were concerned with caesarean vs vaginal birth (three in the context of a previous caesarean and one in the context of breech delivery). Again, this review across obstetrics and gynaecology found that decision aids reduced decisional conflict and improved knowledge of the condition and of decision options.

Clinical Education

Counselling and assisting informed choice is more than a matter of presenting the numbers in a neutral and understandable way as possible; a point captured in Spiegelhater's review.[8] This concept is enshrined in the term 'shared decision making', as opposed to the more detached 'patient informed choice' or even non-directive counselling. Surprisingly, little work has taken place on educational interventions to improve clinical practice, as confirmed in a recent study of just such a paper in JAMA.[15, 16] It is clear, then, that more development and

evaluation is required on how to maximise the ability of clinicians to support choice, as we discuss further below.

Research Gaps

From the above brief account, I would like to propose the following agenda. First, there are topics that are less urgent, since they have already been quite extensively studied:

1. Work on how to present probabilistic information. As we have seen, there has been extensive work on this topic and enough is known to provide a basis for further applied work. That is not to conclude that we 'have reached the end of history' and there is nothing more to be discovered. However, short of original ideas (we discuss one possibility below), we can move forward on the basis of existing evidence-based guidelines.
2. Develop decision aids in areas replete with them – previous caesarean section and pre-natal diagnosis, for example.

However, there are considerable knowledge gaps:

1. Uptake of decision aids

While the literature includes numerous articles on decision aids, current evidence is that they are not widely used in practice – even in areas where they have been developed according to published standards and evaluated favourably. [10] We think a survey should be conducted into the uptake of decision aids in the UK, including questions on barriers and facilitators to widespread adoption.

2. Fitting decision aids into the clinical work flow

One of the frequent reasons given for failure to use decision aids relates to time. Time is the precious resource at the heart of any service industry such as health care.[17] Given that shared decision making is inevitably time consuming for hard-pressed staff, the question can be framed as 'how can decision aids be incorporated into the work flow so as to minimise time constraints?'. There are a number of ideas that could be pursued: web-based resources, online decision aids 'prescribed' through algorithms built into electronic notes, decision aids prescribed by the clinician, interactive decision aids to help patients clarify their views before and after consultations. The theory that should underline any policies in this area is that making a choice is a process, not an immutable event emanating from a single consultation. Thus, work is needed into how decision aids should be incorporated in the patient 'journey'.

We propose a study in which decision aids are made publicly available on the web, accessible through information supplied by care providers and 'prescribable' from within the electronic notes. Likely, there will be no one-size-fits-all solution, if only because the degree of urgency varies. Take for example, the decision to accept or decline screening for chromosome abnormality vs selecting immediate or delayed delivery for Caesarean section. In the former scenario, there is no hurry offering numerous opportunities for use of decision aids (within or outside the consultation), visits to a clinicians, and private reflection and discussion with friends and relatives. The latter scenario is more urgent and events will evolve rapidly (over days). Clearly, the process of supporting and informing decisions has to be adapted according to the urgency of the situation.

3. Development of decision aids in areas which are poorly served

Initial ideas, to be developed further include:

a. Early vs delayed delivery for pre-eclampsia according to gestational age and markers of severity.

b. Home vs hospital birth.

c. Caesarean section for conditions other than

previous caesarean or breech. Suspected large baby may serve as an example.

d. Medical disorders in pregnancy where medication may help the mother but harm the baby – epilepsy, for example.

e. Induction of labour in various circumstances.

4. Clinical education

Studies frequently show that the presentation of information provided for women and their partners is variable in context and style of delivery. We therefore think that there is an urgent need to develop optimised and then standardised information sets (scripts) along the lines followed by the Royal College of Obstetricians & Gynaecologists in the 1990s. [18] These scripts could then be included in an educational intervention to improve communication to inform choice.

Conclusion

There are a number of research gaps to be filled and we would value feedback on the most pressing issues, along with advice on study design.

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Landmark Study in the Field of Gastrointestinal Disease in Children in Low- and Middle-Income Countries (LMIC)

Richard Lilford, ARC WM Director

The most common outcome reported in trials of water, sanitation and hygiene (WASH) interventions is the rate of childhood diarrhoea reported by carers on large-scale surveys.[1] However, this outcome is highly dependent on how the question is phrased [2] and, worse, is neither as sensitive nor specific as an indication of infection compared to microbiological gut infestation.[3] In fact the Receiver Operating Condition (ROC) curve was virtually diagonal in the latter study. This means that results are biased towards the null and that may explain the unimpressive results of many recent large-scale cluster RCTs.[1, 4-6]

I was therefore delighted to read an excellent systematic review and meta-analysis by Waddington and colleagues on WASH interventions that examined impact on childhood death.[7] Death is an objective outcome that is not mis-represented in studies.[8] Many of the studies were individually too small to reliably estimate mortality rate differences – hence the value of this meta-analysis. Nearly 700 full text reports had to be (double) screened to find 30 studies (24 RCTs) reporting death rates in LMIC children under the age of five and published in a peer-reviewed journal.

The point estimates were positive for 30 of the 38 comparisons (some studies yielded more than one comparison). All piped water interventions yielded positive point estimates. In five studies the null value was not over-lapped by 95% CIs and four of these involved piped water. Meta-analysis of all seven piped water interventions showed an odds ratio for death of 0.66 (within narrow CIs). This contrasts with hygiene interventions that had a lower effect size and wide CIs that included null values. Effects from sanitation improvements were also unimpressive. Drinking water treatment and storage also had unimpressive effects. Not only is piped water the most effective intervention, but there is some evidence that piped water is a necessary ingredient for hygiene interventions to be effective.

The study cleverly used a negative control in which the effect of interventions on mortality in older children (>5) and adults was evaluated. The intervention had no effect in this group, suggesting no overall bias. The score on the risk of bias assessment did not affect results in children under five. There was no evidence of publication bias.

This is a brilliant study and provides further evidence that survey-based diarrhoea should be extirpated from the list of potential outcomes in evaluations of interventions to reduce gastrointestinal infections.

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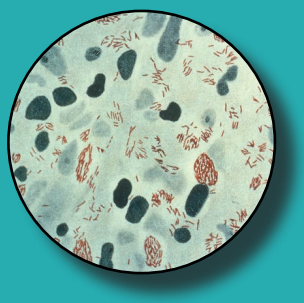
ARC WM Quiz

What is the only animal (apart from humans) that can get leprosy and why?



email your answer to: ARCWM@warwick.ac.uk

Answer to previous quiz: The UK monarch whose coronation was postponed due to appendicitis was **King Edward VII** in 1902. Congratulations to Alan B Cohen and Alan Hargreaves who were first to answer correctly.

You can find out more in this recent paper: Lovasik BP, et al. From the Base of the Cecum to the Throne of England: King Edward VII's Appendix. *Am Surg*. 2023; **89**(5): 2141-4.

Manipulating the h-Index?

Richard Lilford, ARC WM Director

The h-index has been discussed previously in your ARC WM News Blog.[1] It is coming under criticism because, as years have passed, it performs increasingly poorly as a predictor of scientific awards.[1] One explanation for this finding is the unequal contributions of authors in multi-author papers to which many authors have made negligible (or even no) meaningful scientific contribution. Instead, fractionated citations have been suggested, whereby the credit attributed is divided among all the authors. I do not like this solution because justice for low contributing authors is achieved at the expense of high contributors. In any event, the h-index still has wide currency. The number 100 is particularly salient. I wondered whether authors who reach 98 or 99 might make some particular effort to massage their near-miss citations (i.e. those with 98 or 99 citations) over the threshold. This would show up as a deficit in citations just below the threshold (say 98 and 99), and an excess just over the threshold (say 100 and 101) compared to the longer trend. However, as can be seen in the figures below, there appears to be no hint of such a threshold effect as we have seen with respect to threshold for hospital performance.[2, 3]

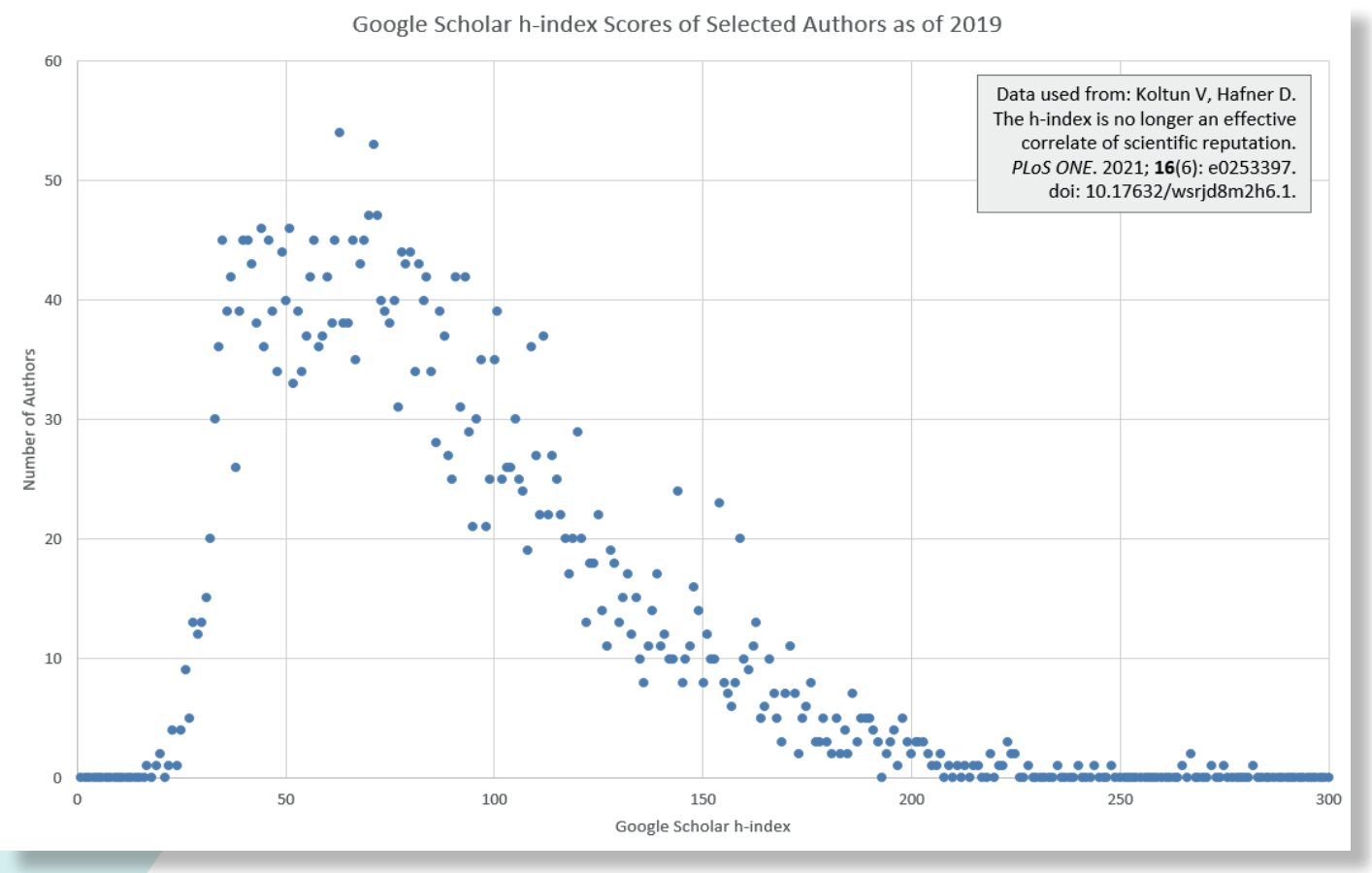


Figure 1: Google Scholar h-index Scores of Selected Authors, as of 2019.[1]

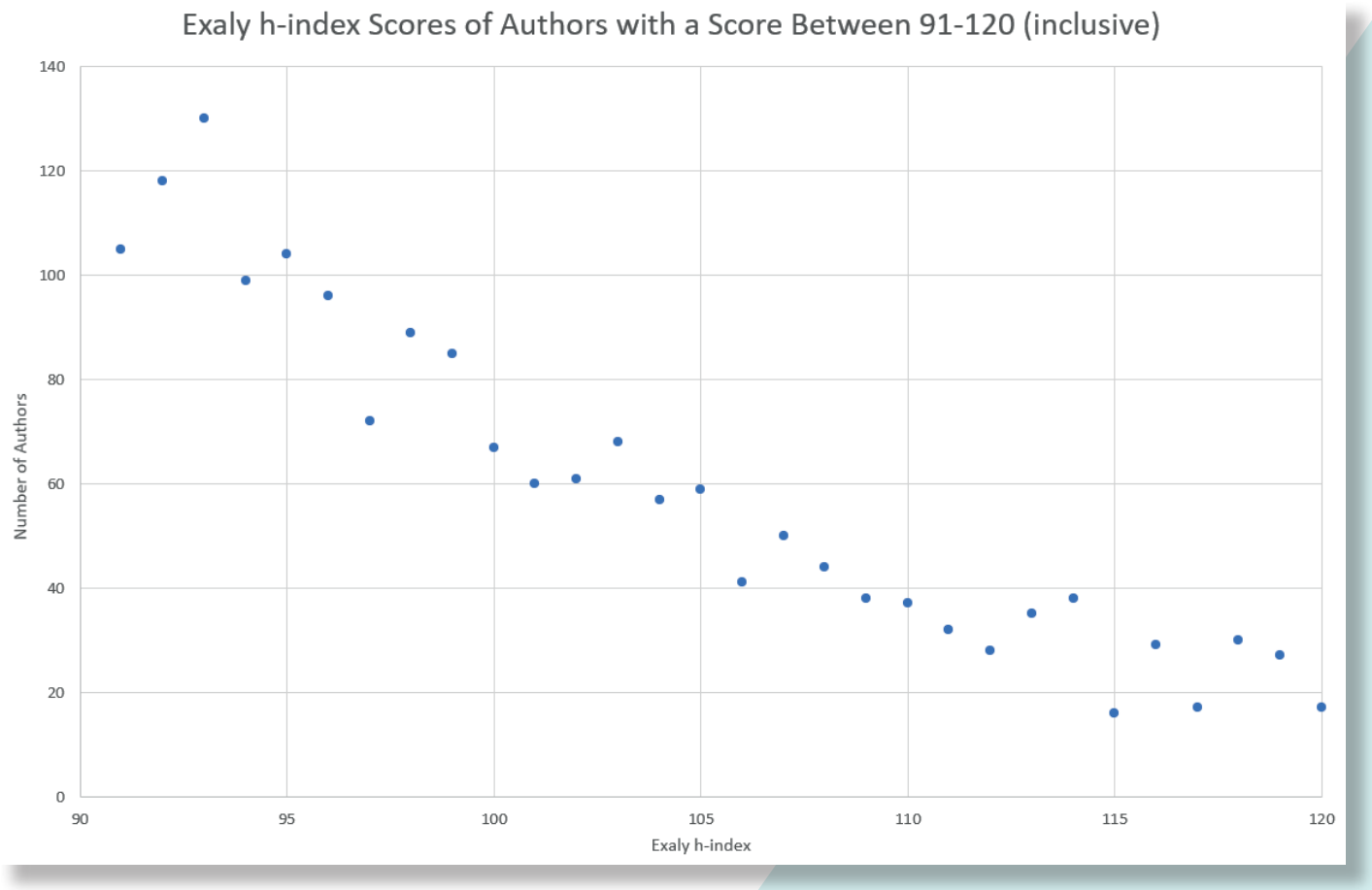


Figure 2: Exaly h-index Scores of Selected Authors (n=1749) with a score between 91-120 (inclusive). [4] NB. Exaly calculate h-index solely from peer-reviewed articles and some book chapters (in comparison Google Scholar uses reports, blogs, etc).

Full disclosure: Richard Lilford has an h-index of 99, The recalcitrant article (with 98 citations) is on applying action research to health services.[5] I commend it!

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Effect of Cash Transfers on Mortality

Richard Lilford, ARC WM Director

The concept of providing cash transfers to incentivise healthy behaviour has been looked at in several of our previous News Blogs.[1-3] A new meta-analysis, published in Nature,[4] examined the effects of cash transfers on mortality in low- and middle-income countries. Mortality is a potential outcome of cash transfer schemes for which evidence has previously been limited. It has long been known that living in poverty can lead to poorer health outcomes and is linked to a significant decrease in life expectancy. Since the COVID-19 pandemic the number of people living in extreme poverty (defined as living on less than US$1.90 per day) has increased drastically (an estimated 97 million more people in 2020) so there is an ever more pressing need to implement strategies to help reduce poverty.

This study evaluated 29 large-scale cash transfer programmes in 16 countries, each led by the government. The data were harvested from the Demographic Health Surveys (DHS) that are carried out periodically in most LMIC countries. These surveys enabled age-specific mortality rates to be compared when surveys straddled the implementation of a cash transfer scheme. By synthesising the effects on mortality across many cash transfer programmes, the authors were able to obtain a level of statistical precision not possible from a single centre study.

There was an overall association between cash transfer programmes and significant reductions in mortality for children under five (adjusted risk ratio [ARR] 0.92, 95% CI 0.85-0.99) and adult women (ARR 0.80, 95% CI 0.67-0.95). There were no significant effects for older children (for those aged 5-9 years, ARR was 0.96, 95% CI 0.86-1.08; for those aged 10-17 years, ARR was 0.93, 95% CI 0.78-1.10) or adult men (ARR 0.87, 95% CI 0.75-1.00). Nevertheless, point estimates were towards lower mortality.

Further analyses showed that there were similar effects whether the programmes were conditional (n=15) or unconditional (n=14); and larger effects were seen in the cash transfer programmes that included a larger proportion of the population, transferred larger amounts of money, and were conducted in countries where health expenditure and life expectancy were lower, and regulatory quality was higher.

These results corroborate the massive Bolsa Famíliae conditional transfer study (involving 130 million people) in Brazil, and reported in your previous News Blog.[5] These studies are not experimental but, taken in the round, they provide evidence that these programmes really are effective. Whether similar (or even greater) benefits could be obtained by different expenditure of the same amount of money is a different topic for a different day!

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Effectiveness of Tonsillectomy

Peter Chilton, Research Fellow

Having your tonsils removed is a common operation and is regularly done to adults with recurrent tonsillitis (~27,000 in 2021-22 in the UK),[1] but there is little high-quality evidence on its effectiveness compared to other treatment options.

A recent study in the Lancet aimed to assess the effectiveness of tonsillectomies compared with conservative management of tonsillitis.[2] The study was carried out in 27 UK hospitals, with 453 patients randomised to intervention (surgery within 8 weeks) or control arms (non-surgical care for 24 months). During the 24 months of follow-up, those who had undergone surgery had fewer days of sore throats compared to those in the management group (23 days median [IQR 11-46] vs 30 days [IQR 14-65]). Following adjustment for baseline severity, the incident rate ratio of total sore throat days was 0.53 (95% CI 0.43-0.65) in favour of tonsillectomy group ($p<0.0001$).

Tonsillectomy also had an estimated 85% probability of being cost-effective compared to conservative management (with a £5,000 threshold value for an additional QALY), and was less costly than conservative management when taking participant costs into account.

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Dame Sheila Sherlock: Ground-breaking Hepatologist (*specialising in gallbladders, livers, the pancreas and bile ducts*)

Phillip Simmons, ARC WM Project Administrator

Born on 31 March 1918 in Dublin, Ireland to Violet and Samuel Sherlock (a lieutenant in the 1st Cavalry Reserve), Sheila and her family soon after moved to London and then Kent where Sheila was educated at the Folkstone County School for Girls. Wanting to study medicine she applied to several schools over the course of a year, before finally being accepted into the University of Edinburgh in 1936.

Sheila graduated at the top of the class in 1941 writing her thesis on "*The Pathology of Acute Hepatitis*", and became the second-ever female recipient of the *Ettles Scholarship*. After graduating she stayed at Edinburgh as an Assistant Lecturer for a year before being appointed as a House Physician at the Royal Postgraduate Medical School, Hammersmith Hospital, working under Professor Sir John McMichael. Here her work was funded firstly by a Medical Research Fellowship, then a Beit Memorial Research Fellowship, during which time she earned her MD with a thesis on "The Liver in Disease: with special reference to aspiration liver biopsy." For this she received a gold medal from Edinburgh University.

She continued to climb the ladder at Hammersmith, becoming a lecturer and then a consultant, before becoming a Rockefeller Travelling Fellow for one year (1947-48) working at Yale University on "*carbohydrate metabolism and liver disease*".

At the age of just 33 she became the then-youngest woman to be elected to the Royal College of Physicians as a Fellow.

In 1955 she published "*Diseases of the Liver and Biliary System*" the book for which she is most well-known and was the sole editor for all future editions until 1993 (the book continued to be used, with the latest edition updated in 2018). She went on to publish more than 600 papers throughout her career.

In 1958 she co-founded the "*International Association for the Study of the Liver*" alongside Hans Popper.

In 1959 she was appointed as the Professor of Medicine at London's Royal Free Hospital, this was a first for any woman at any hospital in the UK. It was here that she founded a liver unit which, despite being a temporary wooden structure sited on the hospital roof, was a beacon for students from around the globe. It was so well regarded that it has been anecdotally noted that at one time all of the top hepatologists worldwide had worked under her.

In 1966 she co-developed the standard test for Primary Biliary Cirrhosis and later in her career she also confirmed that it was an autoimmune disease.

In 1976 Sheila became the Vice President of the Royal College of Physicians, the first woman ever to hold the post.

In 1978 she was made a Dame Commander of the Order of the British Empire.

In 1983 Sheila stepped down from the chair of medicine at the Royal Free Hospital and in 1988 she founded and was subsequently elected as the president of the British Liver Trust.

Dame Sheila Sherlock passed away on December 30, 2001 with her legacy being one of a ground-breaking pioneer for women and being considered the number one contributor to the study of hepatology in the 20th century. She was at the top of her field of research for decades, improving our understanding of the causes and effects of liver disease. In 2008 the pioneering liver unit at the Royal Free Hospital was renamed after her, ensuring her name will continue to be remembered.

The ARC WM Director met his spouse at the Royal Free Hospital where she was taught by Sheila and even played in her annual tennis tournament!

Latest News and Events

Including Women's Voices in Research Video

The University of Birmingham have published a YouTube video featuring Professor Sara Kenyon (*ARC WM Maternity Services theme lead*) and Mashkura Begum (*Maternity Services theme Public Contributor*) sharing their experiences of including women's voices in research from start to finish. It is available to view at: https://youtu.be/HWIsvDw5_GA.

Latest National NIHR ARC Newsletters

The latest issues of the national NIHR ARC newsletter are now available online at http://eepurl.com/iqx8jI and http://eepurl.com/irRxqE.

These feature how to improve the management of 'high impact users' of A&E; supporting maternity services for parents with learning disabilities; how to help councils manage air quality; and four ways to improve end of life care for people with dementia.

To subscribe to future issues, please visit: https://tinyurl.com/ARCsnewsletter.

HSR UK Conference 2023

The 16th HSR UK Annual Conference will be held at the University of Birmingham and online on **4-6 July 2023**. The planned conference programme is now available showcasing the promotion of health services research in policy and practice.

Registration is still open for those who wish to attend.

For more information, please visit: https://t.co/9Wd6JP8Lri.

Congratulations

Congratulations to Dr Magdalena Skrybant, ARC West Midlands PPIE Lead, who was been short-listed in two of the categories for this year's *Birmingham Professional Awards*. Firstly, in the Collaborative Working category for facilitating high-quality collaboration between patients and academics, and secondly in the Local Recognition category for national engagement with NIHR colleagues.

ARC WM PPI Lunchtime Talks

The ARC WM Public and Patient Involvement (PPI) Lunchtime Talks series provides an informal space for collective learning around PPI in health and social care research. Sessions are online and consist of a 20 minute overview of a specific paper with personal reflections, and 30 minutes for group discussion, allowing the chance for attendees to share thoughts.

The Lunchtime Talks series is open to anyone who holds an interest in involvement of the public in health and social care research.

The next talk will take place on **Wednesday 19 July 2023, 13:00-13:50**. If you are interested in attending, please contact Niyah Campbell (N.Campbell@bham.ac.uk) or Magdalena Skrybant (M.T.Skrybant@bham.ac.uk).

NIHR Participation in Health and Care Research Milestone

It has been another successful year for participation in health and care research, with almost one million participants across England taking part in NIHR research in 2022/23.

Over 100 people in England were recruited every hour to take part - that's enough people to fill Wembley Stadium over 10 and a half times.

Read more at: https://www.nihr.ac.uk/news/number-of-people-taking-part-in-life-changing-research-reaches-almost-one-million/33788.

Clinical Academic Mentorship and Leadership Programme

The Clinical Research Network (CRN) West Midlands have launched a new Clinical Academic Mentorship and Leadership Programme for NHS staff in the West Midlands, which aims to prepare individuals to apply for a research internship programme, CRN personal development award or similar, or help them to identify the next step in their career development. The current focus is on healthcare professionals (excluding doctors and dentists) from ethnic minorities (or other protected characteristics), underrepresented professions in research, or those working in underrepresented settings.

Deadline for application is **20 July, 12pm**. For more information, and to apply, please click here. For any questions, please contact: clinicalacademics@uhb.nhs.uk.

Selected Publications

Ayorinde A, Esan OB, Buabeng R, Taylor B, Salway S. Ethnic inequities in maternal health. *BMJ*. 2023; **381**: p1040.

Burton C, Bajpai R, Mason KJ, Bailey J, Jordan KP, Mallen CD, Welsh VK. The impact of the COVID-19 pandemic on referrals to musculoskeletal services from primary care and subsequent incidence of inflammatory rheumatic musculoskeletal disease: an observational study. *Rheumatol Adv Pract*. 2023; 7(2): rkad044.

Byng R, Creanor S, Jones B, Hosking J, Plappert H, Bevan S, Britten N, Clark M, Davies L, Frost J, Gask L, Gibbons B, Gibson J, Hardy P, Hobson-Merrett C, Huxley P, Jeffery A, Marwaha S, Rawcliffe T, Reilly S, Richards D, Sayers R, Williams L, Pinfold V, Birchwood M. The effectiveness of a primary care-based collaborative care model to improve quality of life in people with severe mental illness: PARTNERS2 cluster randomised controlled trial. *Br J Psychiatry*. 2023; **222**(6): 246-56.

Choudhury S, Ilozumba O, Darlong J, Govindasamy K, Tsaku PA, Udo S, Shrestha D, Napit IB, Ugwu L, Meka A, Sartori J, Griffiths F, Lilford RJ. Investigating the sustainability of self-help programmes in the context of leprosy and the work of leprosy missions in Nigeria, Nepal and India: a qualitative study protocol. *BMJ Open*. 2023; **13**(5): e070604.

Gauly J, Court R, Currie G, Seers K, Clarke A, Metcalfe A, Wilson A, Hazell M, Grove AL. Advancing leadership in surgery: a realist review of interventions and strategies to promote evidence-based leadership in healthcare. *Implement Sci*. 2023; **18**(1): 15.

Gorman EA, Rynne J, Gardiner HJ, Rostron AJ, Bannard-Smith J, Bentley AM, Brealey D, Campbell C, Curley G, Clarke M, Dushianthan A, Hopkins P, Jackson C, Kefela K, Krasnodembskaya A, Laffey JG, McDowell C, McFarland M, McFerran J, McGuigan P, Perkins GD, Silversides J, Smythe J, Thompson J, Tunnicliffe WS, Welters ID, Amado-Rodríguez L, Albaiceta G, Williams B, Shankar-Hari M, McAuley DF, O'Kane CM. Repair of Acute Respiratory Distress Syndrome in COVID-19 by Stromal Cells (REALIST-COVID Trial): A Multicentre, Randomised, Controlled Trial. *Am J Respir Crit Care Med*. 2023.

McMullan C, Hughes SE, Aiyegbusi OL, Calvert M. Usability testing of an electronic patient-reported outcome system linked to an electronic chemotherapy prescribing and patient management system for patients with cancer. *Heliyon*. 2023; **9**(6): e16453.