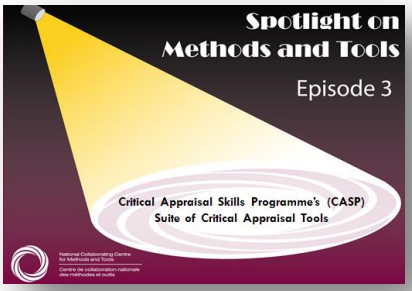
National Collaborating Centre for Methods and Tools

Centre de collaboration nationale des méthodes et outils

Using the Critical Appraisal Skills Programme

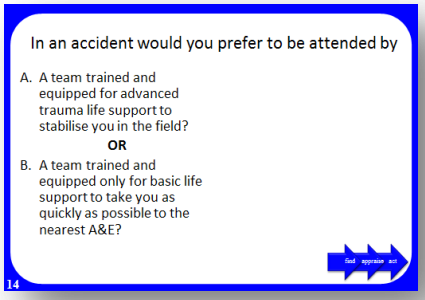
with Dr. Burls, Director of Post-Graduate Programmes in Evidence-Based Health Care in the Department of Primary Health Care at the University of Oxford

Introduction

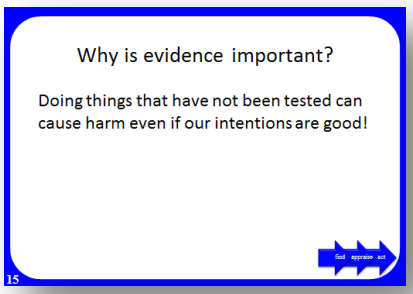


Welcome to the third edition of Spotlight on KT Methods & Tools from the National Collaborating Centre for Methods and Tools. Today's focus will be the Critical Appraisal Skills Programme (CASP), presented by Dr. Amanda Burls. In addition to being the Director of CASP, Dr. Burls is the Director of Post-Graduate Programmes in Evidence-Based Health Care in the Department of Primary Health Care at the University of Oxford. This presentation will touch on the importance of evidence in practice, the history CASP, the content of CASP workshops, and how CASP is growing in the world of evidence-based health care.

Why is Evidence Important?



Dr. Burls likes to use examples to illustrate the importance of evidence. Imagine you were in an accident and seriously injured. Would you prefer to be attended to by a team trained and equipped for advanced trauma life support (ATLS) to stabilize you in the field? Or a team trained and equipped only for basic life support (BLS) to take you as quickly as possible to the nearest emergency department? When polled, the majority of webinar attendees voted in favour of the Advanced Trauma Life Support team.



However, based on a systematic review by Liberman et al (2000) as well as studies published between the review and this webinar, the use of BLS teams was strongly supported by evidence over ATLS teams, particularly among studies whose methodological quality is rated as "Excellent." Overall, patients are almost three times more likely to die in the care of an ATLS compared to a BLS trained for transportation. Dr. Burls uses this point to stress that doing things that have not been tested can cause harm even if our intentions are good.

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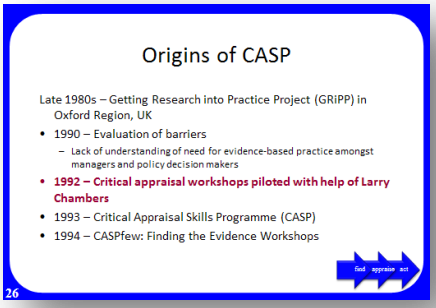
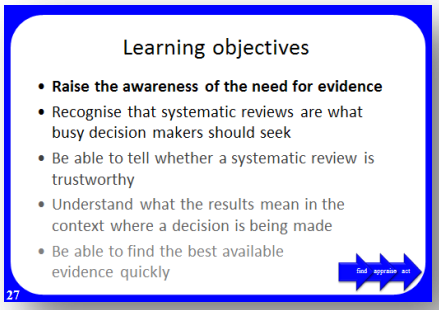
Establishment of CASP

The primary impetus for the Critical Assessment Skills Programme (CASP) was the Getting Research into Practice Project in the 1980s, which was a response to clinicians using interventions that were either contradicted or not supported by evidence. This project identified a lack of appreciation among managers and policy makers for the importance of using research evidence to inform decisions, which led to the development of educational workshops to address this need. These workshops soon developed into CASP.

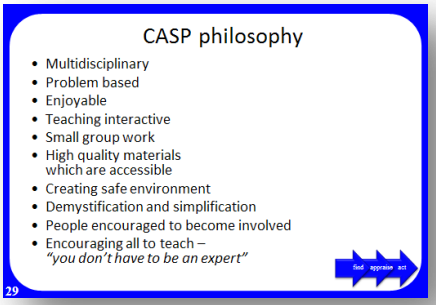


The CASP workshops were initially geared toward simply raising awareness of the need for evidence in practice. However, they have evolved to focus on the importance of systematic reviews in evidence-based practice, characteristics of a high-quality review, interpretation of results, and how to locate systematic reviews efficiently. The key theme participants walk away with is that systematic reviews are decision-makers' best resource for research evidence, and other forms of evidence should only be used in the absence of a high-quality systematic review.

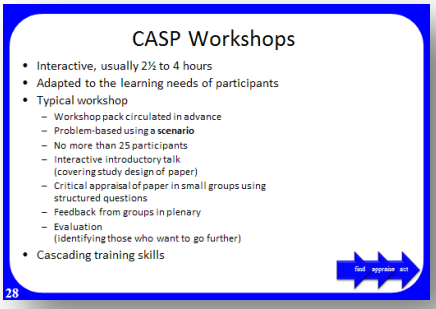


The CASP Workshops

The philosophy of CASP workshops is that they should be multidisciplinary, problem-based, enjoyable, interactive, and small group-oriented with high quality and accessible materials. The CASP team aims to provide a safe environment where people feel they can express themselves. Rather than train future epidemiologists, CASP works to give everyone the skills to make important decisions. CASP reinforces the lesson that, in evidence-based practice, it is expected that you build on the experience of others and admit uncertainty when you are unsure.



During each workshop, participants appraise a research paper with an accompanying CASP checklist. Workshops typically consist of fewer than 25 people and are a half-day in length. The small number of participants and short time frame help workshops be interactive rather than didactic, allowing participants to work in groups in a problem-based learning environment to appraise a paper together. In abstaining from lecture-style teaching in favour of small-group facilitation, Dr. Burls finds that CASP workshops allow participants to pool their understanding to form the same conclusions as would be taught in a lecture, but in a much more enjoyable and enduring learning experience.



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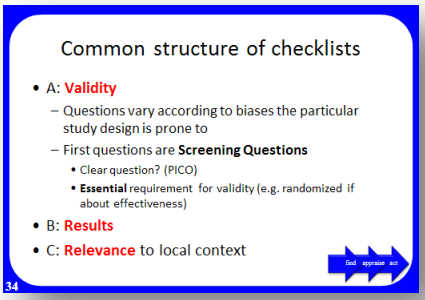
The CASP Checklist

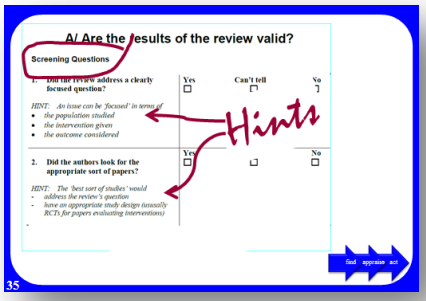
The central tenet of the CASP checklists is that they should be sufficiently accessible that they can be used without training. To ensure this, the structure is held consistent between all checklists. Each checklist asks three questions:

1. Are the results valid?
2. What are the results?
3. Are the results relevant to the local context?



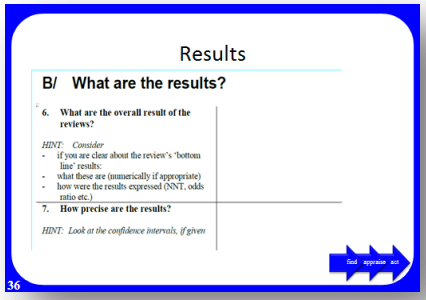
CASP Checklist: Validity

The validity questions of the checklist vary depending on what criteria are most relevant to a given study design, and what biases each study design is prone to. However, each set of validity questions involves certain screening questions to determine whether the study was clear in its focus, and whether the study meets the essential requirements for validity. Given the finite limit of available time in public health practice, the purpose of these questions is to show practitioners if a study is worth pursuing based on whether it earns a "Yes" for these questions.



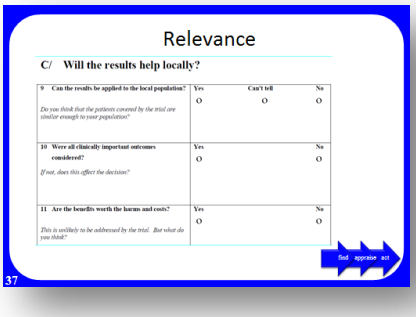
CASP Checklist: Results

In the results section, the checklist asks: What are the results? What is the absolute bottom line? Did the intervention work, or not? Dr. Burls expresses that often results are relayed in terms of relative risk, and this is not always helpful for conceptualizing outcomes. CASP encourages participants to express results in terms of absolute risk - such as number needed to treat - with the goal of understanding how precise the results are, and how much uncertainty there is around them.



CASP Checklist: Relevance

The third section of the checklist requires a critical understanding of your own context and the study results to assess external validity. This section asks whether the results of the study can be applied to the local population. Additionally, users are asked to consider whether all clinically important outcomes were considered, as many internally valid studies may neglect to report on relevant and important outcomes. Finally, the checklist asks whether the benefits outweigh the harms and costs, which is an essential consideration in public health.



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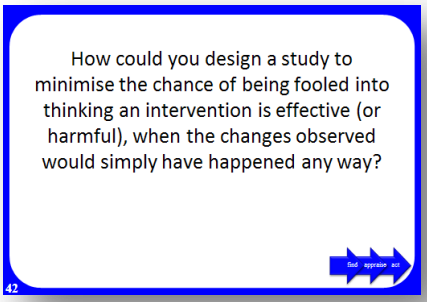
Learning about Randomized Controlled Trials

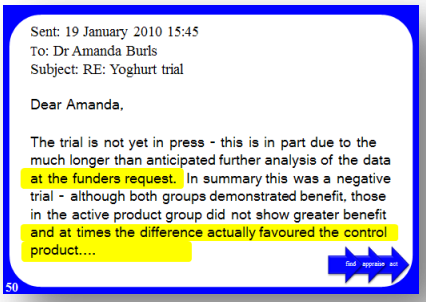
Part of helping participants appraise research includes developing an understanding of what qualities lead to high-quality research. In order to do this CASP facilitators start with a question, such as "Do 'friendly bacteria' help problem tummies?" From here, participants design a hypothetical study to answer this question. The typical starting point is to apply a hypothetical intervention to a population and observe an outcome. From here, facilitators help to refine the idea by suggesting, "Let's imagine we apply the intervention and we see results. Is there any other reason why they might see results that was not due to the intervention?"

In practicing critical thinking around research design, participants respond to this question by refining their research design. Ultimately, facilitators pose the question, "How could you design a study to minimize the chance of being fooled into thinking an intervention is effective (or harmful), when the changes observed would simply have happened anyway?" Invariably, participants eventually arrive at the concept of a double-blind, placebo controlled, randomized trial. This process gives participants an appreciation of the importance of methodological rigour.

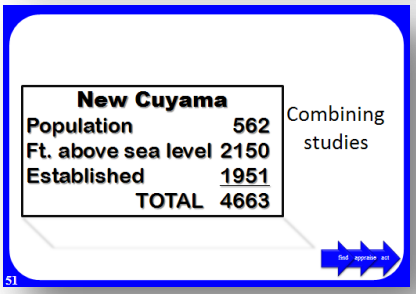


Learning about Systematic Reviews

CASP facilitators take a similar approach to discuss the rigour of systematic reviews. In returning to the example of probiotic yogurt, Dr. Burls recounts her experience as a participant in a trial involving probiotic yogurt. In this study, the publication of negative results was delayed at the request of Danone™, who funded the research. Through this and other examples, participants rapidly develop an understanding of the concept of publication bias.



Participants often struggle with what is meant by heterogeneity as it relates to whether it is appropriate to combine results. Facilitators use the slide to the right to illustrate the point that when combining results, it needs to be logical to do so. Through the use of humour and tangible examples, CASP makes concepts of evidence-based practice both memorable and accessible to participants, and in doing so improves their comfort and skill with using evidence to inform decision making.



CASP International Network

In addition to providing training for critical appraisal, CASP also offers participants the opportunity to become CASP facilitators as well. What began as a capacity-building initiative on the local scale has grown to an international presence for CASP. Requests from countries such as Spain, Norway, and the UK facilitated the creation of the CASP International Network, which provides annual training for volunteers and allows CASP to continue to educate practitioners around the globe. Currently, CASP

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runs workshops to help organizations prepare their own training in future. Additionally, CASP now offers online modules about critical appraisal and finding evidence that guide health care professionals through appraisals at their own pace.