Introduction to Systematic reviews and evidence syntheses - Video 2: Scoping search and Protocol - transcript

We ended the last video with you thinking about whether you had a research question that was suitable for a systematic review process. We'll now take that on a little bit more and look at question formulation techniques.

These tools you might be familiar with PICO, PICOS, PECO and SPIDER. They're often used to help formulate the search question, but also break it down into searchable components.

If you're not familiar with these techniques. PICO was developed originally for effectiveness questions. It's helping you to think what is the Population, Patient group, Participant group or Problem that you're interested in. Then, what intervention are you going to look at? Is there a control intervention? And what outcome or outcomes are you interested in?

PICOS develop this a little bit more and added the concept of study type. If you have an intervention question, what kind of study might best address that issue?

PECO with an E was developed for a prognostic or risk type questions where we're not looking at an intervention, but we're looking at an exposure.

SPIDER is often used where we're looking at experiences or qualitative research in particular. You have a sample, a phenomenon of interest. You're looking at what design and evaluation you're going to conduct and what research type might address that question.

I'm going to take through the example using an intervention question.

Is taxation effective in reducing the purchasing and consumption of sugar sweetened beverages amongst children?

I'm going to cut it down in terms of my population, my intervention, my control and my outcome. The population of interest is children who drink sugar sweetened beverages. My intervention is taxation. I haven't got an exact control here, but it

could be other health behaviour techniques to reduce consumption. It could be incentivising reduction. It could be any type of comparison. I'm leaving it open. My outcome is reduction in either purchasing of sugar sweetened beverages or the consumption thereof.

In terms of my search, I could search on each aspect. But there are going to be key concepts within my PICO that are going to be relevant.

I'm going to look at children and we might think about what age group will cover. That will influence the search terms that we choose, because children could be anywhere between 0 to 18 years. Could be infants, toddlers, school age children or adolescents.

We're then going to think about sugar sweetened beverages as a key concept within our search.

We look at our intervention, which is taxation. We've got keywords around purchasing and consumption that need to be incorporated within our search.

First thing we will do is a scoping search. One is to identify whether there are any existing reviews or review protocols that address our question, because we wouldn't want to be duplicating work if there is a good quality systematic review out there or one in process. Also, the scoping search will help inform the developments of our final structured search. It will help us with identifying key words and subject headings.

An example of a quick search is given here. Just sugar sweetened beverages, taxes, children, purchase or consumption. We're first of all, going to identify existing reviews, so PROSPERO is a key database of ongoing reviews and it's maintained by the CRD in York - you'll see a link to it in the accompanying material. We might want to look for published reviews, I would suggest a quick search of PubMed, and using the limits for systematic reviews is a good way of getting an initial feel for that. We also need to remember that not all systematic reviews will be published in journals. Reviews developed by regional or national health care access organisations might

be published on their web-sites and TRIPdatabase and NICE evidence search are good search engines for finding those types of reviews.

What I'm going to do now is just do that quick scoping search on PubMed. I have a phrase, I'm going to enclose it in " ". My second concept is **children**, you'll see that I'm just typing the key words in, and the reason for that is that PubMed has an implied AND so it will be searching for "**sugar sweetened beverages**" AND **taxation** AND **children**. But I want to add two different concepts of purchasing or consumption. I'm going to add the Boolean OR to combine these 2 concepts. I'm enclosing that in (), so the search we'll be doing will be (**sugar sweetened beverages** AND taxation AND **children** AND **purchasing**) OR (**sugar sweetened beverages** AND **taxation** AND **children** AND **consumption**). If I didn't have that double brackets there, it would confuse how the search is conducted.

I click on Search. I can then see the results, I can click on the systematic reviews in the filters from the left hand side. I want to double check whether there is a systematic review that just looks at children. Some of these reviews would be really quite useful for us later on, if we decide to proceed with our systematic reviews. It will give us suggestions about search strategies, databases that we might want to use. From the titles of these systematic reviews, I can't see one that just concentrates on children. Obviously, if I was you, I would pay a little bit more attention and go in and look at the abstract. But at this stage, I'm quite happy that there isn't one that directly addresses my question.

I would probably repeat the search on TRIP or NICEEvidence Search. I would also look at PROSPERO.

I did mention about having a look at search keywords, so if we think, well, this is quite a useful review, I can click on the title. I can have a look at what key words might be within. It highlights some of the useful keywords that it's used to search. We can see that I typed in taxation, but also it searched for taxes. I can see sugar added foods, so sugar added beverages might be quite useful. Consumption is in there. I might want to add things like reduction in weight if I was interested in additional outcomes. So again, this scoping search can also influence what our outcomes might be and what our question is, because we might change the question based on

what our initial scoping search retrieves. It gives us suggestions of which databases might be useful for us to look at, some are named here in the abstract, but I'd need to look at the full-text to see a full list of databases and trial registers that I might want to look at.

This review would also be a good source of studies if I wanted to look at the reference list of this review, because they've included both child populations and adult population. It may be a very good review to look at in more detail.

If I was going to use the search strategies from this review or use some of the studies, then I would be sure to cite it in my publication that I have used as part of the search process.

Once I've identified that there's a need to pursue my own systematic review, then this is the point at which I think about my protocol. We mentioned protocols before, so we would think about developing our protocol for different reasons. It will help with further developing my search when I start to think about what my true question is, what the inclusion exclusion criteria are. It also helps you to identify what you need to do at each stage of the process of a systematic review. It will give you a reality check about how long this process might take. It will also introduce concepts that you might not have full knowledge of.

You may not previously have done any meta analysis. You may not be used to doing risk bias assessments. That will help you identify who else you need to bring into this systematic review process, because generally a well conducted, systematic review is run by a team of people. You would bring in people with subject knowledge, you would bring in a librarian to help with the search. You might bring in a statistician to help you with a meta-analysis, a qualitative researcher if you are doing a thematic analysis. It helps you identify the steps that need to be undertaken, but also people that would be able to help you with that process. And once you have a protocol and you have published it, it will make the publication of your finalised review much easier because many journals do require a protocol before they will publish the final review.

It's worth looking at PRISMA-P via the Equator network. Again, links to this are in the additional material so that you can identify all the steps needed to report as part of the protocol.

Once you have a draft protocol, then you can then start thinking about the search in greater detail. And that's what we will go onto in our next video.