HPAC COURSE · MODULE 3

Evidence

How to stop reading about studies and start reading the studies themselves.

Health Professions Affinity Community · Student research track

WHERE WE ARE GOING

By the end of this module you can...

Explain evidence-based practice	What it means, what it does not mean, and why anyone should care.
Rank the kinds of evidence	Why a case report and a systematic review are not the same claim.
Work Google Scholar	Search it, filter it, and use cited by and related articles to find the rest of the conversation.
Get the full text legally	Free and legal routes to the paper, including asking the author.
Build an evidence table	Turn what you read into something your team can actually use on a poster.

THE IDEA

What evidence-based actually means

A decision is evidence-based when it rests on the best available research, the judgment of experienced practitioners, and what the people affected actually want.

Best available research

Best available, not perfect. Sometimes the strongest evidence on a question is three small studies, and you say so out loud rather than pretending it is more.

Practitioner judgment

The nurse who has run a hundred clinics knows things no study measured. Evidence informs judgment, it does not replace it.

Community values

An intervention that works and that nobody in your neighborhood will accept is not a working intervention. This is the leg students most often forget.

Evidence-based does not mean somebody said it confidently, and it does not mean it was on the news. It means you can point at what it rests on.

THE EVIDENCE HIERARCHY

Not all studies carry the same weight



Gathers every study on a question and weighs them together. The strongest single thing you can cite.

People assigned by chance to get the thing or not. The design that can support the word caused.

Follows groups over time, or looks backward. Can show strong patterns. Cannot prove cause by itself.

A snapshot of a population at one moment. Great for how common, weak for why.

One patient, or one experienced person's view. Useful for raising a question, not for settling one.

Use the strongest evidence you can find, and say in your poster what kind it was.

HOW A PAPER BECOMES A PAPER

Peer review, in plain language

1

Submit

Researchers send the manuscript to a journal.

2

Editor screens

Most are rejected here, before anyone reviews them.

3

Experts review

Two or three researchers in the same field try to find the holes.

4

Revise

Authors answer every criticism, often for months.

5

Publish

Or reject, and the authors start again somewhere else.

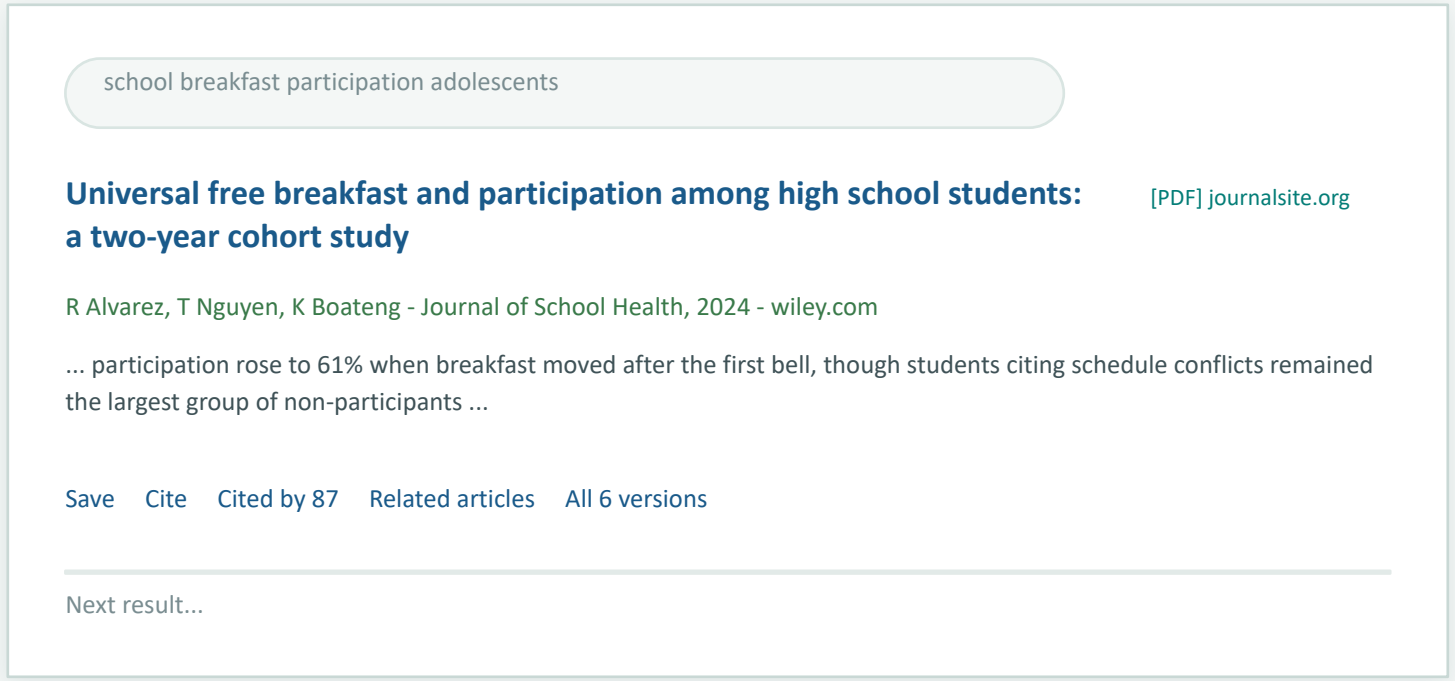
What it does and does not guarantee

It means qualified people looked for problems before publication. That is real and it matters.

It does not mean the finding is true, that it applies to your community, or that nobody has since disproved it.

SCHOLAR.GOOGLE.COM

A tour of one Google Scholar result



Cite is the quotation mark icon on the real page. It hands you APA, MLA, and Chicago, and it is right most of the time. Check it against Purdue OWL before it goes on the poster.

1. **Title in blue**

   Click it. Sometimes it goes to a paywall, which is not the end of the road.

2. **Authors, journal, year**

   Your citation lives here. Note the year before you get attached to the finding.

3. **[PDF] on the right**

   A free full-text copy Scholar found somewhere. Check this first, always.

4. **Cited by 87**

   Eighty-seven later papers cite this one. Click it to see what the field said next.

5. **Related articles**

   The fastest way to find the rest of the conversation on your question.

SEARCHING LIKE A RESEARCHER

Six moves inside Scholar

Quote the phrase

`"food insecurity" "high school"`

Keeps the words together instead of scattered across the paper.

author:

`author:"porfeli"`

Find everything one researcher has written. Useful once you know the names in your field.

source:

`source:"journal of school health"`

Search inside one journal.

Since 2020

`Left sidebar, custom range`

Health evidence moves. Start recent, then follow citations backward.

Cited by

`The forward trail`

Who built on this since? This is how you catch the study that overturned it.

Review articles

`Left sidebar checkbox`

Filters to reviews. The fastest way to learn a whole literature at once.

Start with a review article, mine its reference list, then use cited by to come forward to today.

PAYWALLS

Getting the paper without paying for it

1

The [PDF] link

Scholar posts it right on the result when a free copy exists anywhere.

2

PubMed Central

Federally funded research must be posted free. Search the title at pmc.ncbi.nlm.nih.gov.

3

Your school or public library

Librarians can request almost any article through interlibrary loan, usually within days, at no cost to you.

4

Email the author

Researchers are allowed to share their own work and are usually delighted to. Two sentences is enough.



The email that works

Subject: Request for a copy of your paper. Body: your name, your school, the title of the paper, one sentence about your project, and a thank you. Send it from your school address.

Do not use pirate sites. They are illegal, they get schools in trouble, and everything above is faster than you think.

Abstracts are free for everything. If you cannot get the full text in time, cite the abstract and say that is what you read.

YOU DO NOT READ IT FRONT TO BACK

Reading a paper in fifteen minutes

1 Abstract

The whole paper in 250 words. Decide here whether to keep going.

2 Figures and tables

The findings live here. Read the captions carefully.

3 Methods, just the sample

Who, how many, over how long. Skip the statistics section on the first pass.

4 Limitations

Near the end of the discussion. The authors tell you what their study cannot show. Believe them.

5 Discussion

What they think it means, and how it fits with everything else.

6 References

Your next five sources are in this list.

You are allowed not to understand the statistics

Nobody expects a high school student to evaluate a regression model. You are expected to know who was studied, what was compared, what was found, and what the authors admit they cannot say.

JUDGING WHAT YOU READ

Six questions to ask of any study

Who was in it?

Age, place, and health status. A study of adults in Finland may not describe teenagers in Cleveland.

How many?

Small studies find things that turn out not to be there. Note the number.

Compared to what?

No comparison group means the finding is a description, not a test.

How long?

Six weeks tells you about six weeks. Behavior change often fades after that.

Who funded it?

Disclosed near the end. Industry funding is not disqualifying, it is a reason to read the methods twice.

Has anyone repeated it?

Use cited by. A finding nobody has reproduced is a lead, not a fact.

Write your answers as you read. Six weeks later you will not remember, and your poster needs the details.

ONE MORE TRAP

Journals that are not really journals

What a predatory journal does

- Charges researchers a fee to publish and reviews almost nothing
- Emails invitations that flatter you and mention a deadline
- Uses a name nearly identical to a respected journal
- Promises publication in days, when real review takes months
- Lists an editorial board that cannot be verified, or that never agreed to serve

How to check before you cite

- Search the journal name plus the word predatory
- Look it up in the Directory of Open Access Journals
- Check whether it is indexed in PubMed
- See whether the authors are at institutions you can find
- Ask a librarian. This is exactly what they are for

Open access is not the problem

Many excellent journals are free to read and free to publish in. The problem is a journal that skips review entirely and sells the appearance of one.

FROM ARTICLES TO A POSTER

Turn your reading into an evidence table

Citation	Who was studied	What they did	What they found	Why it matters to us
Alvarez et al., 2024, J School Health	1,200 high school students, 4 districts	Compared breakfast before vs after first bell	Participation rose from 38% to 61%	Our school serves before the bell. This is testable here.
Your next source				
Your next source				

Why this beats a pile of PDFs

One page shows your whole team what is known, where the gaps are, and which finding your project is actually building on.

The last column is the one that matters. If you cannot write it, that source does not belong in your project.

This table becomes your background section, your reference list, and half your poster conversation.

WRITING IT UP

Saying what the evidence actually supports

Overclaiming

- Breakfast programs eliminate hunger in schools
- Studies prove that later start times fix teen sleep
- Everyone agrees vaping causes depression
- Our survey shows that students in Cleveland want this

Defensible

- In four districts, moving breakfast after the bell raised participation
- Two studies found later start times were associated with more sleep
- Current evidence links vaping and depressive symptoms; direction is unclear
- Among the 84 students we surveyed at our school, most said this

Judges and reviewers trust the student who says what their evidence cannot show. Hedging honestly is a sign of strength, not weakness.

THIS WEEK

Three papers and one table

Find

Three papers on your question in Google Scholar, at least one from the last three years

Get

The full text of all three, using the free routes

Read

Fifteen minutes each, in the order we practiced

Table

One evidence table, five columns, filled in

Where to go

- scholar.google.com · set your library in Settings so full-text links appear
- pubmed.ncbi.nlm.nih.gov · pmc.ncbi.nlm.nih.gov for free full text
- Your school librarian, for anything behind a paywall

Next module

Collecting your own data: surveys, focus groups, and what you can and cannot learn from social media.