



What Research can I Rely on for Practice?

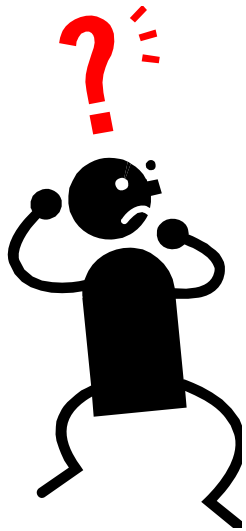
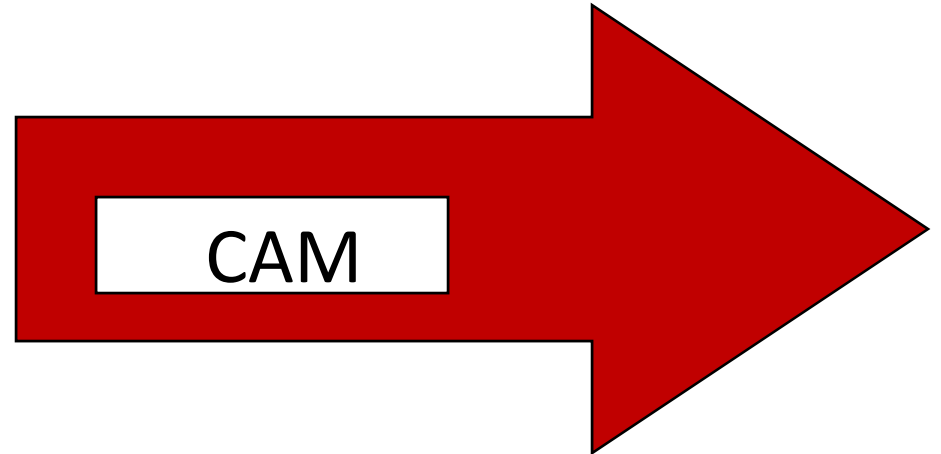
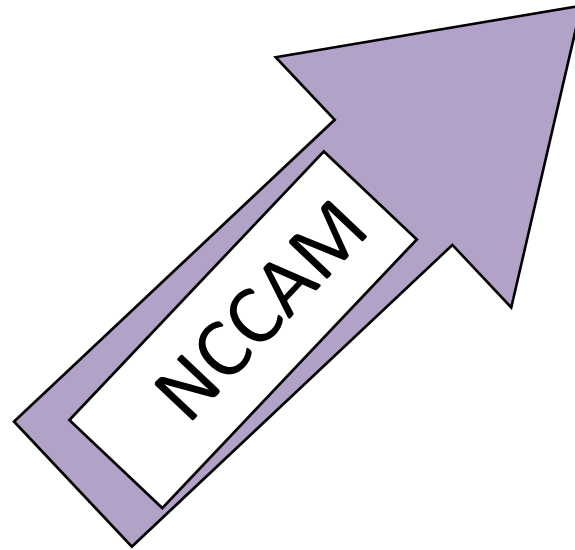
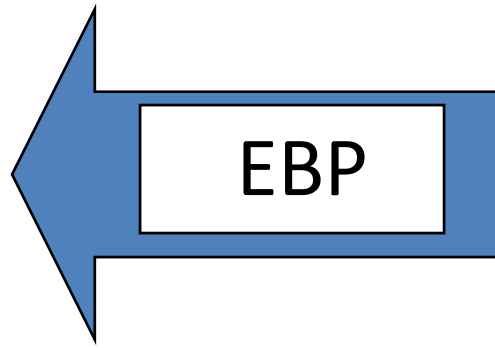
Step-by-step Strategies for Determining the
Trustworthiness of Research and its Sources

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INTRODUCTION

- Why don't more clinicians use evidence in their practice?
- Different philosophies about health can cause confusion particularly from the apparent conflict between evidence-based practice and alternative health practices.
- Evidence-based practice (EBP) is grounded in the positivist philosophy and has been linked to better health outcomes that are also more cost effective.(Fineout-Overholt, 2005)
- Users of complementary and alternative medicines (CAM) are split between those that embrace the EPB approach (NCCAM) and those who emphasize subjective wellness dismissing objective evidence (Jagtengerg et al., 2006)
- Those often diverging perspectives and their research implications will be woven throughout my presentation.



OUTLINE

- Definitions
- Current Controversy: Critique of mainstream and CAM
- Practice Case Illustration
- 7-step approach to finding and evaluating evidence. For each step, will first provide
 - Description and/or rationale for approach
 - Practical illustration if applicable
 - Controversies and issues relevant to that approach
- For time purposes, will not be exhaustive, but have provided, at the end, an appendix with annotated resources
- Bibliography is available in separate file

Definitions

- Evidence-Based Practice: “problem-solving approach to clinical care that incorporates the conscientious use of current best evidence from well-designed studies, a clinician’s expertise, and patient values and preferences” (Fineout-Overholt et al, 2005).
 - Promoted to insure quality and cost-effective health care services (Chronister et al, 2008).
- CAM is the acronym for complementary and alternative medicine and consists of “a group of diverse medical and health care systems, practices and products that are not considered to be part of conventional biomedical practice but are used in conjunction with (complementary) or instead of (alternative) biomedical interventions” (Verhoef et al. 2007)
 - Those approaches are used by an increasing number of people and include chiropractic, acupuncture, massage therapy, herbal medicine, homeopathy, and massage therapy

Some Aspects of Current Controversy

- Critique of CAM medicine by mainstream proponents:
 - Many CAM approaches have received weak or no experimental support (i.e. Derry et al, 2006, Ernst, 2008)
 - When there is experimental support (i.e. Ramassamy , 2006, for Gingko) CAM practices become mainstream
 - Cost effectiveness of CAM has not been supported by evidence (i.e. Canter et al. 2006).
 - Use of EBP has resulted in great improvement of effectiveness of care (Fineout-Overholt et al. 2005) so need to promote more widespread use of EBP (i.e. Melynk et al 2004)
 - Distrust of commercial motives of CAM products and services
- Critique of “mainstream” medicine by CAM proponents.
 - Mainstream practice often ineffective with chronic ailments
 - Patient not allowed to be in control of their own health
 - Distrust of commercial motives of pharmaceutical companies and cost-saving motives of managed care (Goff et al., 2008; Verhoef et al, 2007)

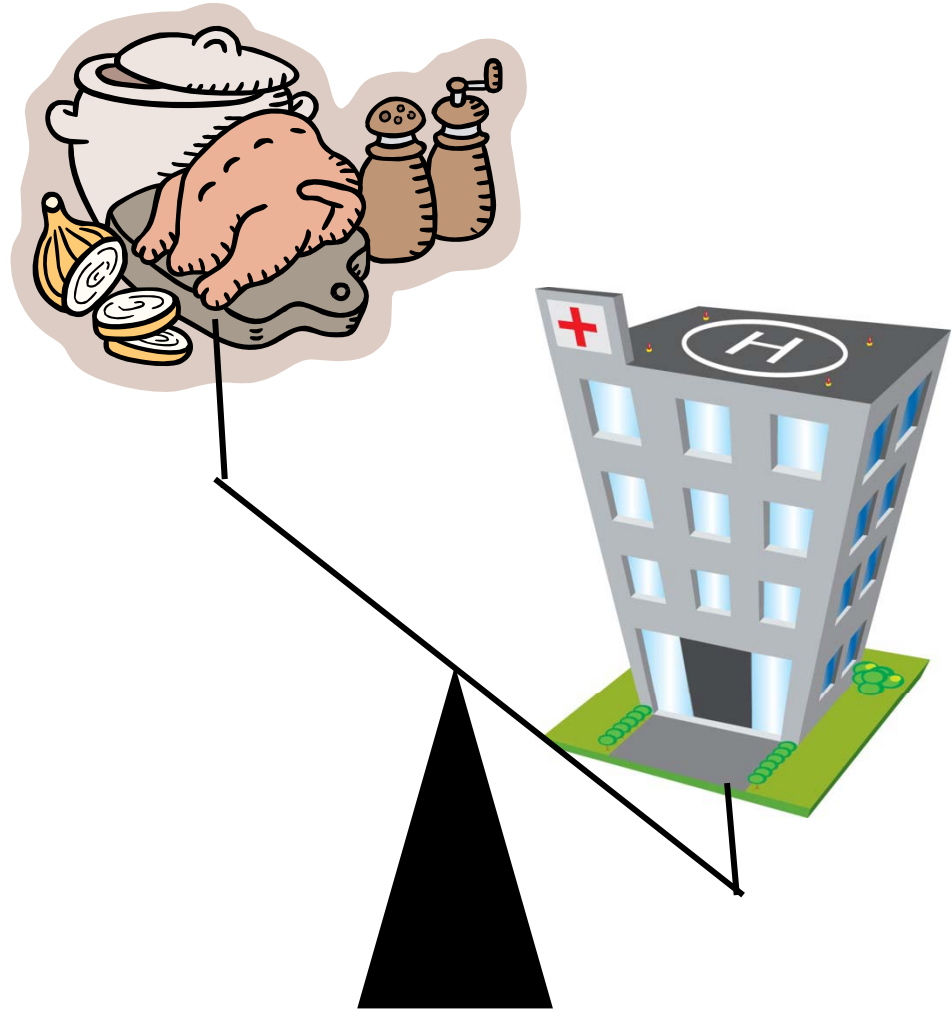
Practice Illustration: The case

- Grant-funded interdisciplinary wellness program for low income seniors in a multi-ethnic neighborhood (collaborator with Jyothi Gupta)
- Curriculum model: Occupational science-based, RCT evidence-based , cost effective preventive occupational therapy (Clark et al. 1997, Hays et al, 2002).
- Living Well curriculum: Included identification of occupational interests, barriers to participation, strategies to overcome barriers, health promoting routines and habits for nutrition and physical activity, environmental evaluation and modification (fall prevention) and stress management.
- Implementation model. Participatory action research approach, with part of curriculum open to participant-generated content.



STEP 1

Consider introspecting on your values and beliefs about science, health, disease and its causes, as well as about the role people play in their own healing.



Step 1

- Some introspection questions:
 - Best cure when ill: head for the chicken soup or hospital first?
 - Beliefs about the cause of illness
 - Degree of trust in science vs. emotions for health
 - Degree of inclusion of patient in own healing
- Negative attitudes towards research is one reason for limited use of evidence in practice (Fineout-Overholdt 2005).
- Other barriers include problems understanding the research and knowing how to critique studies (Melnik et al, 2004).
- Those providers who believed that evidence-based practice would result in better outcomes for patients were more likely to use evidence in their practice (Melnik et al, 2004).
- This suggests that positive attitude towards science can help overcome the other barriers to evidence-based practice

Step 1(cont.)

- Attitudes and beliefs will also be reflected in the way the therapist will involve patient in the evaluation of the evidence.
- Three major influences that are transforming the landscape of medical care:
 - Advent of the internet (Cross, 2008)
 - Exposure to other cultures and their health and healing practices (LaRoche & Christopher, 2008).
 - Aging baby boomers used to be in control of their own health
- This has resulted in interest by clients to be partners with their providers in the discovery of the most effective therapy and the need take into account each others' world-view in the evaluation and use of the evidence.

Practice Illustration Step 1

- We did believe in the scientific approach and based our group on a model that was supported by evidence
- Our approach was not always consistent with participants
 - Most group members, were eager to obtain more information and did demonstrate a belief their ability to influence the course of their own health
 - However many of them were using herbs and alternative medical practices, based on tradition or belief rather than scientific evidence of their efficacy
 - One had cancer and chose prayer over conventional medicine
- Our participants didn't have access to the internet so they depended on us to provide that information to them. In this situation, the digital divide was a limitation to our attempts to empower the participants into their own health care.

Controversies Step 1

- Scientific approach as help versus hindrance to relationship between health provider and client.
 - Tickle-Degnen (2002) among others has emphasized the fact that evidence-based practice will enhance the patient-provider relation
 - Many health care providers resent the push for EBP and believe that it does not value their therapeutic relationship (Fineout-Overhold et al., 2005).
- Trust in safety of mainstream care vs. of CAM
 - May choose not to comply with prescription of medication due to fear of well publicized adverse events (i.e. Goff et al, 2008)
 - May trust CAM out of a belief that it is safer. However there also is evidence for adverse medical events following CAM use (i.e. Ernst, 2007 about some chiropractic practices).
 - How deal with evidence that some alternative medicine use can result in deterioration of health to a stage where conventional medicine cannot help? (Sanderson et al, 2006).

STEP 2

Consider developing your practice questions with your patient, and determine the type of evidence that those questions warrant.



Step 2

- Questions determine evidence type needed (Tickle-Degnen, 2000)
- Effectiveness question: Requires the need to look for evidence that establishes a causal relation which is also called “outcome research”.
 - Outcome research is almost always quantitative (use of numbers and statistics). To reduce bias, need well designed (= rigorous) studies
 - Randomized controlled trials (RCT) are recognized as the most rigorous. Involve random assignment into a treatment group and a control group
- Assessment issues: Requires evaluation research, where you will determine trustworthiness of tools used to evaluate patient:
 - Validity of tool: its accuracy in measuring what you want it to measure
 - Reliability of tool: its consistency (i.e. across settings)
- Understanding-type questions require the type of research that is descriptive,
 - Quantitative descriptive (involving numbers)
 - Qualitative descriptive involving the analysis of observational, verbal or written information

Practical Illustration Step 2

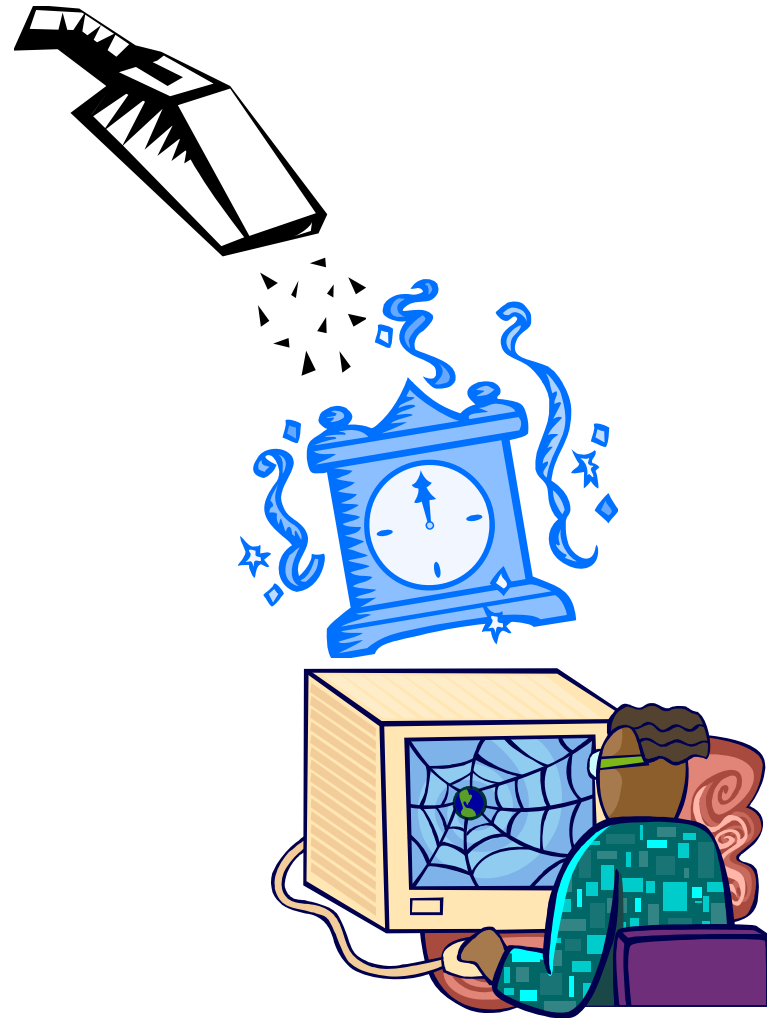
- Examples of patient-generated questions
 - One participant wanted us to do TaiChi as she has heard that it helped falls (effectiveness question)
 - Several did take herbs. One went to acupuncturist instead of regular doctor for her ailments (effectiveness questions)
- Example of therapist-generated questions
 - Observed balance problems in a few participants . This led us to research which balance assessment tool was the most valid and reliable to predict fall risk for that population of community seniors (assessment question)
 - Interested in the meaning and importance of volunteering in that population to determine what to focus on in our session on that topic. Looking for descriptive evidence both quantitative and qualitative (information question)

Controversies Step 2

- There is disagreement about what constitutes “best evidence” for evaluating treatment outcome (i.e. Chronister et al, 2008).
 - At one end, the current EBP approach places the most trust on systematic reviews of Randomized Controlled Trials (RTC). (i.e. Canter, Coon and Ernst, 2006).
 - Many proponents of CAM have also supported the need for more RCT to support the benefits of those therapies (i.e. NCCAM)
 - Some advocate the incorporation of qualitative studies in the evaluation of research outcomes to capture the complexity of the determinants of health (i.e. McGuire, 2005, Thomas et al. 2008)
 - At the other end are proponents of testimonies by clients as sufficient outcomes, dismissing the need for objective data (i.e. Jagtenberg et al, 2006)

Step 3

If using the web as source of health information, consider using a hierarchical approach to your search and ground it in science



Step 3

- Internet widely used source of health information for both health care provide and patients. (Sillence et al. 2007) Advantages include:
 - Allows practitioners to keep current with the latest findings in health care
 - Facilitates greater responsibility for own health care in patients.
- Dangers include:
 - Overwhelmed by contradictory health information
 - Trust web information and fall victim to fraud
 - Quality of information about a health condition inversely proportional to quantity (Lorence& Abraham)

Net surfing and grounding in science

- Contradictory health research findings on the internet may seem confusing
 - Example: Ioannidis (2005) study found that 42% of big clinical studies were later contradicted, at least in part
 - This can lead people to give up evidence-based practice and trust instead instinct, traditions or beliefs
- Need to understand that science is a process
 - Theories and models have to be formulated in a way that allows them to be disproven (beliefs can't be disproven)
 - Quality of research matters: 83% of non randomized trials vs. only 23% RCT contradicted by subsequent research
 - Preponderance of the evidence matters (Ioannidis, 2005)

Step 3 (cont)

- Web information is often more current than print but quality of information varies widely
- General search engines such as Google will often yield a large quantity of unreliable sources . Can be used to identify current issues (Pan, 2008) and possible keywords
- To more efficiently access reliable sources look for trusted “gateway” sites. Government sites (.GOV) are generally reliable “gateways”, so are many organizational sites (.ORG)
- Example:AARP portal to internet resources on aging <http://www.aarp.org/internetresources/> Screens out sites determined biased. (see Appendix for other examples)

Practice Illustration Step 3

- A member of the group suffering from arthritis did take ginger for her ailment. I worried about drug interaction.
- I searched for effectiveness of ginger supplements using first Google with keywords “Ginger supplements benefits”, which led to 99’000 hits.
- Looked at the first 10 hits which were all commercial sites (.com or .net) extolling ginger’s healing benefits
- Then tried the direct portal method through NIH’s NCCAM (.gov site). I searched google with keywords: “NCCAM ginger” and arrived at <http://nccam.nih.gov/health/ginger/#science>
- Information at NCCAM was detailed and helpful but only provided incomplete references for primary sources.

- The only non-book reference it provided was “Ginger. Natural Medicines Comprehensive Database Web site”
- I searched it on google and found the link [http://www.naturaldatabase.com/\(S\(n2iz1j45mhfja5zxbf01c345\)\)/home.aspx?cs=&s=ND](http://www.naturaldatabase.com/(S(n2iz1j45mhfja5zxbf01c345))/home.aspx?cs=&s=ND) which is a .com site
- When I searched for effectiveness of ginger in that site, I was asked to pay a fee (\$9.97) to get that information. Example given of other report (on Ginkgo) looked comprehensive but fee was barrier to obtaining the primary evidence sources that NCCAM alluded to.
- Based on the preliminary information from NCCAM I told the health program participant that using ginger was probably not harmful but that there was no solid proof that it was going to be helpful.

Controversies Step 3

- Controversy 1: Ethics of having government site (NIH) link to .com site instead of primary sources?
- Controversy 2: How common is a hierarchical approach in health consumers' approach to web information?
 - Some argue that most people use the time-consuming general approach, and trust most web information (Lorence and Abraham, 2008)
 - Others found that people do naturally use a hierarchical approach but sometimes wrongly reject sites with the most reliable information when not easy to navigate (i.e. Silence et al. 2007)

Step 4

Know how to
best evaluate
websites

A +



Step 4

- Guidelines on how to evaluate websites, often available in libraries. i.e. see excellent tutorial at the Widener University Library
[http://www3.widener.edu/Academics/Libraries/Wolfram Memorial Library/Evaluate Web Pages/659/](http://www3.widener.edu/Academics/Libraries/Wolfram_Memorial_Library/Evaluate_Web_Pages/659/)
- Tool to help recognize the trustworthiness of health information websites: *Health on the Net Foundation's* HON code: International code of conduct for medical and health websites. Websites meeting criteria can post a seal (Lorence & Abraham, 2008).
<http://www.hon.ch/HONcode/Conduct.html>
- For example Mayoclinic.com site has HONcode but Natural medicine .com site shown previously does not

Step 4(cont)

- Process below compiled from a variety of sources (Lorence & Abraham, 2008; CSC library, NCCAM)
- **Who runs the site?** Is author clearly visible on the site? Is the credibility of the author organization or individual recognized by experts and peers ? Is contact information other than e-mail provided? (Can use google to look up credibility of site author if not available on the site).
- **Who pays for the site and what is its purpose?**
 - The suffix of “.com” or “.net” could mean that the content may be biased by commercial purpose. So look for HON code or evaluate site carefully
 - Librarians also recommend determining if the site has an agenda or philosophy that it is trying to promote.

Step 4 (cont)

- **Where does the information come from and what is the basis for the information?**
 - References for the sources of evidence should be included, and opinions separated from research facts.
 - Many recommend that sources of health information used by website be primary sources, peer reviewed and originating from a variety of journals.
- **How is the information selected?**
 - Is there an editorial board and advisory board, and do members have proper expertise in the content area? Research expertise and/or association with a reputable educational or research institution is better indicator than Ph.D. or MD credentials alone

- **How current is the information?**
 - Websites should be updated on a regular basis and the time of the update should be posted.
- **How does site choose links to other sites?**
 - Some sites do chose to link to sites only if meet standards, others link to sites that pay for links.
 - Some link to sites that first look like other organizations to legitimize their content, but actually are part of the same umbrella organization.
 - www.alex.com and the content of Blogs are some ways to help evaluate the site and the linked sites.

Practice illustration step 4

- Same search as before about ginger, but purposely looked at commercial sites:
<http://www.Mayoclinic.com> Has HONcode and meets criteria for reliable site.
- Searched there for “herbal supplements” and found under “how they can interfere with surgery” that ginger can cause bleeding.
<http://www.mayoclinic.com/health/herbal-supplements/SA00040>
- Naturaldatabase.com does not have HONcode and does not meet several outlined criteria.
<http://www.naturaldatabase.com>

Controversy Step 4

- To what extent should “agenda” be a factor in evaluating websites and if so, how practical is it?
- HONcode ‘s transparency criterion does not include evaluating “agenda” or editorial review process, while other guidelines of website evaluations do
- I.e. <http://www.quackwatch.org> has HONcode label but the site has a disclosed agenda: Use scientific evidence to debunk false health claims, mainly by alternative and complementary medicine (Dr. Barrett).
- It could be argued that many websites have a specific purpose and thereby are “biased” against the other purposes. If meet other criteria, is it acceptable?

Step 5
Know how
to
evaluate
print
sources



Step 5

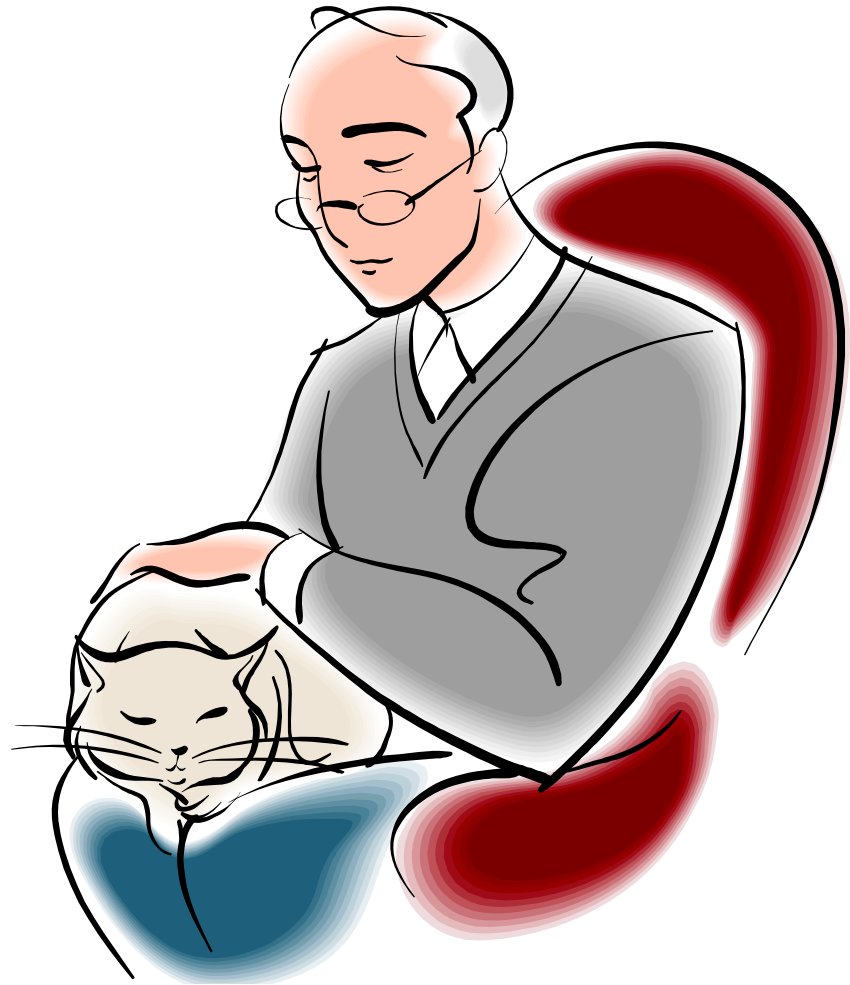
- Know that most books are not edited for content accuracy but for form: need to use judgment when trusting information in books
- Similar criteria for health magazines as websites for secondary sources: Look for quality editorial board and advisory board (usually located inside cover or on first or last page)
- Primary sources (journal articles), need to have blind review process for submitted articles.
- Be aware of possible publication bias. I.e. CAM journals found to report more positive results of CAM than standard practice journals (Coelho et al, 2007)

Step 5 practice example

- To demonstrate print source, will use on-line version of an in-print health information magazine: *Nutrition Action Health Letter*
- Available at <http://www.cspinet.org/nah/index.htm>
- To look at first page (Editorial), click on “memo from MFJ” (Michael Jacobson is the editor) leading to http://www.cspinet.org/nah/09_08/memo.pdf
- Advisory Board members are from respected institutions. Center for Science in the Public Interest (CSPI) which publishes Nutrition Action is a non-profit organization. The letter has no advertisements.
- Determined it to be trustworthy, and recommend it.

Step 6

Locating
trustworthy
systematic
reviews,
CAT's and
practice
guidelines



Definitions

- Systematic reviews are reviews of the literature conducted according to a strict set of disclosed criterion for search and selection. (Meta-analysis is a type of systematic review statistically combining data from many studies into one)
- CAT stands for Critically Appraised Topics and consist of a summary of a critical literature search on a clinical topic that has been synthesized for clinical relevance
- Reliable practice guidelines should be based on systematic review and rate strength of evidence to help with clinical decision-making.
- Current presentation focuses on resources available for free, since practitioners often don't have access to university library online databases .

Classic hierarchy of evidence

- Level 1: Strong evidence from at least one systematic review of multiple well-designed RTC
- Level 2: Strong evidence from a least one properly designed RTC of appropriate size
- Level 3: Evidence from well designed trials without randomization, single group pre-post, cohort, time series, or matched case-controlled studies
- Level 4: Evidence from well designed non-experimental studies from more than one center or research group
- Level 5: Evidence from opinion of respected authorities, based on clinical evidence, descriptive studies or reports from experts. (Chronister et al, 2008, p. 8)

Step 6 (cont)

- When searching for systematic review know that:
 - Studies searched for are unlikely to answer your exact research question: Look for best *possible* answer (Ticke-Degnen, 2000)
 - Normal to have contradictory evidence. To deal with it, need to evaluate not only primary evidence but also the systematic review (step 6)
 - Pay attention to the variety of sources used in the review and the logical links between findings, summary and clinical recommendation.
- Verify that hierarchy of evidence is mentioned in reviews and practice guidelines

Step 6 (cont)

- Sources of free databases, systematic reviews, summaries and practice guidelines include:
 - AARP Ageline database
 - Center for Healthy Aging from the National Council on Aging
 - US Department of Health and Human Services Agency for Health Care Research and Quality
 - U.S. National Guideline Clearinghouse (NGC)
 - U. K : Center for Review and Dissemination systematic reviews (CRS)
 - Cochrane collaboration summaries
- See appendix for full annotated list and websites

Step 6 (cont)

- CAT (Critically Appraised Topic) is a time-saving tool allowing busy practitioner to keep informed about the current research on clinically-relevant research topics. (Arbesman et al. 2008)
- Detailed information on CATs can be found at the Center for Evidence-Based medicine (CEBM) at <http://www.cebm.net/index.aspx?o=1216>
- A variety of organizations have CAT banks available
- Example of CATs in geriatrics on the Effective Older People Care Website at http://www.effectiveolderpeoplecare.org/stepInfoPage.aspx?pt_id=19

Practice illustration step 6

- Client from the wellness group had asked about the benefits of Tai Chi to prevent falls.
- Went first to (TRIP) database
<http://www.tripdatabase.com/index.html>
 - Put in following key words “effectiveness Tai Chi”
 - Selected “filter by systematic review” on right
 - An article that caught my attention was called :
[Interventions to reduce fear of falling in community-living older people: a systematic review](#) completed in 2007. I clicked on it
 - That sytematic review (in DARE) found that **both Tai Chi and exercise seem to reduce the fear of falling, but that the evidence is limited.**

Database of Abstracts of Reviews of Effects (DARE)

Interventions to reduce fear of falling in community-living older people: a systematic review

Zijlstra G A, van Haastregt J C, van Rossum E, van Eijk J Th, Yardley L, Kempen G I

CRD summary	The authors concluded that there is limited evidence to show that home-based exercise, fall-related multifactorial interventions and community-based group t'ai chi are effective in reducing the fear of falling in older people living in the community. This was a well-conducted review and the authors' conclusions reflect the evidence and are likely to be reliable.
Authors' objectives	To identify effective interventions that reduce the fear of falling in community-living older people.
Searching	PubMed, the Cochrane CENTRAL Register, EMBASE and PsycINFO were searched from inception to January 2006. Additional studies were identified through contact with experts in the field and by handsearching the reference lists from identified reports. There were no restrictions applied to language or publication status.
Study selection: study designs	Randomised controlled trials (RCTs) were eligible for inclusion in the review.
Study selection: specific interventions	Studies of any type of intervention that were or were not explicitly aimed at reducing the fear of falling were eligible for inclusion. The included studies evaluated a variety of different types of interventions including fall-related multifactorial interventions, t'ai chi, exercise, balance, hip protectors and fall risk factor interventions. Some interventions were home-based and others were conducted in groups in the community. Most of the interventions were aimed at reducing falls; three were explicitly aimed at reducing the fear of falling. The duration of interventions ranged from one home visit to 1 hour of exercise every week for 1 year. The control interventions included usual care, written information, social home visits, stretching exercises, education about falls, discussion sessions and activities.
Study selection: participants	Studies of interventions that targeted the general population of community-living older people (mean age 65 years and older) were eligible for inclusion. Studies targeting people with a specified medical condition were excluded. Most of the included studies were of ambulatory men and women aged 60 years and older.

- To look at effects on actual falls (not just fear) I looked at an additional review in the TRIP database called **“Interventions for preventing falls in elderly people”** completed in 2003
- TRIP link led me to the Cochrane website where a summary of the systematic review was available for free
- Their conclusion is that **“Multidisciplinary interventions targeting multiple risk factors are effective in reducing the incidence of falls, as is muscle strengthening combined with balance retraining, individually prescribed at home by a trained health professional. Tai Chi may also be effective. Home hazard assessment and modification by a health professional may reduce falls, especially in those with a history of falling.[...]”**

- I went to my professional association website at AOTA.org to look for a CAT on fall prevention, but didn't find a CAT on that topic.
- I went to OTCATS.com, which is another site for CAT for occupational therapists at <http://www.otcats.com/topics/index.html> and found a CAT downloadable as a PDF which concluded that :
“The use of a multifactorial falls risk assessment and management plan reduces the risk of falling and the monthly fall rate of older adults and is the most effective component of a falls prevention programme. The next most effective component is exercise”.

Controversies step 6

- Should systematic reviews and practice guideline include qualitative studies? (i.e. Dixon-Woods, 2007; Bunn et al. 2008) Would users of the reviews perceive them as rigorous enough? Would they prefer it?
- Given the difficulty experienced by some reviewers when using standard criteria to evaluate websites for inclusion in databases about CAM (i.e. Cooke and Gray, 2002 for BIOME). Should there be different standards for CAM? Should users of those databases be concerned?

Step 7

Tools for
evaluating
the
evidence



Step 7

- RTC is the golden rule for outcome studies but they do not eliminate all bias.
- A tool to evaluate the quality of RTC is the Consolidated Statement of Reporting Trials, or CONSORT (<http://www.consort-statement.org>). It is a 22-item checklist which helps both in preparing reports and aiding their critical appraisal.
- Expanded version of the CONSORT called NMEC is longer but clearer (Moerg-Mogren & Nelson, 2006)
- Some have proposed that some criterion of CONSORT are a challenge in therapy, i.e. the need to “blind” to the treatment vs. control condition. (Nelson & Mathiowetz, 2004)

Step 7 (cont)

- PEDro scale is an easy-to-use 10-items checklist of moderate validity for evaluating research reports
http://www.pedro.fhs.usyd.edu.au/scale_item.html
- Critical Appraisal Skills Programme, (U.K) offers tutorials and downloadable checklists to help practitioners evaluate both quantitative and qualitative studies
<http://www.phru.nhs.uk/Pages/PHD/resources.htm>
- Some tools proposed to evaluate qualitative studies for inclusion in systematic review (i.e. QARI software - Qualitative Assessment and Review Instrument) have not received wide acceptance yet (Thomas et al. 2008)

Controversy step 7

- Two main factors are a challenge in the evaluation of RCT about treatment effectiveness in many health care fields but particularly CAM:
 - Determining the strength of the link between a sound theory (or model), the research question, method and interpretation.
 - Ruling out biases such as novelty effect or special attention when both patient and therapist are aware of the treatment condition.
- How should those weaknesses be taken into account when performing or evaluating systematic reviews?

CONCLUSION

- The famous neuroimmunologist Candice Pert was speaking at a conference in the late 90's about what her research on neuropeptides revealed about the link between the mind and the body and the benefit of non-traditional healing approaches. I asked her whether the standard scientific process should be used to test her theory.
- She responded that objective scientific evidence should be the measure for the health outcomes she was predicting.
- On the same panel was another speaker who said that for him, the bottom line of those alternative therapeutic approaches was whether it makes him feel good.
- The debate will not end here but the many lives that were saved by the advent of evidence-based practice cannot be denied. I hope you now have more tools to help practice it.

DISCUSSION?



APPENDIX STEP 3

Some.GOV General Health Information Sites

- Healthfinder: <http://www.Healthfinder.gov> is mainly consumer oriented “gateway to reliable health information resources that have been carefully selected by the U.S. Department of Health and Human Services from over 1,700 government agencies and nonprofit organizations.” (DHHS)
- Food and Drug Administration (FDA) www.fda.gov (part of DHHS) information on drugs and health practices.
- National Center for Complementary and Alternative Medicine <http://nccam.nih.gov/> Part of DHHS and NIH, “NCCAM supports research on CAM therapies to determine if they work, how they work, whether they are effective, and who might benefit most from the use of specific therapies” (NIH)

Some .GOV Sites on Aging Health

- National Institute on Aging: Supports and disseminates research on aging, both to consumers and health care providers: <http://www.nia.nih.gov/>
- AOA (administration on aging) statistics.
<http://www.aoa.gov/prof/Statistics/profile/profiles.aspx>
- CDC (Center for Disease Control) reports on older adults, i.e. for fall prevention in seniors:
<http://www.cdc.gov/ncipc/duip/preventadultfalls.htm>
- Local Governmental sites i.e. Minnesota department of health's site on aging at
http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=Aging

Some .ORG Sites on Aging and Health

- AARP portal to internet resources on aging: <http://www.aarp.org/internetresources/> links to hundreds of sites with health information related to aging. Screens out sites evaluated as biased.
- The American Geriatric Society (AGS) Foundation for Health in Aging (FHA)'s *Aging in the Know* "Gateway to health and aging resources on the web" (FHA) at <http://www.healthinaging.org/agingintheknow/research.asp>
- Local resources such as the MN board on aging advisor home <http://www.mnaging.org/advisor.htm> and its portal at <http://www.minnesotahelp.info/public/>

APPENDIX STEP 4

Some Evidence-Based Clinical Guidelines

- **General health:** US Department of Health and Human Services Agency for Health Care Research and Quality Offers clinicians free evidence-based advice and practice guidelines rated according to amount and quality of evidence <http://effectivehealthcare.ahrq.gov>
- **Health and Aging:** Center for Healthy Aging from the National Council on Aging at <http://www.healthyagingprograms.org/content.asp?sectionid=92&ElementID=97> offers free evidence-based best practice guidelines and resources to promote healthy aging.

Some Systematic Review Databases

- AARP Ageline database at <http://www.aarp.org/research/ageline/> includes free detailed summaries of systematic reviews (among other sources). Excellent resource on aging research, however links to full articles that need to be purchased
- U. S: National Guideline Clearinghouse (NGC) : <http://www.guideline.gov/> Free public resource for evidence-based clinical practice guidelines From the Agency for Healthcare Research and Quality (AHRQ). Medical/nursing focused.
- U. K : Center for Review and Dissemination systematic reviews (CRS) <http://www.york.ac.uk/inst/crd/projects.htm>
Free, excellent source of critical systematic reviews and economic evaluations, including relative strengths and weaknesses

- U.K.'s CRD includes the following free databases:
 - DARE: Database of Abstracts of Reviews of Effects contains over 5000 abstracts of critically appraised systematic reviews about the effects of interventions used in health and social care. Thorough and clear Includes research about CAM
<http://www.crd.york.ac.uk/crdweb/Home.aspx?DB=DARE&SessionID=&SearchID=&E=0&D=0&H=0&SearchFor>
 - NHS Economic Evaluation Database (NHS EED) reviews on cost-benefit analysis about health care
 - HTA Health Technology Assessment (HTA) database, reviews mostly descriptive studies

- Cochrane collaboration: Non profit organization that produces and disseminates a big collection of Critical Systematic Reviews (CSR)
- Summaries of the reviews are available for free at <http://www.cochrane.org/reviews/en/topics/index.html>
- Full copies of the reviews need to be purchased in most of the U.S. (Except Wyoming), but free in U.K.
- Specialty within Cochrane i.e. Cochrane Dementia and Cognitive Impairment Group
<http://www.jr2.ox.ac.uk/cdcig>

- Bandolier: Free Systematic reviews of treatments, of evidence about diagnosis, epidemiology or health economics . In addition, free journal and other quality resources such as extended essays (i.e. bias guide) <http://www.medicine.ox.ac.uk/bandolier/>
- Turning research into practice (TRIP) free database at <http://www.tripdatabase.com/index.html> “ Allowing users to rapidly identify the highest quality clinical evidence for clinical practice”. Clear and helpful site
- Otseeker (Occupational Therapy Systematic Evaluation of the Evidence) available for free at www.otseeker.com

- Profession-specific resources: Examples:
 - OTseeker for occupational therapy: (Occupational Therapy Systematic Evaluation of the Evidence) available for free at www.otseeker.com. Includes bibliographies, abstracts, quality rating of more than a thousand RTC
 - CATs in Occupational therapy
<http://www.otcats.com/topics/index.html>
 - PEDro in physical therapy (Physiotherapy Evidence Database) found at <http://www.pedro.fhs.usyd.edu> . Access to abstracts of randomized controlled trials, systematic reviews and evidence-based clinical practice guidelines in physical therapy.

References

- See separate file