“Evidence based practice”

Nutrition and Dietetics – Trends in Nutrition NUTG2038

Diana Carvajal Aldaz Ph.D.

IT 2020-2021

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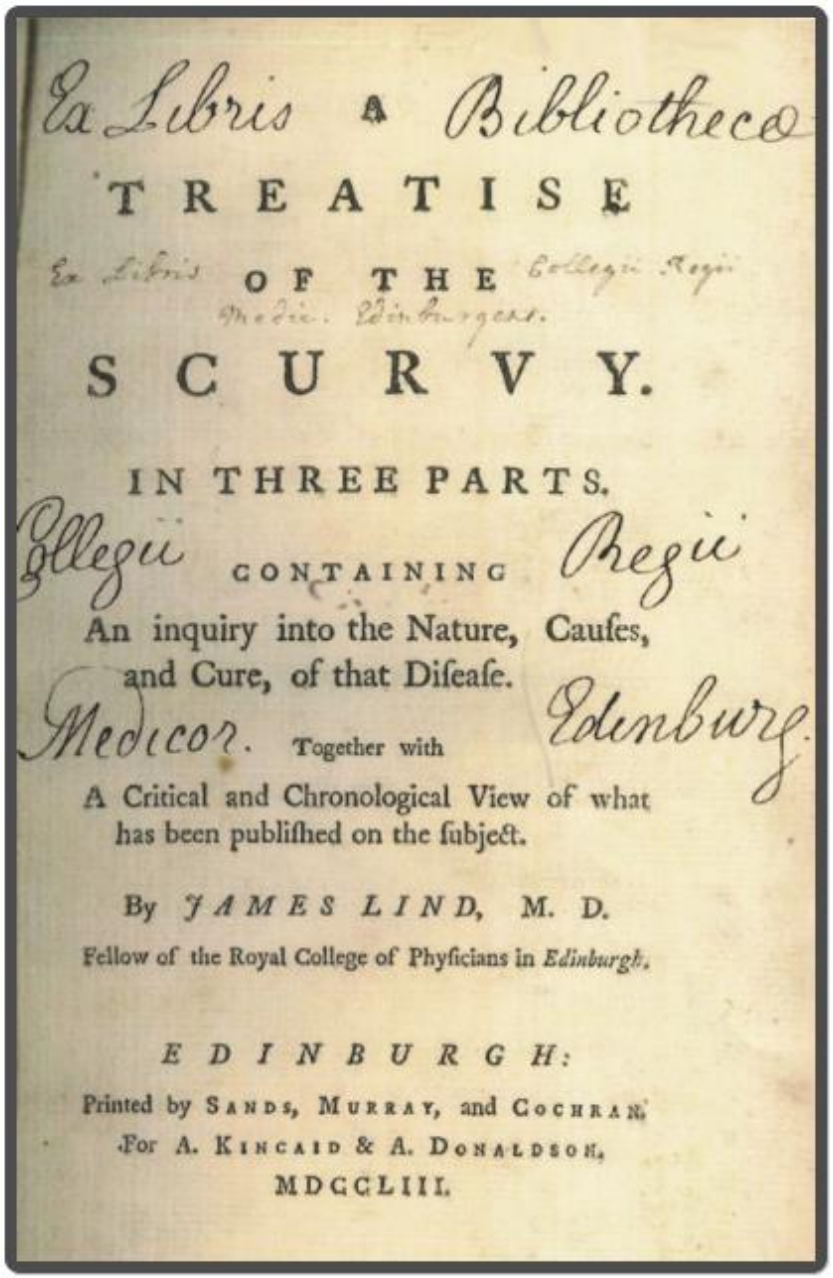
Outline

2.1. Definition of evidence based practice
2.2. Evidence based practice process
2.3. Information sources and resources

2.1. Definition of evidence based practice

What is evidence based practice?



Ex Libris A Bibliotheca

TREATISE

Ex Libris OF THE Collegii Regii Medic. Edinburgeae.

SCURVY.

IN THREE PARTS.

Collegii CONTAINING Regii

An inquiry into the Nature, Cauſes, and Cure, of that Diſeaſe.

Medicor. Together with Edinburg.

A Critical and Chronological View of what has been publiſhed on the ſubject.

By *JAMES LIND*, M. D.

Fellow of the Royal College of Phyſicians in *Edinburgh*.

EDINBURGH:

Printed by SANDS, MURRAY, and COCHRAN,
For A. KINCAID & A. DONALDSON,
MDCCLIII.

https://www.jameslindlibrary.org/lind-j-1753/

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› Asia Pac J Clin Nutr. 2000 Sep;9 Suppl 1:S4-9. doi: 10.1046/j.1440-6047.2000.00174.x.

Evidence-based nutrition

D Trichopoulos [1], P Lagiou, A Trichopoulou

Affiliations + expand

PMID: 24398277 DOI: 10.1046/j.1440-6047.2000.00174.x

Free article

Abstract

What are the objectives of an ideal diet? Are they to prolong life or maximize quality adjusted life expectancy? Does this focus on individuals or on the population at large, taking equity and resources into account? What about externalities that should take into account cultural heritage, protection of the environment and macroeconomic considerations? Few people have the experience, expertise and knowledge to adequately address these questions. It is only feasible to argue that there are two approaches in order to establish the proper diet, with the limited objective of longevity. Contrary to the assertions of several influential groups, there is no such thing as a 'positive health', and longevity can only be defined as the inverse of mortality from all causes. The crucial questions are: do we need to study the proper diet to reduce incidence of and mortality from particular common diseases and then find the common elements in these various diets in order to construct de novo the ideal diet (bottom up approach)? Alternatively, is it better to harvest the experience of various cultures whose diets appear to protect against premature morbidity and mortality (top down approach)? The first approach would rely on associations between food groups, foods and nutrients on the one hand and the incidence of specific diseases on the other, whereas the second would evaluate and quantify the effects of 'natural' diets on longevity. The first approach has been largely followed by mainstream nutritional epidemiologists, whereas the second has been advocated by a few international experts.

Trichopoulos D, Lagiou P, Trichopoulou A. Evidence-based nutrition. Asia Pac J Clin Nutr. 2000 Sep;9 Suppl 1:S4-9. doi: 10.1046/j.1440-6047.2000.00174.x. PMID: 24398277.

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NUTRICIÓN BASADA EN LA EVIDENCIA

Jorge Luis Doreste Alonso y Lluís Serra Majem
Departamento de Ciencias Clínicas. Universidad de Las Palmas de Gran Canaria. (Las Plamas de Gran Canaria, España)
E-mail: jdoreste@dcc.ulpgc.es; lserra@dcc.ulpgc.es

Introducción

¿Qué es, y qué no es, la nutrición basada en la evidencia?. La Nutrición Basada en la Evidencia puede concebirse como la aplicación en nuestra disciplina de los principios de la Medicina Basada en la Evidencia (MBE), definida ésta como la "aplicación consciente, explícita y juiciosa de la mejor evidencia científica disponible para tomar decisiones sobre la atención de los pacientes, y cuya práctica integra la experiencia del clínico con la mejor evidencia externa disponible procedente de una investigación sistemática (1)"

De este modo, la Nutrición Basada en la Evidencia incluiría, de un lado, la aplicación sistemática de métodos científicamente rigurosos para evaluar la efectividad de las intervenciones sanitarias, tanto terapéuticas como preventivas, a nivel individual, lo que permitiría juzgar su pertinencia y decidir su aplicabilidad teniendo en cuenta las circunstancias y preferencias de los pacientes en las decisiones clínicas (2). De otro lado, y de forma implícita, también estos principios son aplicables a nivel poblacional, lo que se ha dado en llamar Atención, o Política, Sanitaria Basada en la Evidencia (3), mediante los que debemos valorar la tecnología, la cartera de servicios y los modelos de gestión más efectivos y eficientes, y sus resultados, y así por ejemplo las políticas alimentarias (Ver Figura 1).

Nutrición basada en la evidencia: presente, limitaciones y futuro

Evidence-based nutrition: present, limitations and future

D. DEL OLMO[a], V. ALCÁZAR[a], T. LÓPEZ DEL VAL[a]

[a] Secci??n de Endocrinolog??a y Nutrici??n. Hospital Severo Ochoa. Legan??s. Madrid. Espa??a.

La medicina basada en la evidencia (MBE) es, en la actualidad, la forma más fiable y segura de enfrentarse a la práctica clínica. Una de las definiciones más aceptadas recoge las 3 vertientes fundamentales de la MBE: las pruebas científicas, la experiencia clínica, y las necesidades y los valores del paciente. Desde su introducción en 1992, la MBE se ha aceptado, extendido e incluido en las distintas especialidades médicas, aunque también han aparecido importantes críticas y rechazos a su generalización así como dificultades en su aplicación. Entre los factores relacionados con nuestra dificultad de poner en marcha la estrategia de la MBE se encuentran la formación tradicional que hemos recibido como médicos, la enorme y desbordante cantidad de bibliografía científica publicada, y el tipo de fuentes que estamos acostumbrados a consultar ante los problemas diarios de la práctica clínica. Respecto a los argumentos más utilizados por sus críticos destacan la definición de reduccionista o simplista, y la poca importancia que, a su juicio, se presta a la experiencia clínica. Probablemente, y aunque sea difícil de reconocer, la característica de la MBE que más rechazo produce es la ausencia de una verdad universal y absoluta: las conclusiones a las que la MBE puede llegar siempre van precedidas de la descripción de la investigación primaria incluida y analizada; la aparición de nuevos resultados puede (y debe) modificar nuestra práctica clínica. Las revisiones sistemáticas de la bibliografía y las guías de práctica clínica, como instrumentos propios, facilitan la incorporación y el desarrollo de la MBE. La nutrición basada en la evidencia se encuentra, además de las limitaciones propias de la MBE, con una serie de problemas específicos relacionados fundamentalmente con las dificultades de diseño metodológico de los estudios, la poca evidencia científica disponible y las escalas de calidad y niveles de evidencia utilizados. Para comprender estos problemas es importante analizarlos de forma independiente en nutrición clínica y nutrición comunitaria, y abordar la primera separándola en sus 2 vertientes: la necesidad de alimentar-mantener el estado nutricional, y la utilización de la nutrición como arma terapéutica-fármaco, capaz de modificar por sí misma la evolución de una enfermedad. A lo largo de este trabajo se revisan los conceptos, las aplicaciones y las limitaciones de la MBE y de su aplicación en el campo de la nutrición.

Palabras clave:

Nutrición | Medicina basada en la evidencia | MBE | NuBE

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“La inteligencia consiste no sólo en el conocimiento, sino también en la destreza de aplicar los conocimientos en la práctica”.

Aristóteles

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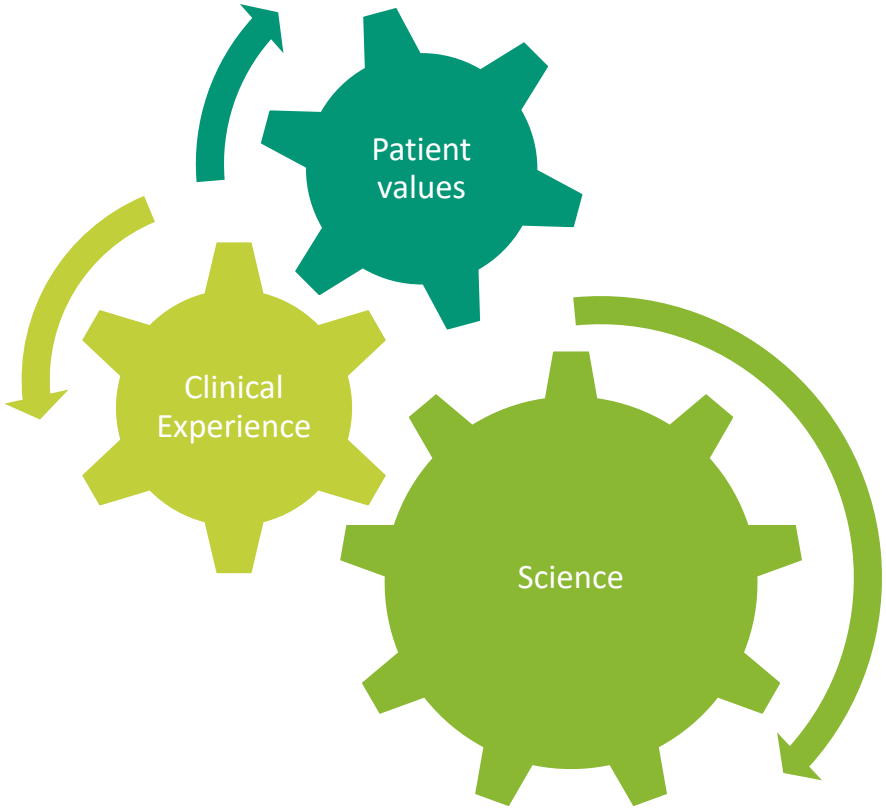
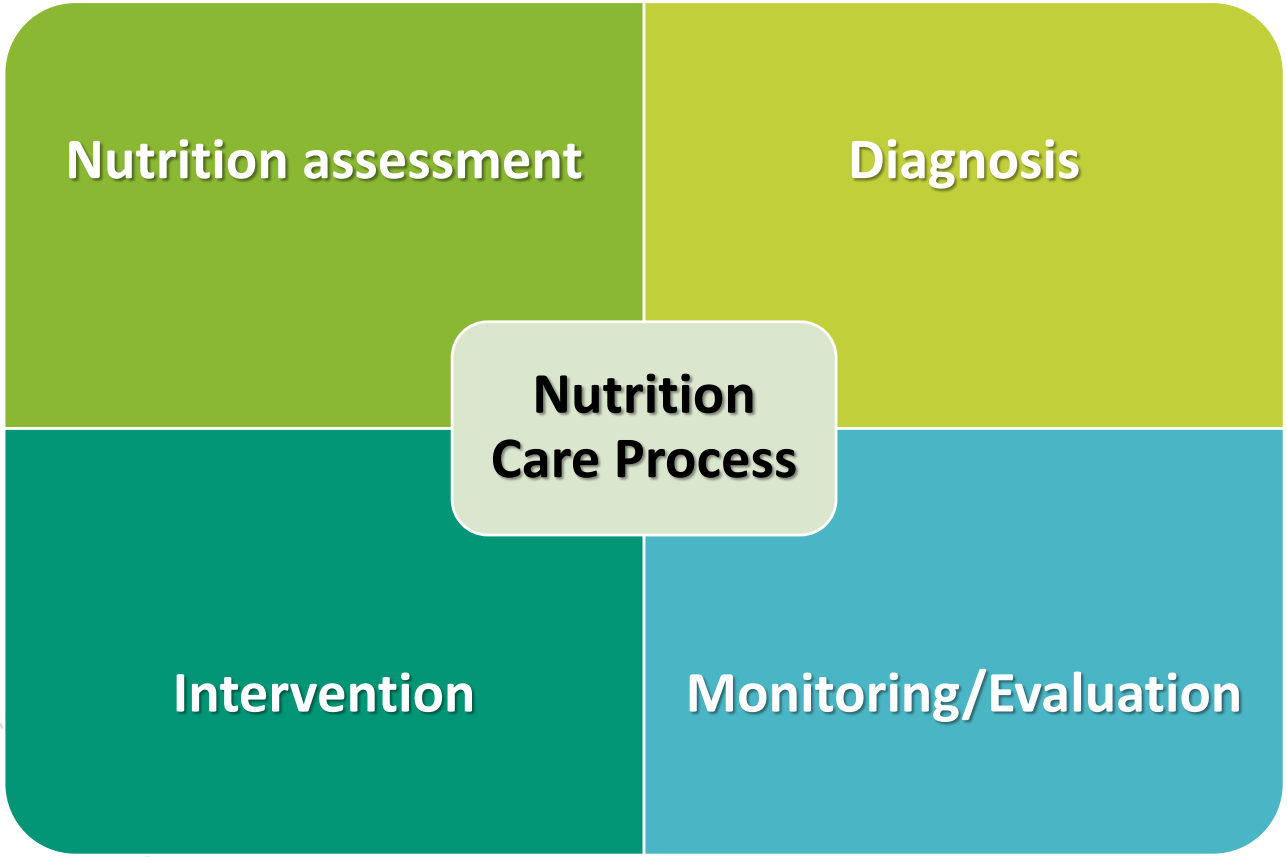
2.1. Definition of evidence based practice

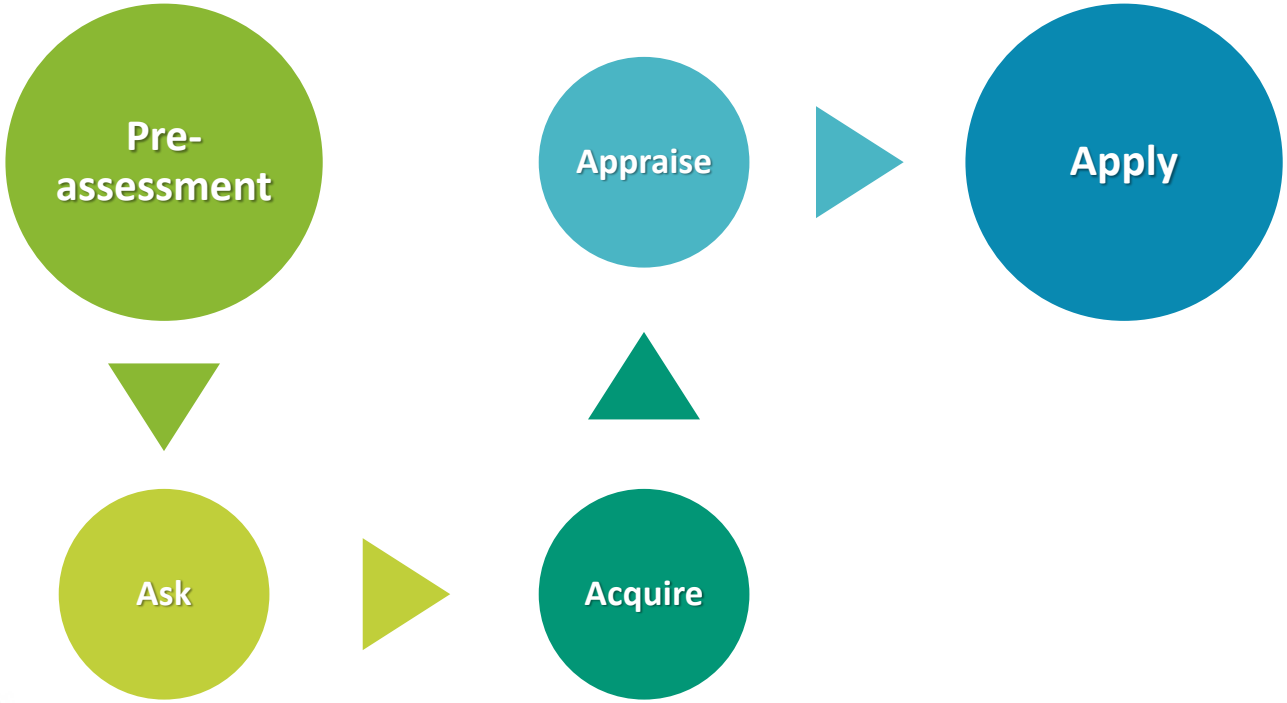


Application of science to the Nutrition Care Process = Evidence Based Nutrition

2.1. Definition of evidence based practice



2.2. Evidence based practice process



2.2. Evidence based practice process

Pre-assessment

- ✓Initial exam
  - Patient chief complaint
  - Food/Nutrition history
  - Anthropometric measures
  - Biochemical/Medical Data
  - Nutrition focused physical findings
- ✓Patient expectations and values

2.2. Evidence based practice process

Ask

✓Objective: to formulate a question

✓Pico approach
- Patient population/problem
- Intervention/exposure
- Comparison
- Outcome

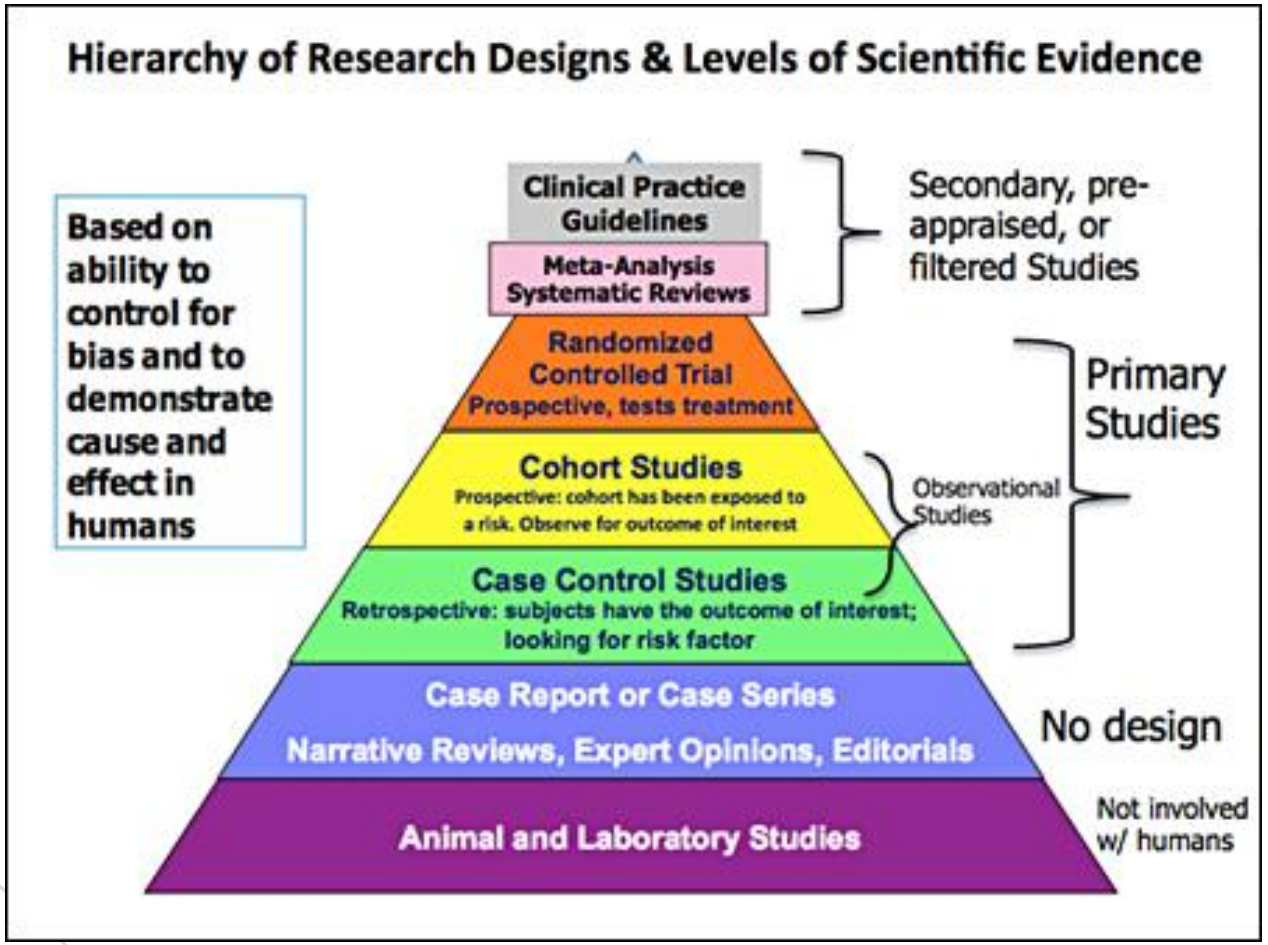
2.2. Evidence based practice process

2.2. Evidence based practice process

Acquire

- ✓Objective: to find the best available evidence to address PICO
- ✓Type of evidence
- ✓Search process

2.2. Evidence based practice process

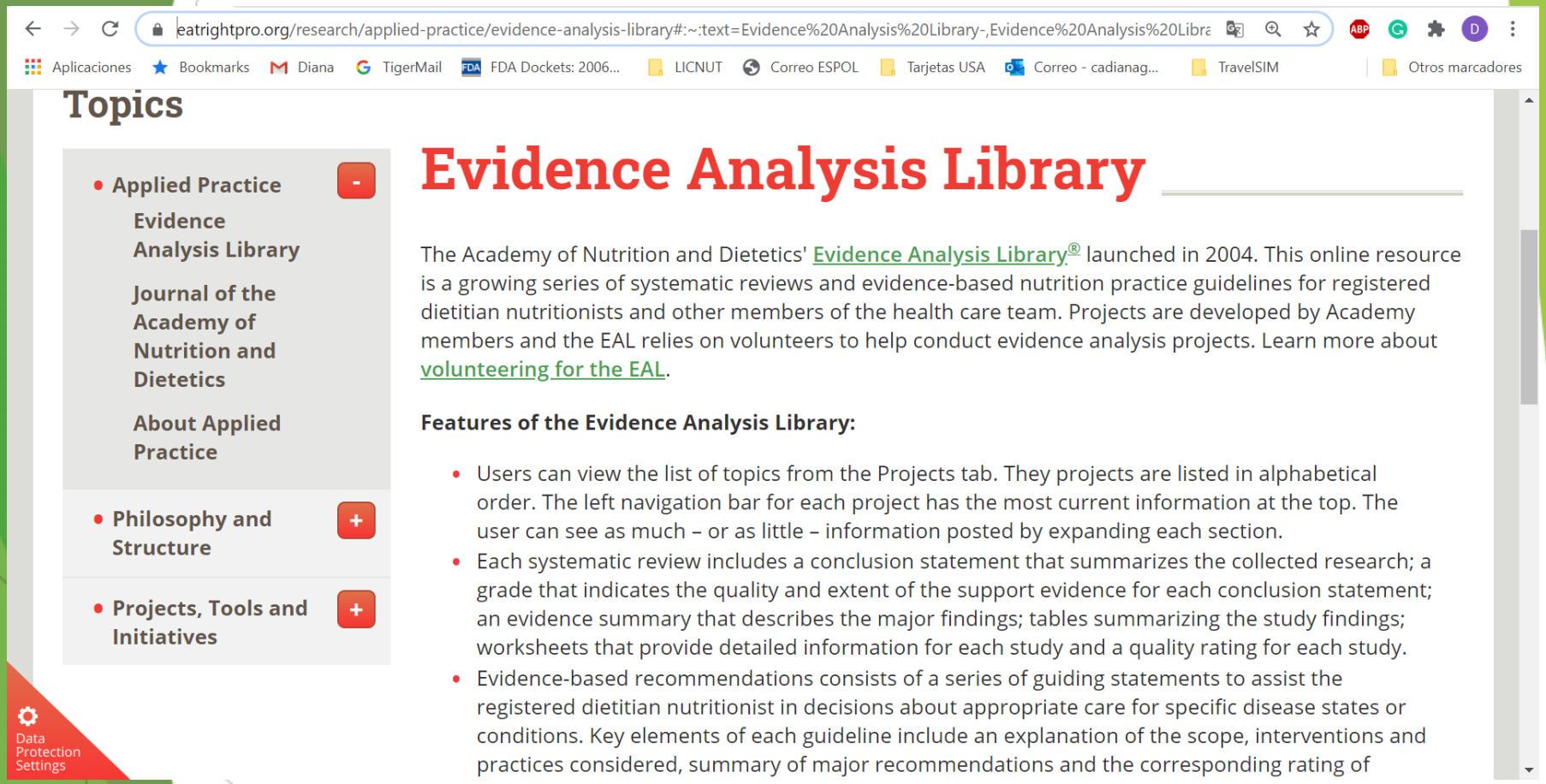


2.2. Evidence based practice process

Sources of Evidence

- ✓Evidence analysis library – Academy of Nutrition and Dietetics

https://www.eatrightpro.org/research/applied-practice/evidence-analysis-library#:~:text=Evidence%20Analysis%20Library-,Evidence%20Analysis%20Library,of%20the%20health%20care%20team.



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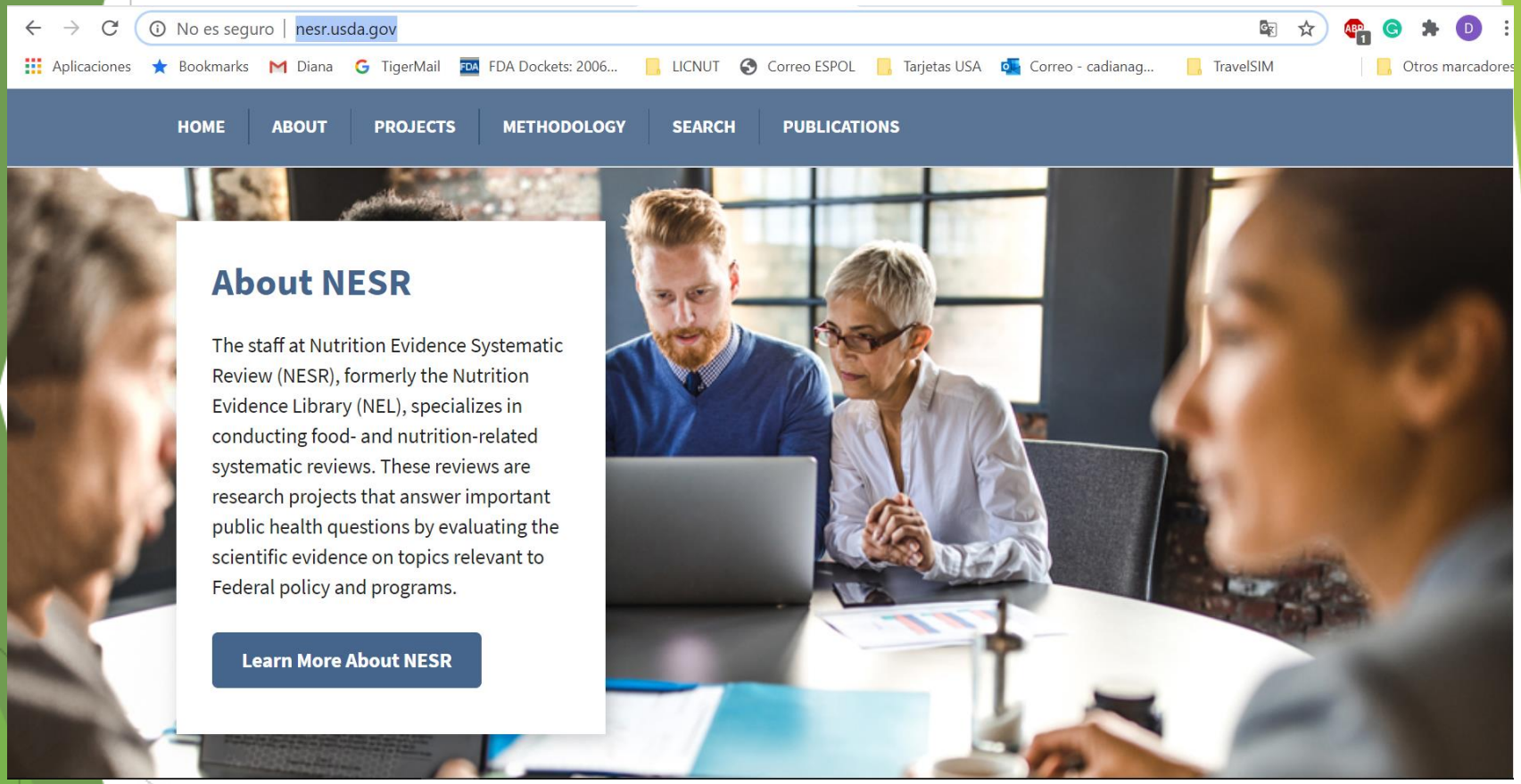
2.2. Evidence based practice process

Sources of Evidence

✓Evidence analysis library - USDA

https://nesr.usda.gov/



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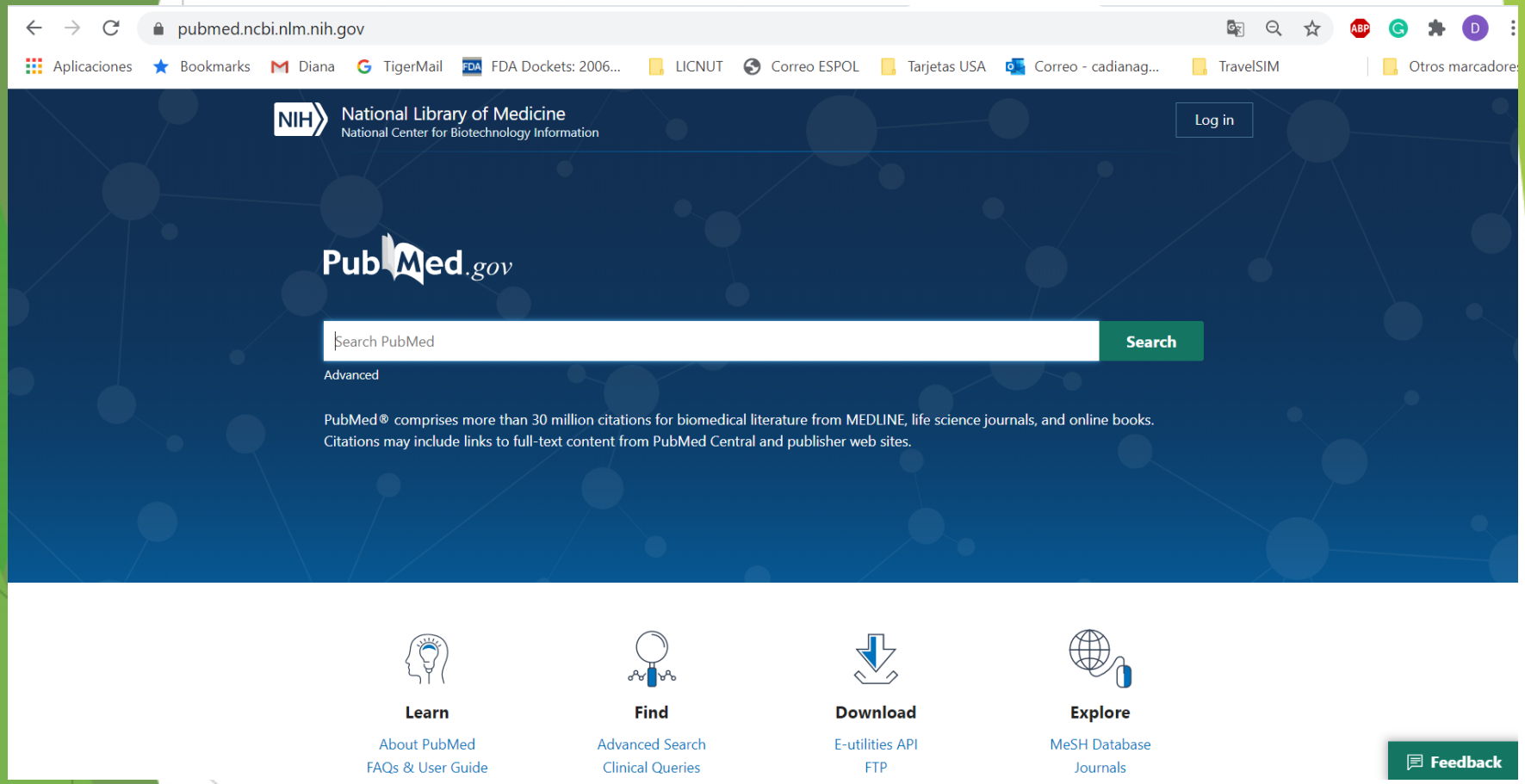
2.2. Evidence based practice process

Sources of Evidence

✓Pubmed

https://pubmed.ncbi.nlm.nih.gov/



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2.2. Evidence based practice process

Acquire

- ✓Search terms
  - Treatment question → intervention + outcome + comparison
  - Etiology → problem + exposure
  - Diagnosis → intervention + outcome
- ✓Limits
- ✓Perfect matches

2.2. Evidence based practice process

- When interpreting nutrition research findings
  - Think critically
  - Think carefully
- Type of research design
- What can be concluded
- Most common research designs
  - Descriptive
  - Epidemiology
  - Experimental

2.2. Evidence based practice process

Descriptive Research

- Describes a state or characteristic at a specific point in time
- Useful to generate hypotheses
- Provide baseline data
- Data collected → observation, interviews and questionnaires
- Purpose not a hypothesis

2.2. Evidence based practice process

- Descriptive research includes
  - Qualitative
  - Cross-sectional
  - Case reports

Latino Parents' Perceptions of Physical Activity and Healthy Eating: At the Intersection of Culture, Family, and Health

Sharon E Taverno Ross [1], Laura Macia [2], Patricia I Documét [2], Carla Escribano [3], Tahereh Kazemi Naderi [4], Ivonne Smith-Tapia [5]

Affiliations + expand

PMID: 29954715 PMCID: PMC6230483 DOI: 10.1016/j.jneb.2017.12.010

Free PMC article

Abstract

Objective: To explore Latino parents' perspectives on healthy living and identify strategies to incorporate in a future child obesity intervention.

Design: Descriptive, qualitative study.

Setting: Participants were recruited from an emerging Latino community (area with low [< 5%] yet growing concentrations of Latinos) in Allegheny County, PA.

Participants: Thirty-two parents of preschool children participated in 5 Spanish-language focus groups.

Phenomenon of interest: Parents' perceptions of a healthy lifestyle (ie, physical activity and nutrition).

Analysis: Data were analyzed using the constant comparison method to identify salient categories, themes, and patterns.

Results: Three overarching themes were identified: (1) Healthy Living: Beyond One's Control; (2) Estamos Acostumbrados [We Are Used to a Certain Lifestyle]; and (3) Latin American and US Culture Conflict. In general, parents perceived maintaining a healthy lifestyle to require enormous effort and that change was difficult given a lack of knowledge and control.

Conclusions and implications: Key intervention approaches with this population may include a focus on the family environment. Increasing knowledge, building self-efficacy, and modeling behavior through family recipe preparation and physical activity breaks may be necessary, as well as an emphasis on and orientation to community resources to support behavior change and physical activity and healthy eating habits.

Keywords: Hispanic American; focus groups; nutrition; pediatric obesity; physical activity.

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Identifying Eating Habits in Finnish Children: A Cross-Sectional Study

Rejane Augusta de Oliveira Figueiredo [1 2], Jannina Viljakainen [3 4], Heli Viljakainen [3 5], Eva Roos [3 6], Trine B Rounge [3 4 7], Elisabete Weiderpass [3 4 7 8 9]

Affiliations + expand

PMID: 30876472 PMCID: PMC6420733 DOI: 10.1186/s12889-019-6603-x

Free PMC article

Abstract

Background: We aimed to identify different eating habits among Finnish children and to evaluate their association with meal patterns, breakfast consumption, and socio-demographic characteristics in a large, nationwide cohort of children.

Methods: We evaluated 10,569 children aged 9-14 years into the Finnish Health in Teens cohort in a cross-sectional design. The hierarchical K-means method was used to identify groups of children with different eating habits, based on five factors obtained through factor analysis of 10 food items. Multiple correspondence analysis was used to show associations between groups with different eating habits and meal patterns, breakfast patterns, gender, age, and language spoken at home.

Results: Analyses identified three groups: unhealthy eaters (12.3%), fruit and vegetable avoiders (43.3%), and healthy eaters (44.1%). Most children had regular meal and breakfast patterns. The proportion of boys was higher among unhealthy eaters. Unhealthy eaters also showed irregular meal and breakfast patterns, and had parents with low education level. There was a higher proportion of girls among healthy eaters. Healthy eaters also showed regular meal and breakfast patterns, and had parents with high education level.

Conclusions: Although the number of unhealthy eaters was small, special attention should be still paid to these, mostly male children, as they have poor eating habits and they lack regular eating routine. Skipping breakfast was more common among older children and girls, although girls had healthier eating habits overall. Our results can contribute to public health efforts to improve eating behaviours, especially among children with poor eating habits and those skipping healthy food items.

Keywords: Breakfast; Children; Eating habits; Epidemiology; Finland; Healthy eating; Meal pattern.

2.2. Evidence based practice process

Epidemiology Research

- Study incidence
- Causes and effects in populations
- Key role → protecting public health
- Valuable information
- Epidemiology research includes:
  - Prospective cohort study
  - Case-Control study (retrospective type of study)

2.2. Evidence based practice process

Epidemiology Research: Prospective Cohort Study

- What is a cohort?
  - Group of people
    - Followed forward in time
    - Observed common characteristic
- Exposure variable → food, nutrient, food component
- Comparable

› Appetite. 2018 Nov 1;130:163-173. doi: 10.1016/j.appet.2018.07.032. Epub 2018 Aug 10.

Antecedents of Picky Eating Behaviour in Young Children

Pauline M Emmett [1], Nicholas P Hays [2], Caroline M Taylor [3]

Affiliations + expand

PMID: 30099068 PMCID: PMC6173797 DOI: 10.1016/j.appet.2018.07.032

Free PMC article

Abstract

Background: Picky eating behaviour in young children is a common concern for parents.

Objective: To investigate early life factors which are associated with a child becoming a picky eater.

Design: Singleton children from the Avon Longitudinal Study of Parents and Children were studied prospectively (n = 5758-6608). Parental-completion questionnaires were used to define 'picky eating' status at age 3 years, and child and parental feeding behaviours and practices throughout the first 2 years of life. Multinomial logistic regression models with 3 levels of picky eating (not, somewhat and very picky) as the dependant variables tested associations with antecedent variables, from pregnancy, and the first and second year of life, separately, then combining all significant variables in a final model.

Results: Feeding difficulties during complementary feeding and late introduction of lumpy foods (after 9 months) were associated with increased likelihood of the child being very picky. A strong predictor was the child being choosy at 15 months, particularly if the mother was worried about this behaviour. Many children (56%) were considered to be choosy at 15 months: 17% went on to be very picky at 3 years if the mother was not worried, compared with 50% if the mother was very worried by the choosiness. The mother providing fresh fruit and eating the same meal as the child were protective against later 'picky eating', while feeding ready-prepared food was predictive.

Conclusion: Advice and support to parents could help to reduce picky eating behaviour. Parents should be encouraged to introduce lumpy foods by 9 months, to feed fresh foods particularly fruit, and to eat with their children. Parents should be reassured that choosiness is normal and to continue to provide a variety of foods.

Keywords: ALSPAC; Complementary feeding; Feeding behaviour; Parental feeding practices; Picky eating; Pre-school children.

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2.2. Evidence based practice process

Epidemiology Research: Case – Control Study

- Retrospective and historically
- Exposure status → after disease status
- Comparison groups are formed based on disease or outcome status (cases or controls)

Multicenter Study > Rev Saude Publica. 2016 Dec 22;50:82.
doi: 10.1590/S1518-8787.2016050006374.

Association Between Diabetes and Tuberculosis: Case–Control Study

[Article in English, Portuguese]
Susan Martins Pereira [1], Gleide Santos de Araújo [2], Carlos Antônio de Souza Teles Santos [3], Maeli Gomes de Oliveira [4], Maurício Lima Barreto [3]

Affiliations + expand

PMID: 28099656 PMCID: PMC5152831 DOI: 10.1590/S1518-8787.2016050006374
Free PMC article

Abstract in English , Portuguese

Objective: To test the association between diabetes and tuberculosis.

Methods: It is a case-control study, matched by age and sex. We included 323 new cases of tuberculosis with positive results for bacilloscopy. The controls were 323 respiratory symptomatic patients with negative bacilloscopy, from the same health services, such as: ambulatory cases from three referral hospitals and six basic health units responsible for the notifications of new cases of tuberculosis in Salvador, Bahia. Data collection occurred between 2008 and 2010. The instruments used were structured interview, including clinical data, capillary blood glucose (during fasting or postprandial), and the CAGE questionnaire for screening of abusive consumption of alcohol. Descriptive, exploratory, and multivariate analysis was performed using conditional logistic regression.

Results: The average age of the cases was 38.5 (SD = 14.2) years and of the controls, 38.5 (SD = 14.3) years. Among cases and controls, most subjects (61%) were male. In univariate analysis we found association between the occurrence of diabetes and tuberculosis (OR = 2.37; 95%CI 1.04-5.42), which remained statistically significant after adjustment for potential confounders (OR = 3.12; 95%CI 1.12-7.94).

Conclusions: The association between diabetes and tuberculosis can hinder the control of tuberculosis, contributing to the maintainance of the disease burden. The situation demands increasing early detection of diabetes among people with tuberculosis, in an attempt to improve disease control strategies.

2.2. Evidence based practice process

Confounding relationships

- Interest factor related to another factor
- Obscure or exaggerate associations
- Inability to control for confounders

2.2. Evidence based practice process

How to control confounders?

- Study design
  - Randomization
  - Restriction
  - Matching
- Study analysis
  - Stratification and statistical modeling

2.2. Evidence based practice process

Effect modifiers

- Alters the association
- Exposure or treatment may not have the same effect
- Gender, age, and genetics profile
- Random assignment or control helps

2.2. Evidence based practice process

Experimental Study (Randomized Trial)

- Most rigorous
- Consenting to participate
- Randomized one or more treatment or intervention
- Observed outcomes or end points
- Group comparison or cross – over design
- Causal inferences

2.2. Evidence based practice process

Experimental Study (Randomized Trial)

- One or multiple hypotheses
- Variables
  - Dependent variable
  - Independent variable

A School-Based Intervention Improved Dietary Intake Outcomes and Reduced Waist Circumference in Adolescents: A Cluster Randomized Controlled Trial

Angélica Ochoa-Avilés [1], Roosmarijn Verstraeten [2 3], Lieven Huybregts [4], Susana Andrade [5], John Van Camp [3], Silvana Donoso [5], Patricia Liliana Ramírez [5], Carl Lachat [3], Lea Maes [6], Patrick Kolsteren [3]

Affiliations + expand

PMID: 29228946 PMCID: PMC5725778 DOI: 10.1186/s12937-017-0299-5

Free PMC article

Abstract

Background: In Ecuador, adolescents' food intake does not comply with guidelines for a healthy diet. Together with abdominal obesity adolescent's inadequate diets are risk factors for non-communicable diseases. We report the effectiveness of a school-based intervention on the dietary intake and waist circumference among Ecuadorian adolescents.

Methods: A pair-matched cluster randomized controlled trial including 1430 adolescents (12-14 years old) was conducted. The program aimed at improving the nutritional value of dietary intake, physical activity (primary outcomes), body mass index, waist circumference and blood pressure (secondary outcomes). This paper reports: (i) the effect on fruit and vegetable intake, added sugar intake, unhealthy snacking (consumption of unhealthy food items that are not in line with the dietary guidelines eaten during snack time; i.e. table sugar, sweets, salty snacks, fast food, soft drinks and packaged food), breakfast intake and waist circumference; and, (ii) dose and reach of the intervention. Dietary outcomes were estimated by means of two 24-h recall at baseline, after the first 17-months (stage one) and after the last 11-months (stage two) of implementation. Dose and reach were evaluated using field notes and attendance forms. Educational toolkits and healthy eating workshops with parents and food kiosks staff in the schools were implemented in two different stages. The overall effect was assessed using linear mixed models and regression spline mixed effect models were applied to evaluate the effect after each stage.

Results: Data from 1046 adolescents in 20 schools were analyzed. Participants from the intervention group consumed lower quantities of unhealthy snacks (-23.32 g; 95% CI: -45.25,-1.37) and less added sugar (-5.66 g; 95% CI: -9.63,-1.65) at the end of the trial. Daily fruit and vegetable intake decreased in both the intervention and control groups compared to baseline, albeit this decrease was 23.88 g (95% CI: 7.36, 40.40) lower in the intervention group. Waist circumference (-0.84 cm; 95% CI: -1.68, 0.28) was lower in the intervention group at the end of the program; the effect was mainly observed at stage one. Dose and reach were also higher at stage one.

Conclusions: The trial had positive effects on risk factors for non-communicable diseases, i.e. decreased consumption of unhealthy snacks. The program strategies must be implemented at the national level through collaboration between the academia and policy makers to assure impact at larger scale.

Trial registration: ClinicalTrial.gov-NCT01004367.

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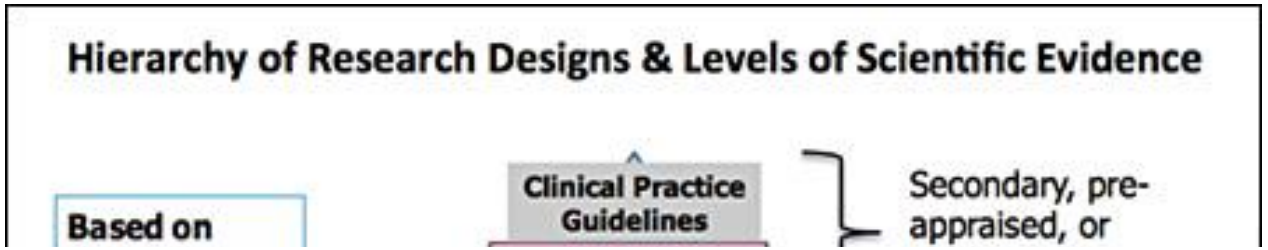
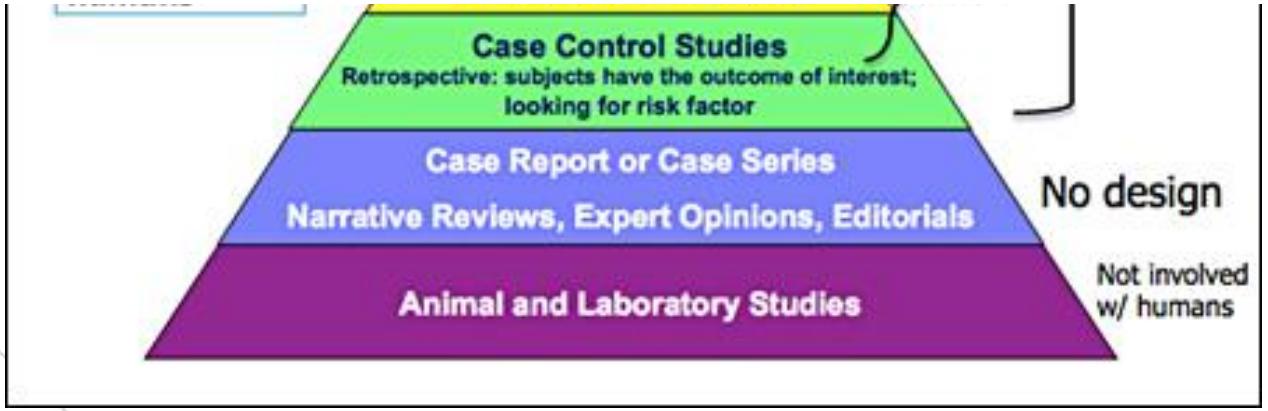
2.2. Evidence based practice process



Understand the strengths and weakness

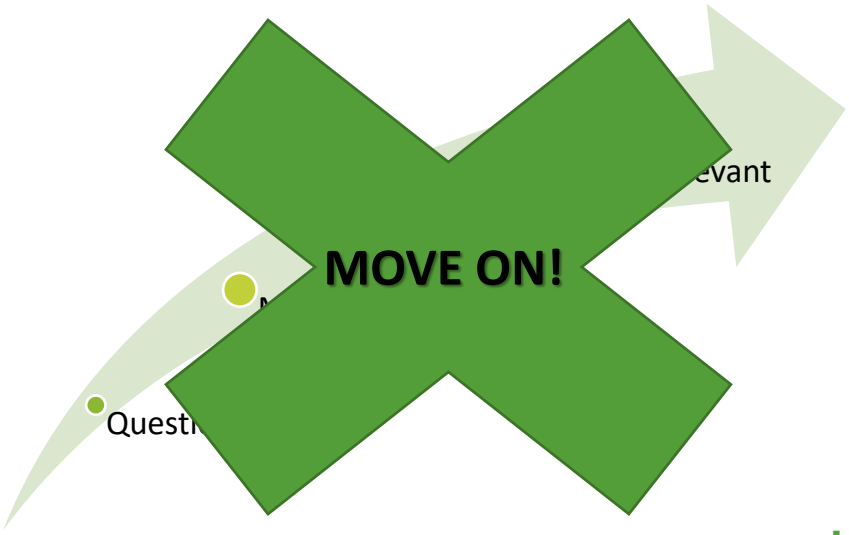
Important to formulate your conclusions



2.2. Evidence based practice process

Appraise

✓Objective: to ensure clinical decisions are based on high quality science



2.2. Evidence based practice process

Appraise: CASP tool

- ✓Critical Appraisal tool → make sense of research evidence
- ✓Tools developed to ensure the scientific paper is appropriated

2.2. Evidence based practice process

Appraise: CASP tool sources

CASP Tool	Website
UK	https://casp-uk.net/casp-tools-checklists/
OXFORD	https://www.cebm.net/2014/06/critical-appraisal/
CEBMa	https://cebma.org/resources-and-tools/what-is-critical-appraisal/
TORONTO	https://ebm-tools.knowledgetranslation.net/worksheet

Paper for appraisal and reference:.....

Section A: Are the results of the trial valid?

1. Did the trial address a clearly focused issue?

Yes	
Can't Tell	
No	

HINT: An issue can be 'focused' In terms of
- the population studied
- the intervention given
- the comparator given
- the outcomes considered

Comments:

2. Was the assignment of patients to treatments randomised?

Yes	
Can't Tell	
No	

HINT: Consider
- how this was carried out
- was the allocation sequence concealed from researchers and patients

Comments:

3. Were all of the patients who entered the trial properly accounted for at its conclusion?

Yes	
Can't Tell	
No	

HINT: Consider
- was the trial stopped early
- were patients analysed in the groups to which they were randomised

Comments:

Critical Appraisal Skills Programme (2018). CASP (Randomised Controlled Trial) Checklist.

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SYSTEMATIC REVIEW

CEBM

UNIVERSITY OF OXFORD

Are the results of the review valid?

What question (PICO) did the systematic review address?

What is best?	Where do I find the information?
The main question being addressed should be clearly stated. The exposure, such as a therapy or diagnostic test, and the outcome(s) of interest will often be expressed in terms of a simple relationship.	The Title, Abstract or final paragraph of the Introduction should clearly state the question. If you still cannot ascertain what the focused question is after reading these sections, search for another paper!

In this paper

Yes ☐ No ☐ Unclear ☐

Comment:

F - Is it unlikely that important, relevant studies were missed?

What is best?	Where do I find the information?
The starting point for a comprehensive search for all relevant studies is the major bibliographic databases (eg Medline, Cochrane, EMBASE, etc) but should also include a search of reference lists from relevant studies and contact with experts, particularly to inquire about unpublished studies. The search should not be limited to English language only. The search strategy should include both MESH terms and text words.	The Methods section should describe the search strategy, including the terms used, in some detail. The Results section will outline the number of titles and abstracts reviewed, the number of full-text studies retrieved, and the number of studies excluded together with the reasons for exclusion. This information may be presented in a figure or flow chart.

In this paper

Yes ☐ No ☐ Unclear ☐

Comment:

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CEBMa center for Evidence-Based Management

Critical Appraisal of a Controlled Study

Appraisal questions	Yes	Can't tell	No
1. *Did the study address a clearly focused question / issue?*			
2. *Is the research method (study design) appropriate for answering the research question?*			
3. *Were there enough subjects (employees, teams, divisions, organizations) in the study to establish that the findings did not occur by chance?*			
4. *Were subjects randomly allocated to the experimental and control group? If not, could this have introduced bias?*			
5. *Are objective inclusion / exclusion criteria used?*			
6. *Were both groups comparable at the start of the study?*			
7. *Were objective and unbiased outcome criteria used?*			
8. *Are objective and validated measurement methods used to measure the outcome? If not, was the outcome assessed by someone who was unaware of the group assignment (i.e. was the assessor blinded)?*			
9. *Is the size effect practically relevant?*			
10. *How precise is the estimate of the effect? Were confidence intervals given?*			
11. *Could there be confounding factors that haven't been accounted for?*			
12. *Can the results be applied to your organization?*			

Adapted from Crombie, *The Pocket Guide to Critical Appraisal*; the critical appraisal approach used by the Oxford Centre for Evidence Medicine, checklists of the Dutch Cochrane Centre, BMJ editor's checklists and the checklists of the EPPI Centre.

Cite as: Center for Evidence Based Management (July, 2014). Critical Appraisal Checklist for a Controlled Study. Retrieved (month, day, year) from https://www.cebma.org

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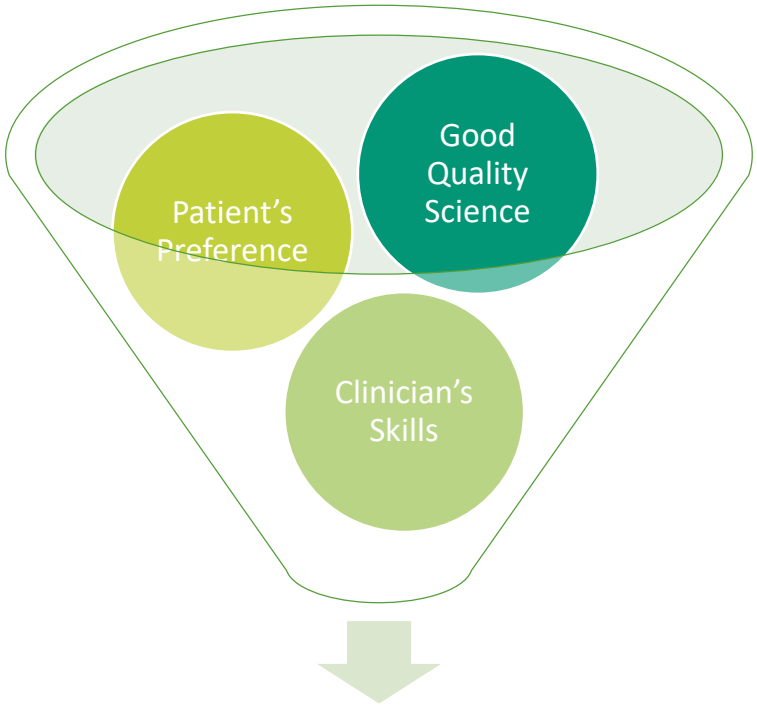
2.2. Evidence based practice process

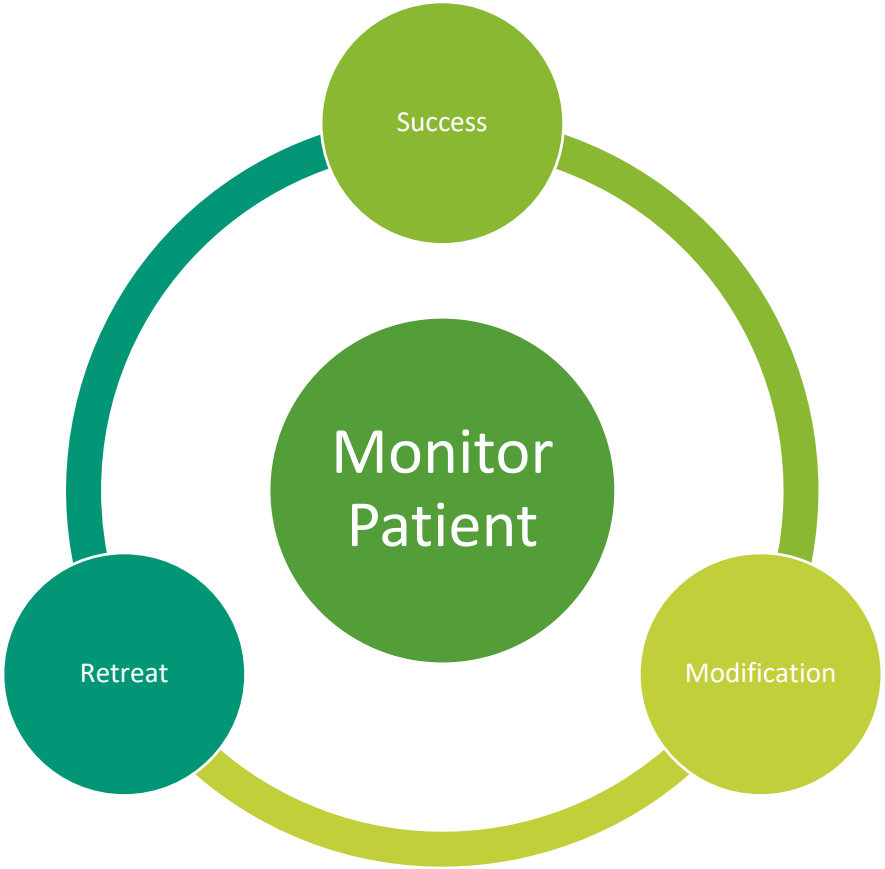
Apply

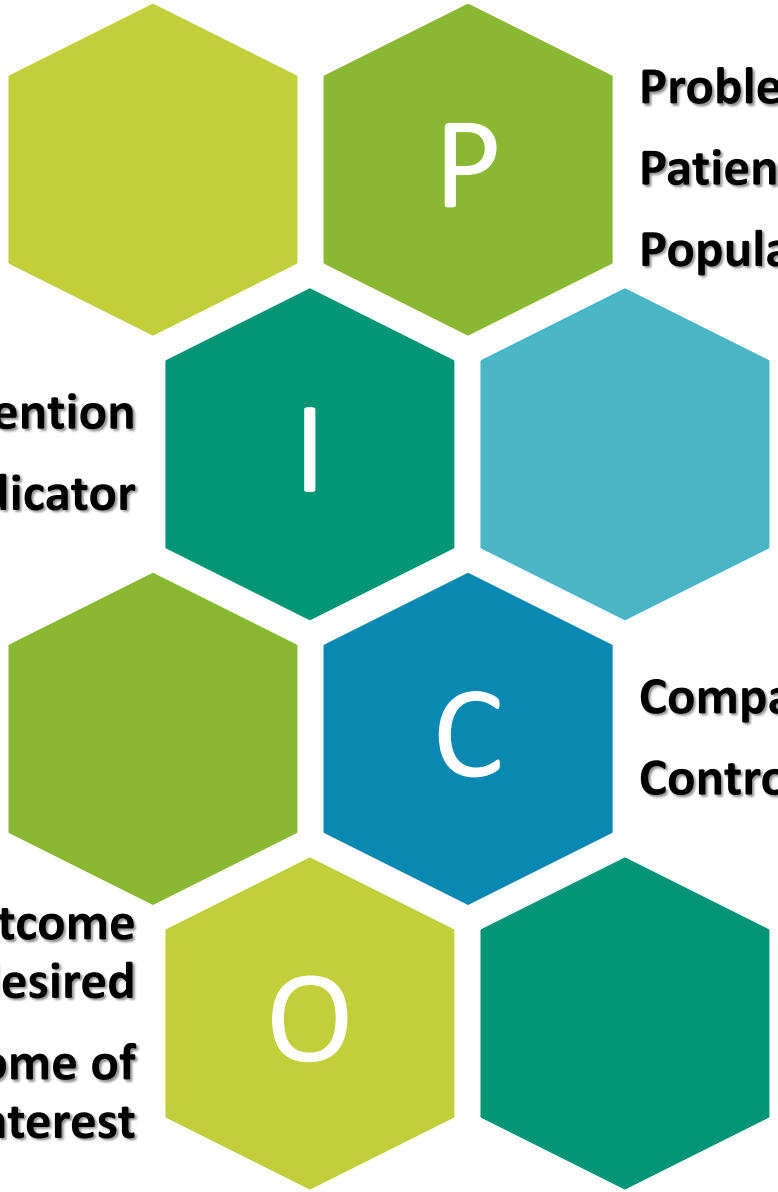
✓Objective: to present treatment options based on the best clinical evidence



2.2. Evidence based practice process

Assessment





Problem

Patient

Population

What are the characteristics of the patient or population? What is the condition or disease?

Intervention

Indicator

What do you want to with/for the patient or population?

Comparison

Control

What is the alternative to the intervention?

Outcome desired

Outcome of interest

What are the relevant outcomes?

Optional: **T**ime element
Type of study

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Common Clinical Question Types

The table below explains the primary types of clinical questions and types of evidence to answer the question.[1]

Type or Domain	Explanation	Types of evidence to answer the question
Therapy (Treatment)	Questions about the effectiveness of interventions in improving outcomes in sick patients / patients suffering from some condition. These are the most frequently asked. Among the many treatments offered by clinicians are medications, surgical procedures, excercise, and counseling about lifestyles changes.	Randomised Controlled Trial (RCT)
Prevention	Questions about the effectiveness of an intervention or exposure in preventing morbidity and mortality. Similar to treatment questions. When assessing preventive measures, it is particularly important to evaluate potential harms as well as benefits.	RCT or Prospective Study
Diagnosis	Questions about the ability of a test or procedure to differentiate between those with and without a condition or disease.	RCT or Cohort Study
Prognosis (Forecast)	Questions about the probable cause of a patient's disease or the likelihood that he or she will develop an illness.	Cohort Study and/or Case-Control Series
Etiology (Causation)	Questions about the harmful effect of an intervention or exposure on a patient.	Cohort Study
Meaning	Questions about patients' experiences and concerns.	Qualitative Study

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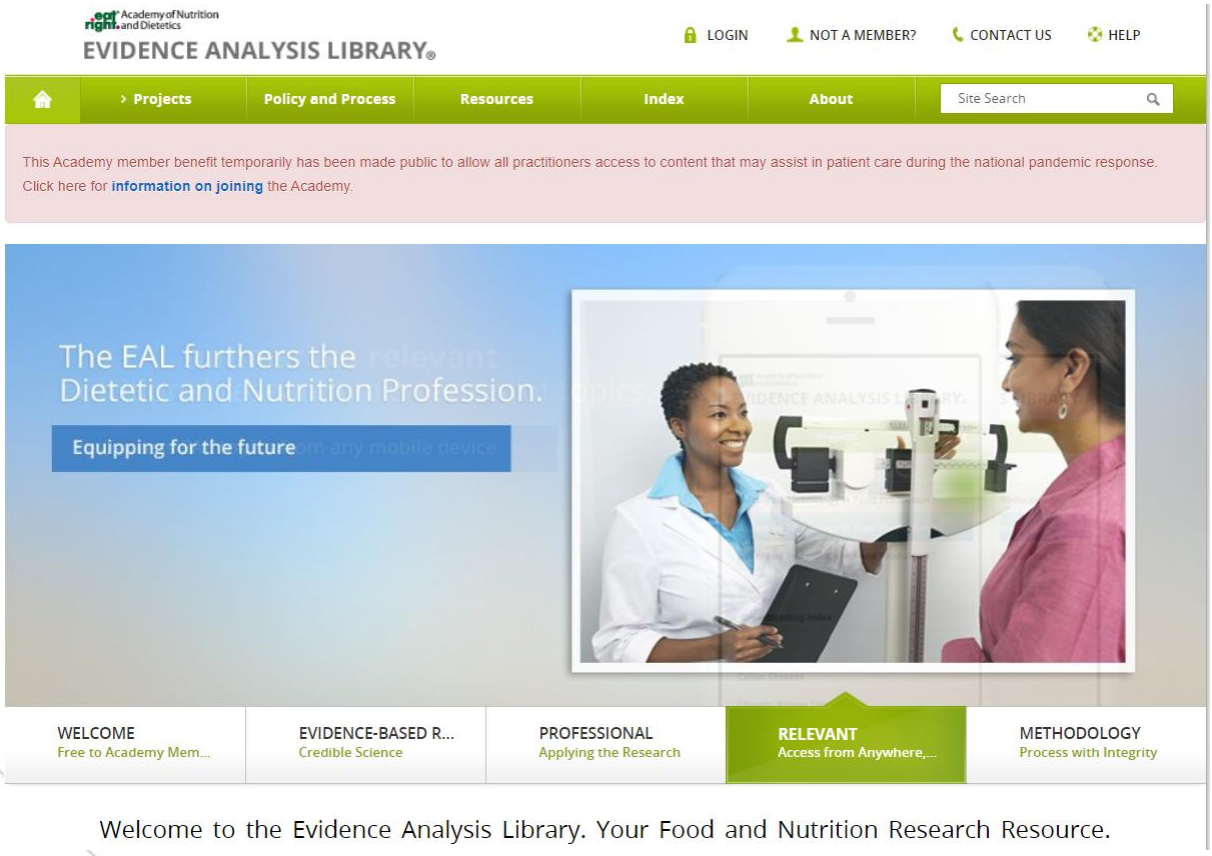
https://canberra.libguides.com/c.php?g=599346&p=4149723
07/10/2020

2.3. Information sources and resources



https://www.andeal.org/

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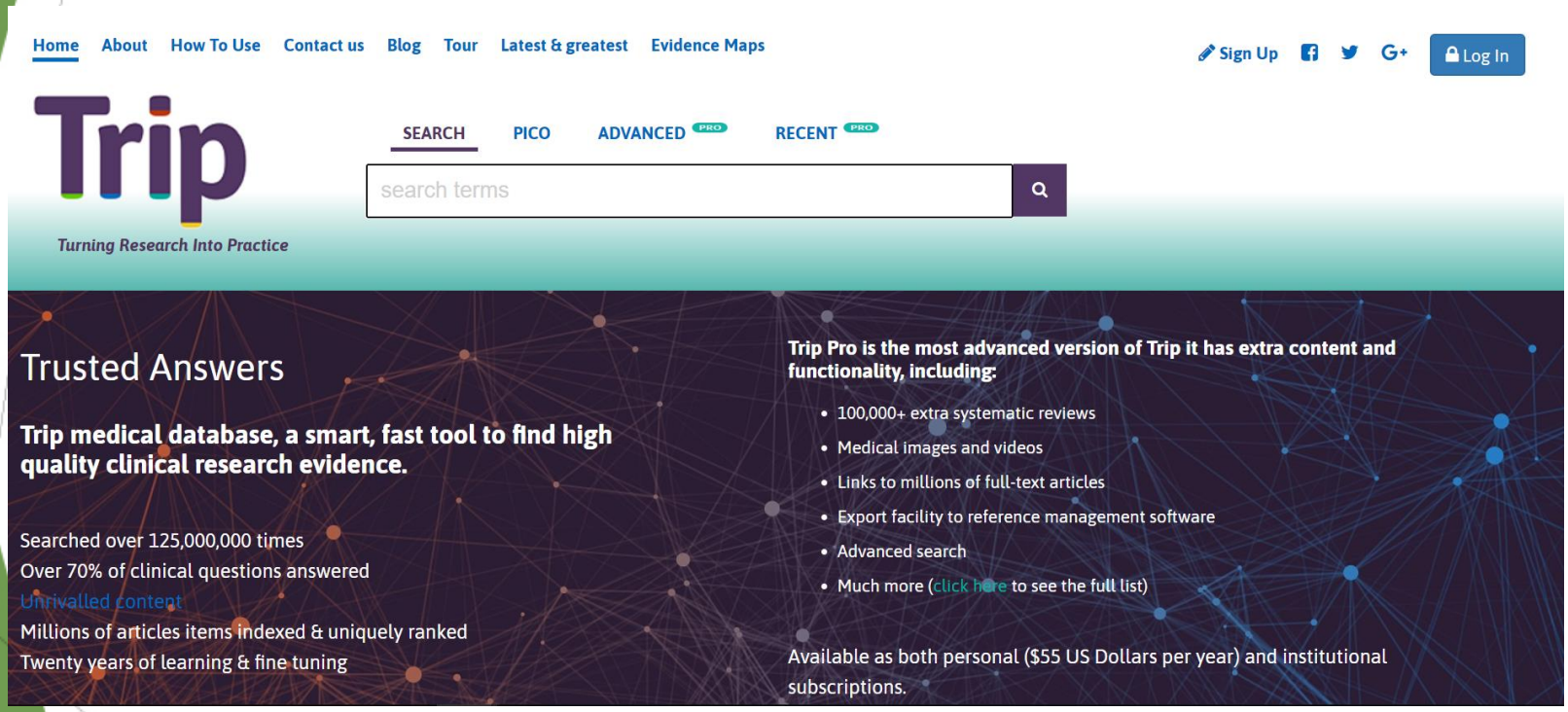
2.3. Information sources and resources



https://www.tripdatabase.com/

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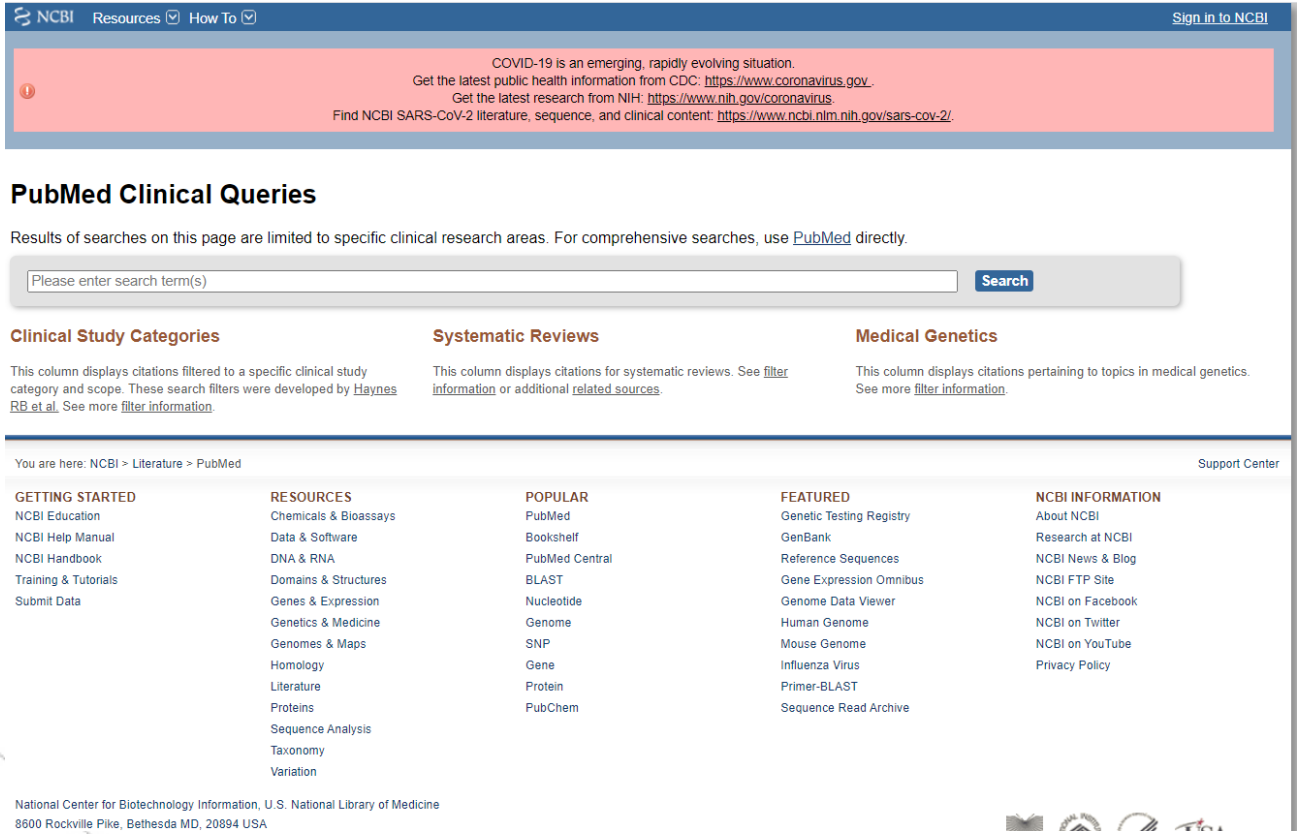
2.3. Information sources and resources



https://www.ncbi.nlm.nih.gov/pubmed/clinical/

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2.3. Information sources and resources

GENERAL/MULTIDISCIPLINARY RESOURCES

- Centers for Disease Control and Prevention
  Various resources available from the CDC
- ClinicalKey
  ClinicalKey is a clinical search engine that supports clinical decisions by making it easier to find and apply relevant knowledge from books, journals, guidelines, videos, patient education materials, and other sources.
- Haz-Map
  An occupational health database designed for health and safety professionals and for consumers seeking information about the adverse effects of workplace exposures to chemical and biological agents.
- HealthReach
  Find multilingual, multicultural health information and patient education materials about health conditions and wellness topics
- MedlinePlus
  MedlinePlus is the National Institutes of Health's Web site for patients and their families and friends. Produced by the National Library of Medicine, the world's largest medical library, it brings you information about diseases, conditions, and wellness issues in easily understandable language.
- MEDLINE via Ovid
  The U.S. National Library of Medicine® (NLM) premier bibliographic database that contains more than 23 million references to journal articles in life sciences with a concentration on biomedicine.
- Merck Manual of Diagnosis and Therapy
  Links to both the professional and consumer versions of this comprehensive medical resource
- PubMed
  PubMed comprises more than 28 million citations for biomedical literature from MEDLINE, life science journals, and online books.
- Scopus
  The largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings
- Web of Science
  Citation database with multidisciplinary coverage of journals in the sciences, social sciences, and arts and humanities. Indexes the journal literature and tracks article citation histories.

https://researchguides.dartmouth.edu/c.php?g=877404

Title:

Does evidence-based practice improve patient outcomes? An analysis of a natural experiment in a Spanish hospital.

Suggested running title:

Does evidence-based practice improve patient outcomes?

Authors:

Jose I. Emparanza
Juan B. Cabello
Amanda J. E. Burls (corresponding author)

Emparanza J.I., Director of the Unidad de Epidemiología Clínica
Hospital Universitario Donostia
Doctor Begiristain Kalea 117
20080 Donostia
San Sebastián
Gipuzkoa
Spain
Email: JOSEIGNACIO.EMPARANZA@osakidetza.net

Cabello J. B., Consultant Cardiologist
Hospital General Universitario de Alicante
Calle Pintor Baeza
Alicante 03010
Spain
Email: jbcabello@redcaspe.org

Burls A. J. E., Professor of Public Health
School of Health Sciences
City University London
London EC1V 0HB
UK
Email: Amanda.Burls.1@city.ac.uk
Telephone: +44 207 0405409
Mobile: +44 7970 271743

Keywords

Evidence-based practice; evidence-based health care; evidence-based medicine; service evaluation; natural experiment; service reorganization; #EBPimpact

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Abstract

Background

Evidence-based practice (EBP) is widely promoted, but does EBP practice produce better patient outcomes? We report a natural experiment when part of the internal medicine service in a hospital was reorganized in 2003 to form an EBP unit, the rest of the service remaining unchanged. The units attended similar patients until 2012 permitting comparisons of outcomes and activity.

Methods

We used routinely collected statistics (2004-11) to compare the two different methods of practice and test whether patients being seen by the EBP unit differed from standard practice (SP) patients. Data were available by doctor and year. To check for differences between the EBP and SP doctors prior to reorganization, we used statistics from 2000-2003. We looked for changes in patient outcomes or activity following reorganization and whether the EBP unit was achieving significantly different results from SP. Data across the periods were combined and tested using Mann-Whitney.

Results

No statistically significant differences in outcomes were detected between the EBP and the SP doctors prior to reorganization.

Following the unit's establishment, the mortality of patients being treated by EBP doctors compared to their previous performance dropped from 7.4% to 6.3% ($P<0.02$) and length of stay from 9.15 to 6.01 days ($P=0.002$). No statistically significant improvements were seen in SP physicians' performance.

No differences in the proportion of patients admitted or their complexity between the services were detected. Despite this, EBP patients had a clinically significantly lower risk of death 6.27% vs 7.75% ($P<0.001$) and a shorter length of stay 6.01 vs 8.46 days ($P<0.001$) than SP patients. Readmission rates were similar: 14.4% (EBP); 14.5% (SP).

EBP doctors attended twice as many patients/doctor as SP doctors.

Conclusion

The EBP unit was associated with better patient outcomes and more efficient performance than achieved by the same physicians previously or by SP concurrently.

EXAMPLE

Pre-Assessment

30 years old male with weight loss due to poor appetite

Patient ask: how much MSG do I need to eat to increase my appetite?

My mom said bla bla bla bla

EXAMPLE

ASK

P	adult male with poor appetite
I	MSG
C	No MSG
O	Food intake – increase????

- **Question:** In individuals with poor appetite. Do MSG containing foods compared to foods without MSG increase food intake?

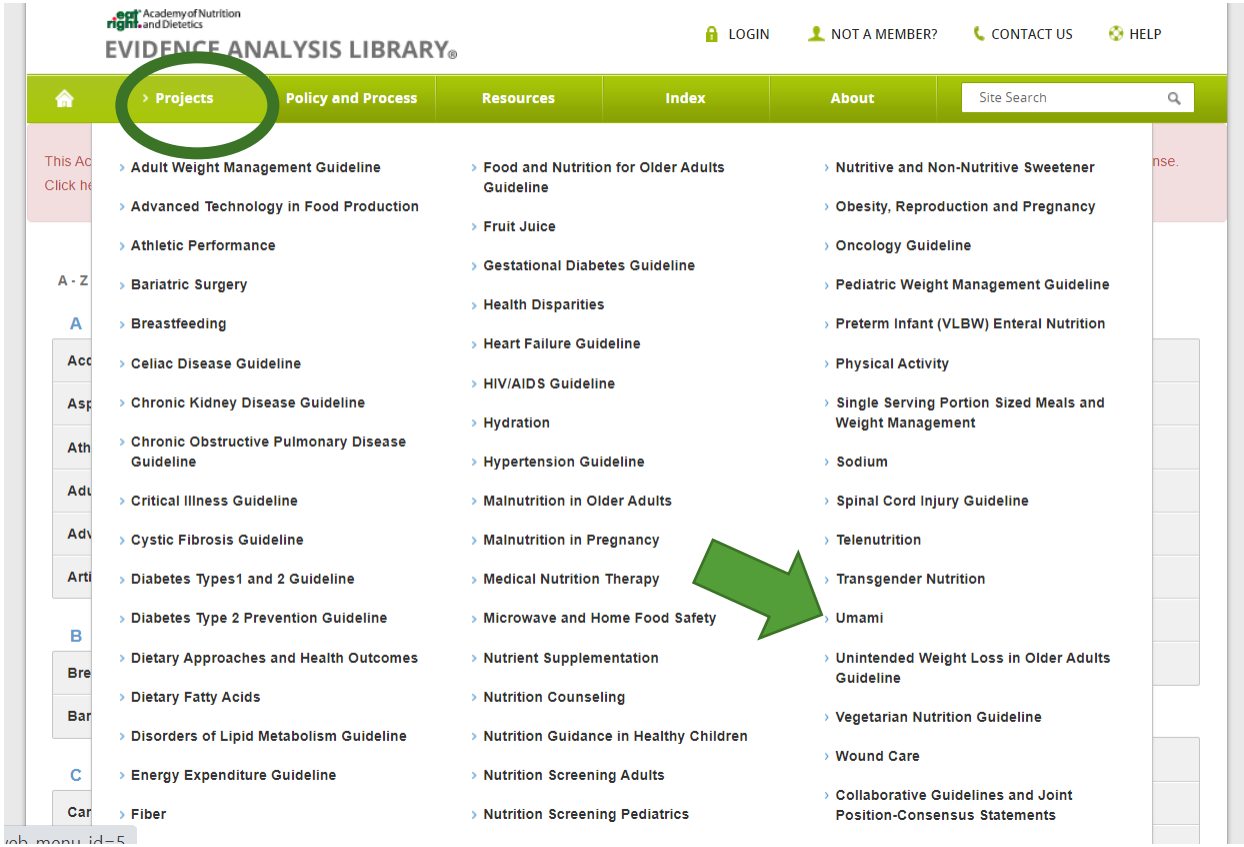
EXAMPLE

ACQUIRE

1. Evidence Analysis Library (ACEND)
2. Nutrition Evidence Library (USDA)
3. Turning Research Into Practice
4. PUBMED / Primary Science

EXAMPLE

ACQUIRE



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EXAMPLE

APPRAISE

Umami

UM: USE OF UMAMI IN REGULATION OF APPETITE (2014)

Basic Research

In adults and older adults, does consuming foods with umami compounds (such as MSG) change intake of those foods?

− **CONCLUSION**

Evidence suggests there is no clear association between consumption of foods with umami compounds (such as MSG) and change in intake of those foods.

+ **GRADE:** II

+ **EVIDENCE SUMMARY:** Quantity of food intake evidence summary

+ **SEARCH PLAN AND RESULTS:** UM: Use of Umami in Regulation of Appetite 2014

In adults, is consumption of foods with umami compounds (such as MSG) associated with changes in appetite-related sensations of hunger and fullness?

+ **CONCLUSION**

+ **GRADE:** II

+ **EVIDENCE SUMMARY:** Umami and Fullness ES

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EXAMPLE

APPLY

- Patient with weight loss secondary to poor appetite
  - Evidence suggests there is no clear association between consumption of foods with umami compounds (such as MSG) and change in intake of those foods
  - Look for other options
- Assessment: monitor appetite, record food intake and weight

Class Workshop

Pre-assessment:

My son, 5 years old, has recurrent flu

I google and found that vitamin C prevent and treat colds.

How much vitamin C should I take?