

Screening & selection of included studies

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Outline

- Inclusion & exclusion criteria
- Different stages of screening
- Flow chart
- Workshop

Remember PICOCS from this morning?

This is the basis of your inclusion/exclusion criteria

- **P**opulation
- **I**ntervention
- **C**omparison
- **O**utcome
- **C**ontext
- **S**tudy design



And

- Dates of publication
- Language (even if you are multi-lingual be honest if there is an English language bias)

So many things you can include...

- **Populations:** children, adults, those with illness/not, ethnic backgrounds etc etc
- **Interventions:** very specific named programme or broad
 - E.g. National Literacy Mission in India, or all literacy programmes
- **Outcomes:** health, illness, economic, employment etc
- **Context:** different countries, home, hospital, rural, urban
- **Study designs:** RCTs, cohort studies, controlled studies, uncontrolled, interrupted time series etc etc

Risk of trying to include everything



So many things you can exclude...

- For example, only including RCTs may result in an 'empty review'
 - Quick and easy...but of little use



BIS-BLM005079 - (c) - Jetta Productions

Deciding inclusion/exclusion criteria

- These need to be pre-specified in the review protocol for each aspect of PICOCS
- Some changes may be necessary during the review but these should be avoided if possible

Clearly list inclusion/exclusion criteria for screening

- What is essential for inclusion
- For example, for inclusion the study must be/report:

	Yes	No (then exclude)
Evaluation of housing improvement (as defined in the protocol)		
Have a control group		
Follow a cohort of participants		
Conducted since 1980		
Conducted in LMIC		
Assess health outcomes at more than one time point		
Include children under 16 years		

Borderline criteria

- Part of study is relevant
 - For example review is of children under 16 years only but study includes adults and children
- Are data suitable for review?
 - Are they reported separately?
 - Age groups 10-15 & 15-20
 - Make a decision about how useful available data are
- This should be decided in the protocol before the review is done.

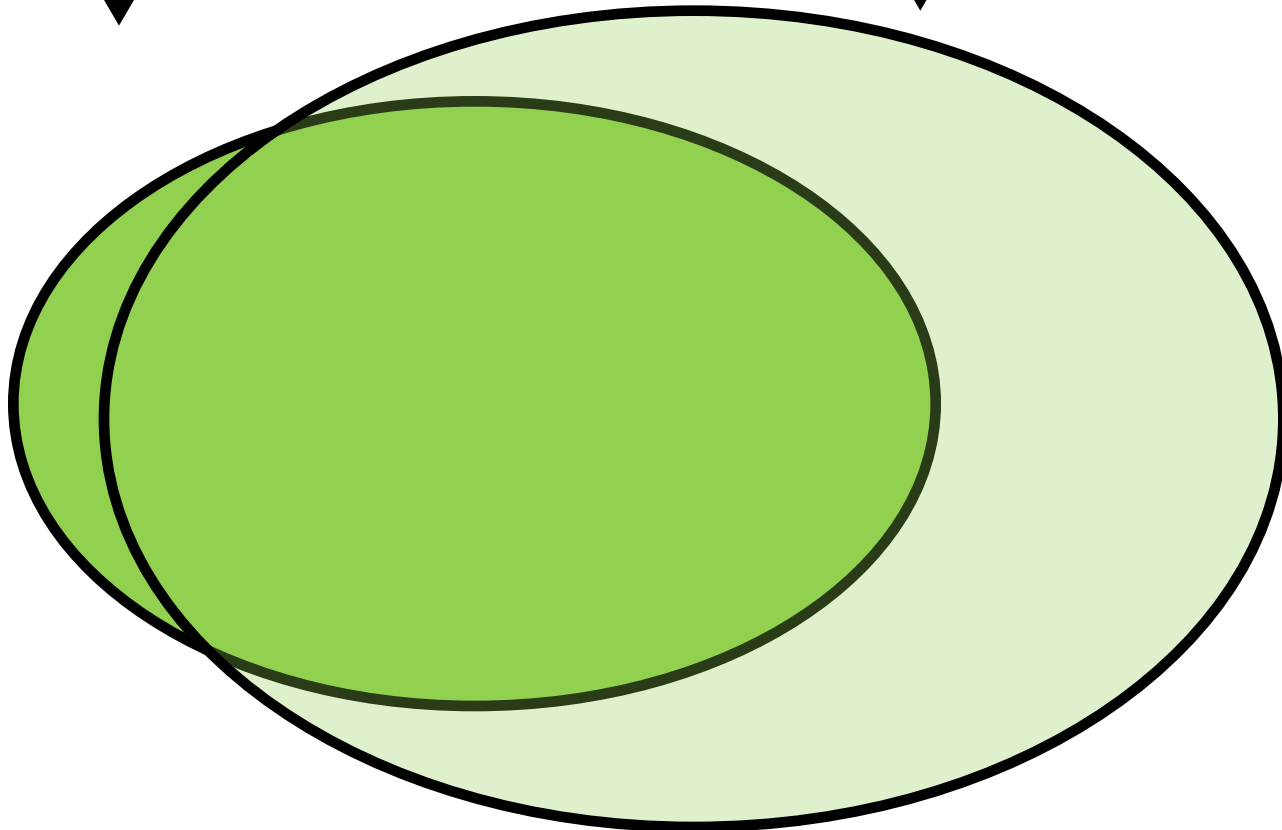
Screening

Inclusion and exclusion criteria informs the search strategy but they are not identical

Inclusion/exclusion criteria



Search strategy



Inclusion and exclusion criteria informs the search strategy but they are not identical

Inclusion/exclusion criteria



- **P**opulation
- **I**ntervention
- **C**omparison
- **O**utcome
- **C**ontext
- **S**tudy design

- Dates
- Language

Inclusion and exclusion criteria informs the search strategy but they are not identical

Search strategy



- Searches for reviews of complex interventions often need to be very “sensitive” rather than “specific” so large number of hits to screen, sometimes 20,000 hits!

Some of the PICOCS criteria can be difficult to search for in some circumstances.

E.g. **C**omparisons, **C**ontext and **S**tudy designs (unless RCTs or systematic reviews).

Dates, language, electronic databases and other sources are crucial.

Four stages of screening

Health impacts of increasing employee participation in workplace decision-making (OECD countries)

65282
search hits



733
retrieved



18
Selected for
review

IDENTIFIED

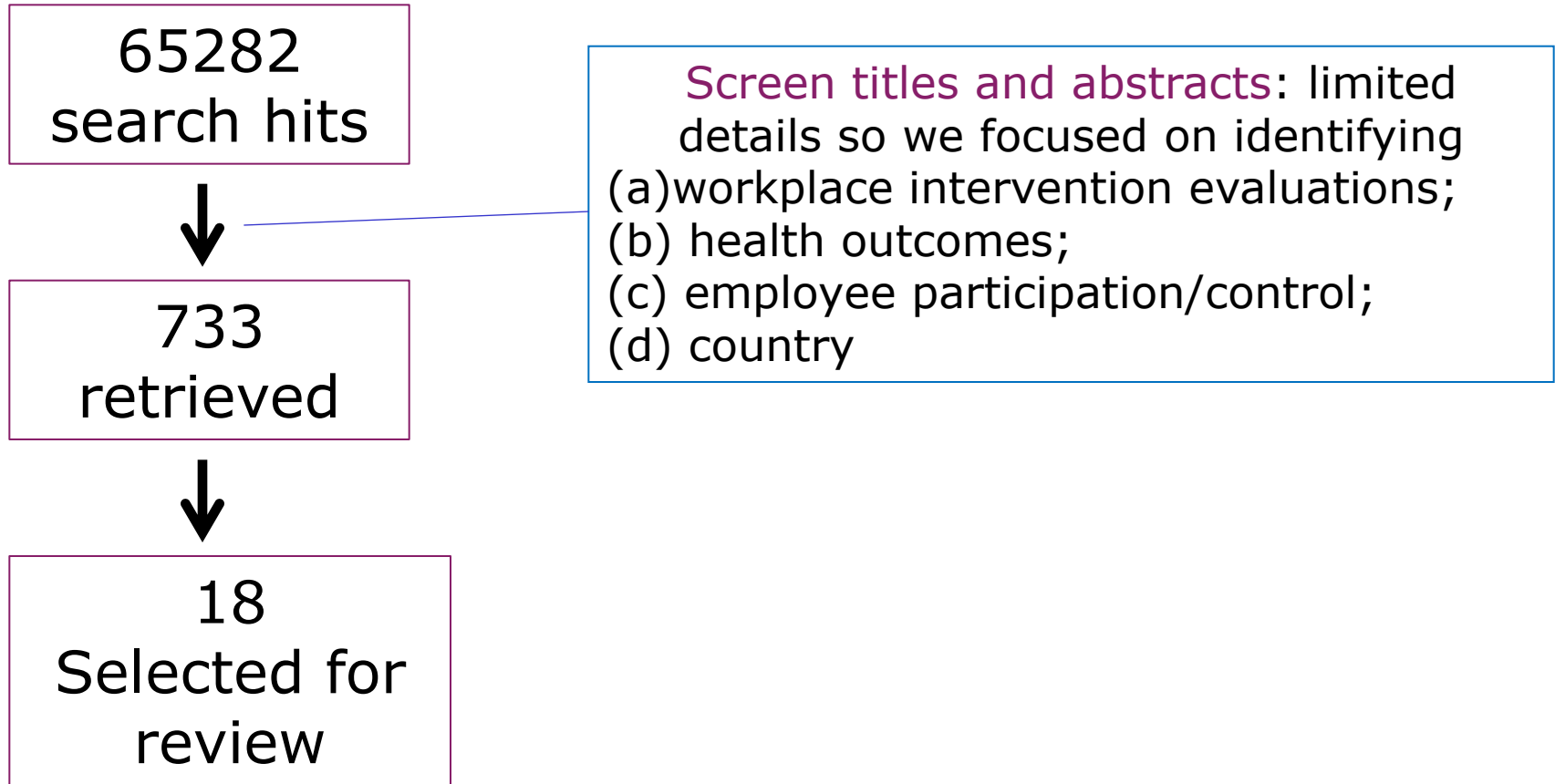
SCREENED: remove duplicates and those obviously not relevant (based on title alone)

ELIGIBLE: detailed screen of full text to check that study meets all inclusion criteria

INCLUDED

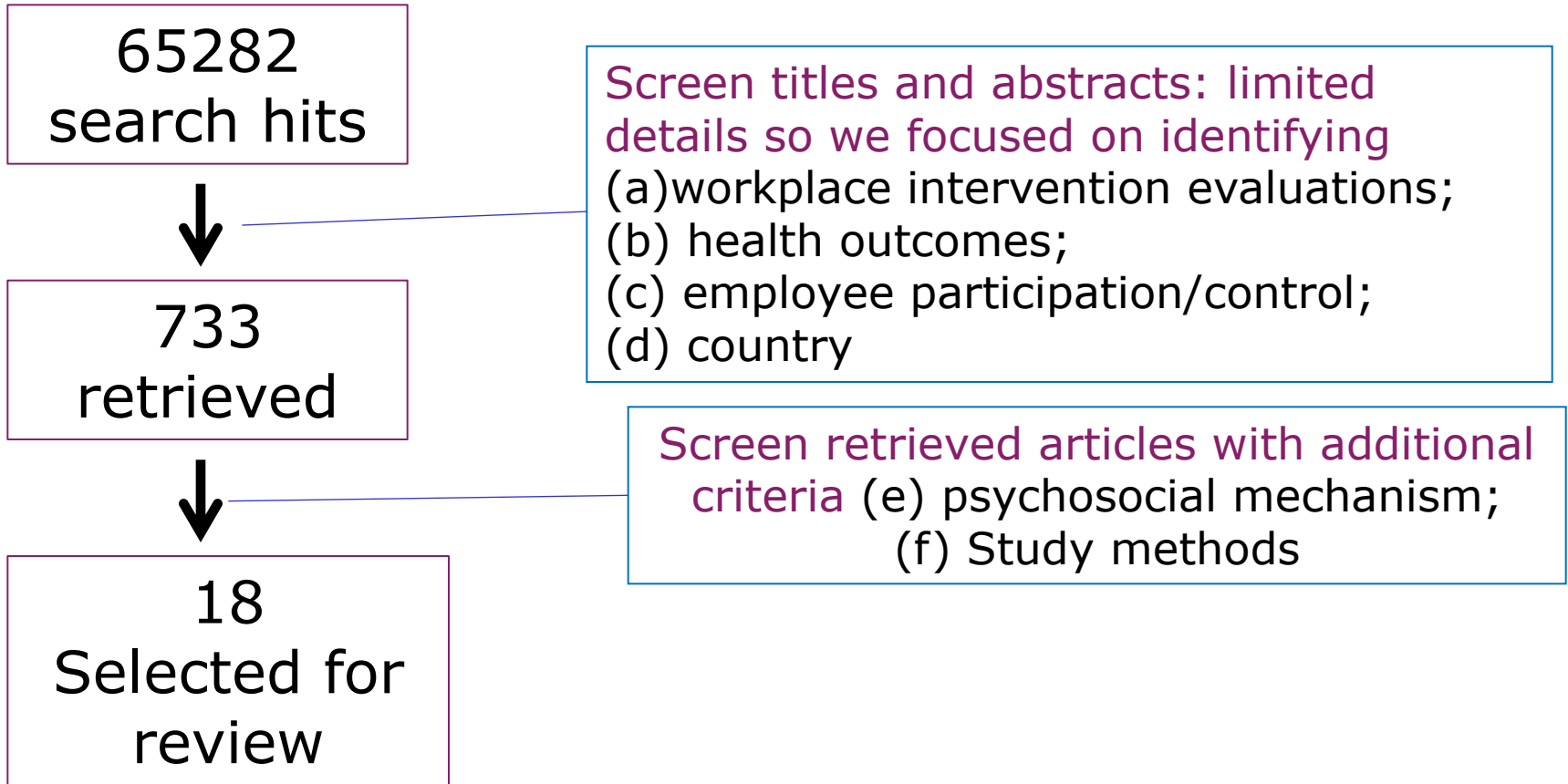
Screening process:

Health impacts of increasing employee participation in workplace decision-making (OECD countries)



Screening process:

Health impacts of increasing employee participation in workplace decision-making (OECD countries)



Screening process

65282
search hits



733
retrieved



18
Selected for
review

How many!!

Sometimes a huge number of hits is difficult to avoid

Tips for screening include

- 1) One person can screen the obviously irrelevant titles/abstracts- or perhaps one person does them all and another does a random sample
- 2) After that, 2 people screen the remaining titles/abstracts independently

Double screening

- Should be conducted by two independent reviewers
 - disagreements resolved by discussion between reviewers and possible with review team
- Cohens Kappa statistic to measure disagreement
 - Not often done: reflects number of studies debate over rather than key issues emerging around inclusion/exclusion criteria
 - Kappa doesn't reflect impact of influence of inclusion/exclusion of a particular study
 - Better to identify key emerging issues of disagreement
 - May need to refine incl/excl criteria: record in protocol amendment section

Screening process

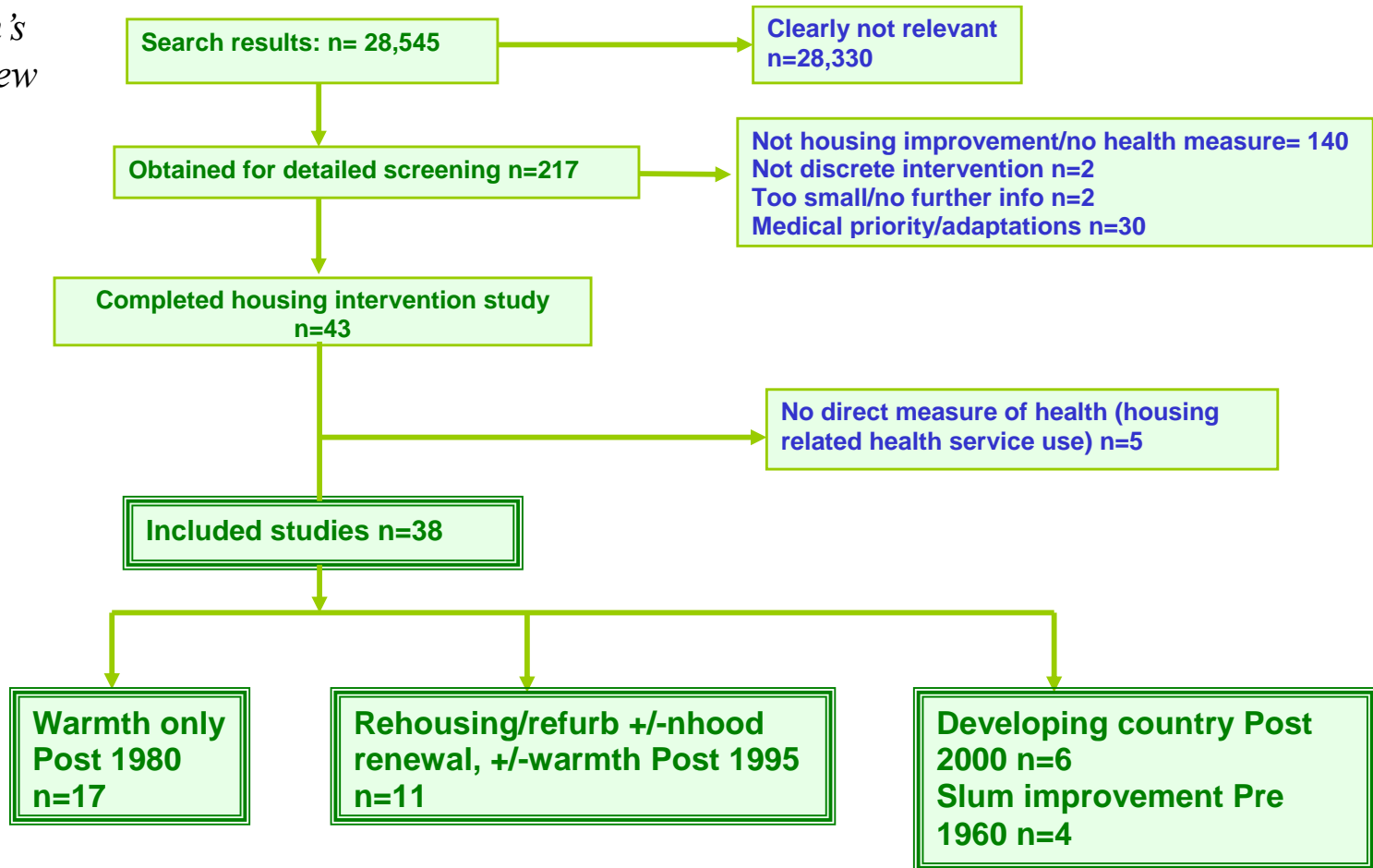
- The screening process often involves an escalation of inclusion/exclusion criteria at each stage
 - Easy to remove obviously not relevant studies at first round
- There will be some occasions when you can't decide whether or not to include a title/abstract
 - Better to **include** at this point and decide once you have the full text of the paper
- Record any changes to inclusion/exclusion criteria are
 - needs clear justification (and agreed with review group)

Screening

- Screening is key stage in selection of included studies
 - Like recruitment of participants to study, .e.g. response rate
- Systematic review must be transparent & replicable
 - Keep record of changes to inclusion/exclusion criteria
 - Prepare flow chart
 - Keep record of studies which are screened in detail with reasons for exclusion

Example of a review flowchart showing study selection (Essential for publication of review)

H. Thomson's housing review



Also provide list of excluded studies as appendix

List of excluded studies

- **Not housing intervention (most often reports of associations at single time point) (n=4)**

— What is the impact of environmental housing conditions on the health and well-being of children? (SCARE briefing) (<http://www.scie.org.uk/publications/briefings/files/scare19.pdf>, accessed 14/08/06). London, Social Care Institute for Excellence.

Bornehag, C. G., J. Sundell, et al. (2005). "Association between ventilation rates in 390 Swedish homes and allergic symptoms in children." Indoor Air **15**(4): 275-80.

Kamien, M. (1978). "Housing and health in an aboriginal community in Australia." Ekistics **45**(267): 65-69.

Nayar, K. R. (1997). "Housing amenities and health improvement: some findings." Econ. Polit. Week. **32**(22): 1275-1279.

- **No assessment of changes in health outcomes (n=6)**

(1977). "... as healthy as all the others". Living in concrete buildings. Bauwirtschaft. Ausgabe B **31**(6): 207-208.

(1978). An exploratory project on heating for the elderly. United Kingdom, Department of the Environment.

Aldakheel, R. M. (1996). "Residents' satisfaction with public housing: The case of Buraidah Public Housing Development in Saudi Arabia." Dissertation Abstracts International Section A: Humanities & Social Sciences **56**(8-A): 2907.

Altus, D. E. and R. M. Mathews (2002). "Comparing the satisfaction of rural seniors with housing co-ops and congregate apartments: is home ownership important?" Journal of Housing for the Elderly **16**(1/2): 39-50.

Bordet, J. (1994). Evaluation du projet local de maintien dans le milieu de vie, SH/CSTB. Paris, France: 130.

Lawrence, R. J. (1981). "Postoccupancy evaluation of medium density housing in Cherry Hinton, UK." Ekistics **48**(287): 157-165.

- **Not primary study of housing improvement (includes reviews & commentaries) (n=1)**

(2003). "Recommendations to promote healthy social environments." American Journal of Preventive Medicine **24**(Suppl3): 21-24.

Some advantages of Endnote or Reference Manager

- You can de-duplicate articles retrieved from different databases
- You can keep track of the number of documents identified and screened from different sources (use 'custom' or spare fields to record information)
- You can record reasons for exclusion on custom fields
- Once you get into it, you can get through several thousand citations in a day.

Endnote tips

EndNote X3 - [Main Money Matters library Copy 210313.enl]

File Edit References Groups Tools Window Help

Annotated Quick Search

My Library	Author	Title	Journal/Secondary Title	Label	Custom 5	Custom 6
All References (6081)	Leger	THE COST OF SLEEP-RELATED ACCIDENTS - A REPORT FOR THE NATIONAL-COMMISSION-ON-SLEEP-DISO...	Sleep	1st WOS Scopus search		
Unfiled (1)	Leger	Medical and socio-professional impact of insomnia	Sleep	1st WOS Scopus search		
Trash (0)	Leger	Prevalence of insomnia in a survey of 12 778 adults in France	Journal of Sleep Research	1st WOS Scopus search		
My Groups	Lehman	The well-being of chronic mental patients. Assessig their quality of life	Archives of General Psychiatry	1st WOS Scopus search		
3rd highly cited (156)	Lehman	Improving employment outcomes for persons with severe mental illnesses	Archives of General Psychiatry	1st WOS Scopus search		
AA Forwarde... (303)	Lehman	Practice Guideline for the Treatment of Partients with Schizophrenia, Second Edition	American Journal of Psychiatry	contains 'income' 1st ...		
citation tracking (4)	Lehman	Chronic mental patients: The quality of life issue	American Journal of Psychiatry	1st WOS Scopus search		
Cited papers (35)	Lehman	Long-Term Effects of Losing a Spouse or Child in a Motor Vehicle Crash	Journal of Personality and Social Psychology	contains 'income' 1st ...		
Econlit (60)	Lehnert	An equilibrium-based model for measuring environmental radon using charcoal canisters	Health Physics	WOS SCOPUS SEAR...		
Econlit duplicat... (27)	Lehnigk	Noticeable placebo response in clinical studies investigating efficacy of different preparations for subcutaneous specifi...	Allergy. European Journal of Allergy and Clinica...	WOS SCOPUS SEAR...		
Econlit retrieved (33)	Leigh	Occupation, income, and education as independent covariates of arthritis in four national probability samples	Arthritis and Rheumatism	MB PHD	Retrieved	
extracted (147)	Leigh	Occupational injury and illness in the United States - Estimates of costs, morbidity, and mortality	Archives of Internal Medicine	"review" 1st WOS Sco...		
forwarded pap... (74)	Leigh	Occupational injury and illness in the United States: Estimates of costs, morbidity, and mortality	Archives of Internal Medicine	"review" 1st WOS Sco...		
PsychInfo (12)	Leino	DEPRESSIVE AND DISTRESS SYMPTOMS AS PREDICTORS OF LOW-BACK-PAIN, NECK-SHOULDER PAIN, A...	Pain	1st WOS Scopus search		
rejected (5060)	Leith	Why do bad moods increase self-defeating behavior? Emotion, risk taking, and self-regulation	Journal of Personality and Social Psychology	1st WOS Scopus search		
Retrieved (371)	Lemanski	Moving up the Ladder or Stuck on the Bottom Rung? Homeownership as a Solution to Poverty in Urban South Africa	International Journal of Urban and Regional Re...	WOS SCOPUS SEAR...		
waiting to be re... (18)	Lemelin	Life-course socioeconomic positions and subclinical atherosclerosis in the multi-ethnic study of atherosclerosis	Social Science & Medicine	income fp	Retrieved	
Online Search	Lemstra	Health disparity by neighbourhood income	Canadian Journal of Public Health-Revue Cana...	Citation search		
Library of Congr... (0)	Lennon	RELATIVE FAIRNESS AND THE DIVISION OF HOUSEWORK - THE IMPORTANCE OF OPTIONS	American Journal of Sociology	1st WOS Scopus search		
LISTA (EBSCO) (0)	Lenzlinger	The duality of the inflammatory response to traumatic brain injury	Molecular Neurobiology	"mechanis" "mediat" "...		
PubMed (NLM) (0)	Leon	Alzheimer's Disease Care: Costs and Potential Savings	Health Affairs	1st WOS Scopus search		
Web of Science ... (0)	Leonard	The epidemiology of mental retardation: Challenges and opportunities in the new millennium	Mental Retardation and Developmental Disabili...	"review" 1st WOS Sco...		
more...	Leonard	Gender and the risk environment for people in Ottawa who smoke crack	Canadian Journal of Infectious Diseases and M...	WOS SCOPUS SEAR...		
EndNote Web	Lepl+age	The problem of quality of life in medicine	Journal of the American Medical Association	1st WOS Scopus search		
transfer...	Lerman	ADVERSE PSYCHOLOGIC CONSEQUENCES OF POSITIVE CYTOLOGIC CERVICAL SCREENING	American Journal of Obstetrics and Gynecology	WOS SCOPUS SEAR...		
Find Full Text	Lerner	THE PREVALENCE OF QUESTIONABLE METHODS OF CANCER-TREATMENT IN THE UNITED-STATES	Ca-a Cancer Journal for Clinicians	contains 'income' 1st ...		
	Lerner	The prevalence of questionable methods of cancer treatment in the United States	Ca-A Cancer Journal for Clinicians	WOS SCOPUS SEAR...		
	Lesage	Development and validation of the RQC: a daily contact log for ACT and ICM teams	Epidemiologia e psichiatria sociale	WOS SCOPUS SEAR...		
	Leslie	FUMONISIN B1 PRODUCTION BY STRAINS FROM DIFFERENT MATING POPULATIONS OF GIBBERELLA-FUJIKU...	Phytopathology	1st WOS Scopus search		
	Leszek	Elder abuse in Poland	European Psychiatry.Conference. 19th Europe...	WOS SCOPUS SEAR...		
	Lethbridge	Chronic poverty and childhood asthma in the maritimes versus the rest of Canada	Canadian Journal of Public Health-Revue Cana...	Citation search		
	Lettau	Resurrecting the (C)CAPM: A cross-sectional test when risk premia are time-varying	Journal of Political Economy	contains 'income' "weal...		

Showing 6081 of 6081 references.

Preview Search

Leigh, J. P. and J. F. Fries (1991). "Occupation, income, and education as independent covariates of arthritis in four national probability samples." *Arthritis and Rheumatism* 34(8): 984-995.

Abstract 10.1002/art.1780340808.abs The strong associations between education level and prevalence and severity of arthritis have recently been investigated, with some suggestion that the relationships might be causal. Data from 4 national probability samples were analyzed, in which occupation and income were measured currently and prior to the development of arthritis. These data indicate that previous studies overestimated the strength of the association between schooling and arthritis because income and, especially, occupation were not analyzed as separate covariates. The overestimate appears to be especially high for persons currently employed, for men, and for persons employed in dangerous jobs. Health policy strategies directed toward reducing arthritis rates require not simply a focus on education, but the additional socioeconomic status dimensions of income and occupational safety and health.

Endnote tips

The screenshot shows the EndNote X3 interface with a list of references. A callout box contains the following text:

edit/output style/open style manager
Tick 'Annotated', exit style manager
Then edit/output style – tick annotated

Author	Title	Journal/Secondary Title	Label	Custom 5
Leger	THE COST OF SLEEP-RELATED ACCIDENTS - A REPORT FOR THE NATIONAL-COMMISSION-ON-SLEEP-DISO...	Sleep	1st WOS Scopus search	
Leger	Medical and socio-professional impact of insomnia	Sleep	1st WOS Scopus search	
Leger	Prevalence of insomnia in a survey of 12 778 adults in France	Journal of Sleep Research	1st WOS Scopus search	
Lehman	The well-being of chronic mental patients. Assessig their quality of life	Archives of General Psychiatry	1st WOS Scopus search	
Lehman	Improving employment outcomes for persons with severe mental illnesses	Archives of General Psychiatry	1st WOS Scopus search	
Lehman	Practice Guideline for the Treatment of Partients with Schizophrenia, Second Edition	American Journal of Psychiatry	contains 'income' 1st ...	
Lehman	Chronic mental patients: The quality of life issue	American Journal of Psychiatry	1st WOS Scopus search	
Lehman	Long-Term Effects of Losing a Spouse or Child in a Motor Vehicle Crash	Journal of Personality and Social Psychology	contains 'income' 1st ...	
Lehnert	An equilibrium-based model for measuring environmental radon using charcoal canisters	Health Physics	WOS SCOPUS SEAR...	
Lehnigk	Noticeable placebo response in clinical studies investigating efficacy of different preparations for subcutaneous specifi...	Allergy. European Journal of Allergy and Clinica...	WOS SCOPUS SEAR...	
Leigh	Occupation, income, and education as independent covariates of arthritis in four national probability samples	Arthritis and Rheumatism	MB PHD	Retrieved
Leigh	Occupational injury and illness in the United States - Estimates of costs, morbidity, and mortality	Archives of Internal Medicine	"review" 1st WOS Sco...	
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Leino	DEPRESSIVE AND DISTRESS SYMPTOMS AS PREDICTORS OF LOW-BACK-PAIN, NECK-SHOULDER PAIN, A...	Pain	1st WOS Scopus search	
Leith	Why do bad moods increase self-defeating behavior? Emotion, risk taking, and self-regulation	Journal of Personality and Social Psychology	1st WOS Scopus search	
Lemanski	Moving up the Ladder or Stuck on the Bottom Rung? Homeownership as a Solution to Poverty in Urban South Africa	International Journal of Urban and Regional Re...	WOS SCOPUS SEAR...	
Lemelin	Life-course socioeconomic positions and subclinical atherosclerosis in the multi-ethnic study of atherosclerosis	Social Science & Medicine	income fp	Retrieved
Lemstra	Health disparity by neighbourhood income	Canadian Journal of Public Health-Revue Cana...	Citation search	
Lennon		American Journal of Sociology	1st WOS Scopus search	
Lenzlinger		Molecular Neurobiology	"mechanis" "mediat" "...	
Leon		Health Affairs	1st WOS Scopus search	
Leonard		Mental Retardation and Developmental Disabili...	"review" 1st WOS Sco...	
Leonard		Canadian Journal of Infectious Diseases and M...	WOS SCOPUS SEAR...	
Lepit...		Journal of the American Medical Association	1st WOS Scopus search	
Lerman		American Journal of Obstetrics and Gynecology	WOS SCOPUS SEAR...	
Lerner		Ca-a Cancer Journal for Clinicians	contains 'income' 1st ...	
Lerner		Ca-A Cancer Journal for Clinicians	WOS SCOPUS SEAR...	
Lesage		Epidemiologia e psichiatria sociale	WOS SCOPUS SEAR...	
Leslie		Phytopathology	1st WOS Scopus search	
Leszek		European Psychiatry.Conference. 19th Europe...	WOS SCOPUS SEAR...	
Lethbridge	Chronic pove... s maritimes versus the rest of Canada	Canadian Journal of Public Health-Revue Cana...	Citation search	
Lettau	Resurrecting the... national test when risk premia are time-varying	Journal of Political Economy	contains 'income' "weal...	

Showing 6081 of 6081 references.

Endnote tips

Highlight the relevant citations

Then

Tools / Change and Move Fields...

The screenshot displays the EndNote X3 interface. On the left, a sidebar shows a tree view of groups and references. The main window contains a list of references with columns for 'Label', 'Custom 5', and 'Custom 6'. A context menu is open over the list, with 'Change and Move Fields...' highlighted. Below the list, a preview window shows the full text of a selected citation: Luttmer, E. F. P. (2005). "Neighbors as negatives: Relative earnings and well-being." *Quarterly Journal of Economics* 120(3): 963-1002. The preview text describes a study on the relationship between relative earnings and well-being.

Label	Custom 5	Custom 6
MB PHD	Retrieved	
income fp	Retrieved	
income fp	Retrieved	ME R
WOS SCOPUS SEAR...	Retrieved	WOS
MB PHD	Retrieved	
Team y papers	Retrieved	
income fp	Retrieved	ME R
income fp	Retrieved	
Team y papers	Retrieved	
Team y papers	Retrieved	
Team y papers	Retrieved	
"mechanist" possible ...	Retrieved	
Team y papers	Retrieved	
verdict: not sure contai...	Retrieved	
MB PHD	Retrieved	
contains 'Income' 'lifec...	Retrieved	
verdict: not sure contai...	Retrieved	
income fp	Retrieved	
MB PHD	Retrieved	
International Journal of Epidemiology	Retrieved	
Social Science & Medicine	Retrieved	
International Journal of Epidemiology	Retrieved	
Social Science and Medicine	Retrieved	
Sociology of Health and Illness	Retrieved	
Journal of Epidemiology and Community Health	Retrieved	
Health Affairs	Retrieved	
Social Science and Medicine	Retrieved	
The Milbank Quarterly	Retrieved	
Journal of Epidemiology and Community Health	Retrieved	
International Journal of epidemiology	Retrieved	
Population Studies: A Journal of Demography	Retrieved	
income fp	Retrieved	
income fp	Retrieved	
Team y papers	Retrieved	
Team y papers	Retrieved	
Team y papers	Retrieved	

Preview Search - Retrieved

Luttmer, E. F. P. (2005). "Neighbors as negatives: Relative earnings and well-being." *Quarterly Journal of Economics* 120(3): 963-1002.

This paper investigates whether individuals feel worse off when others around them earn more. In other words, do people care about relative position, and does "lagging behind the Joneses" diminish well-being? To answer this question, I match individual-level data containing various indicators of well-being to information about local average earnings. I find that, controlling for an individual's own income, higher earnings of neighbors are associated with lower levels of self-reported happiness. The data's panel nature and rich set of measures of well-being and behavior indicate that this association is not driven by selection or by changes in the way people define happiness. There is suggestive evidence that the negative effect of increases in neighbors' earnings on own well-being is most likely caused by interpersonal preferences, that is, people having utility functions that depend on relative consumption in addition to absolute consumption. © 2005 by the President and Fellows of Harvard College and the Massachusetts Institute of Technology

Showing 371 of 371 references in Group. (All References: 6081)

Workshop

This workshop is based (loosely) on Gibson et al...

Welfare to work interventions and their effects on health and well-being of lone parents and their children

Task

From the lists of titles and abstracts you are given, identify those that you would 'retrieve' using my retrieval criteria.

Welfare to work interventions and their effects on health and well-being of lone parents and their children

Retrieval criteria

- **Population: lone parent families**
- **Intervention: helping/compelling parents into work**
- **Comparison:** (worry about this at retrieval stage)
- **Outcome: any health outcome**
- **Context: developed country (OECD)**
- **Study design: evaluation (quantitative, primary study)**

- **Dates of publication: any**
- **Language: English**

Note these are fictional criteria – and it is assumed that more detailed criteria would be used at retrieval stage

Welfare to work interventions and their effects on health and well-being of lone parents and their children

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- **Dates of publication: any**
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Stage 1: focus on first 5 titles/abstracts only

Which would you retrieve?

Welfare to work interventions and their effects on health and well-being of lone parents and their children

Retrieval criteria

- Population: **lone parent families**
- Intervention: **helping/compelling parents into work**
- Comparison: (worry about this at retrieval stage)
- Outcome: **any health outcome**
- Context: **developed country (OECD)**
- Study design: **evaluation (quantitative, primary study)**

- Dates of publication: **any**
- Language: **English**

Stage 2: do the remaining titles/abstracts
Which would you retrieve?