

The cost-effectiveness of school hearing screening programs: a scoping review

Michael Yong MD, Jiahe Liang, Jeromie Ballreich PhD, Jane Lea MD, Brian D Westerberg MD MHSc, Susan D Emmett MD MPH

Conflicts of interest

No conflicts of interest to declare.



Hearing loss across the lifespan

1.3
billion

2nd leading
chronic
impairment



Hearing loss causes economic burden



World Health Organization

790 billion
\$Int/year

Healthcare:
67.3 billion
\$Int/year

School hearing screening is non-uniform

Newborn screening

- Evidence for benefit
- Cost-effective



Methods




Performed according to scoping review guidelines from:



Methods - Study eligibility

Inclusion



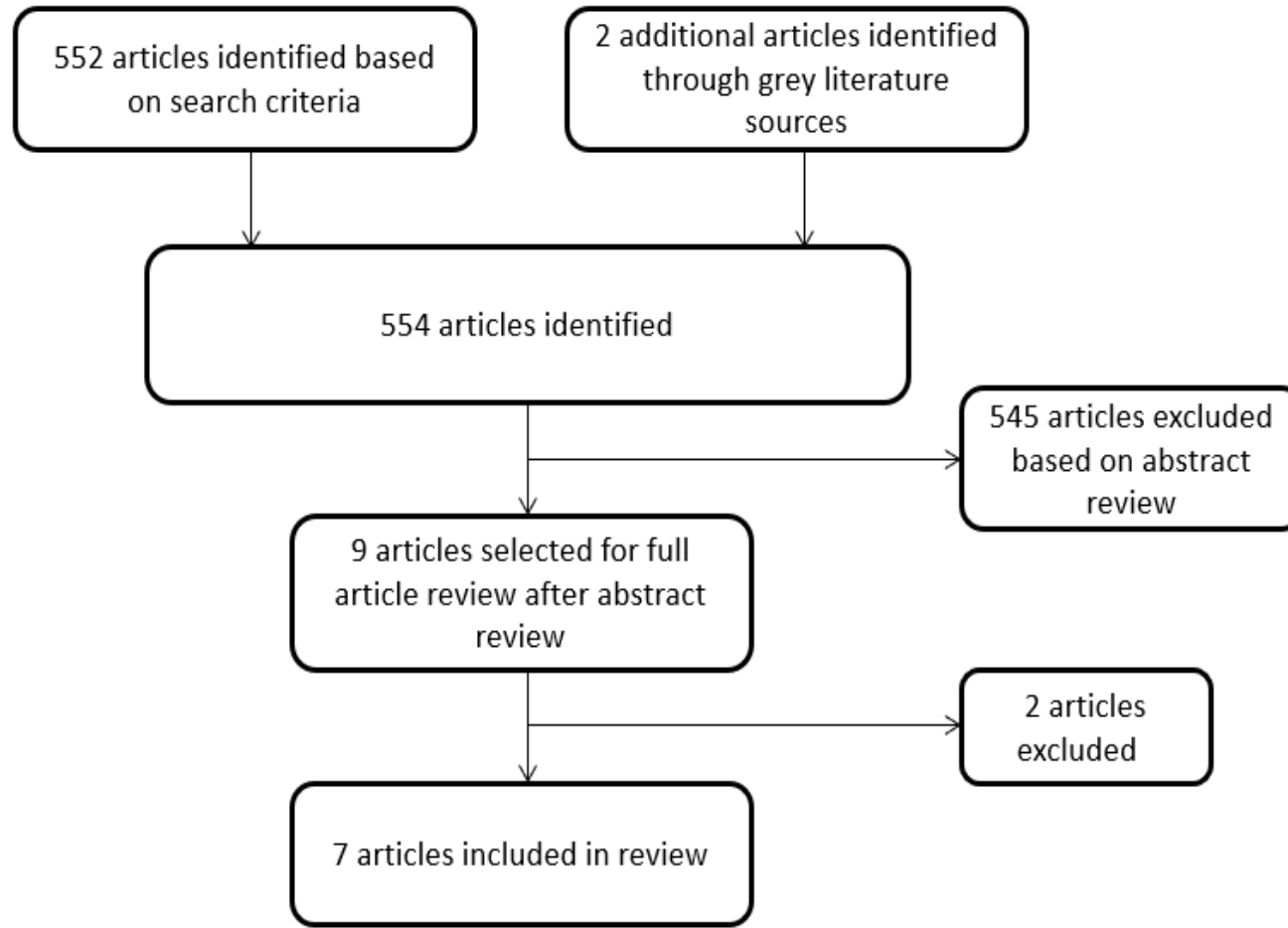
-  School aged children (4-19)
-  Screening occurring in school setting
-  Formal economic analysis performed

Methods - Outcomes

Screening protocols

- Personnel
- Setting
- Referral thresholds
- Sensitivity/specificity
- Rescreening
- Follow-up

Search strategy

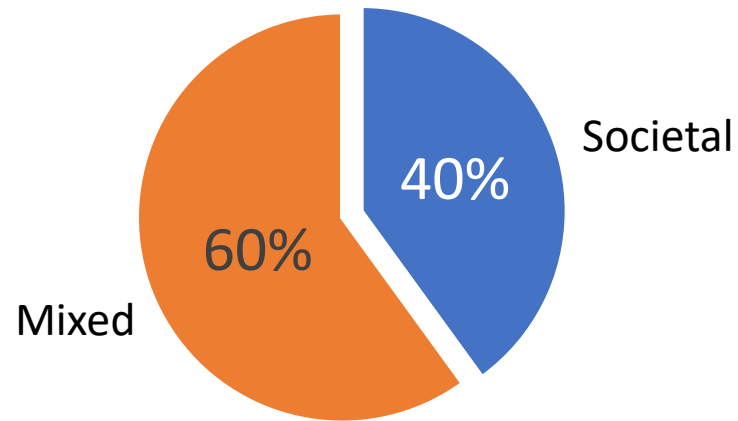


Screening protocol heterogeneity

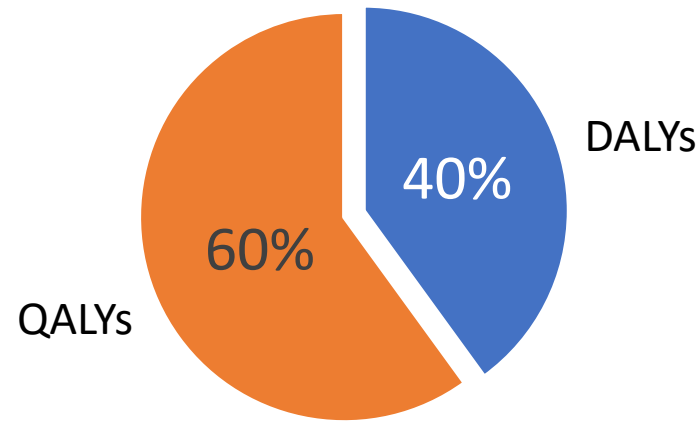
Study
Bamford (2007)
Baltussen (2009)
Baltussen (2012)
Nguyen (2015)
Fortnum (2016)

Variable economic analysis methods

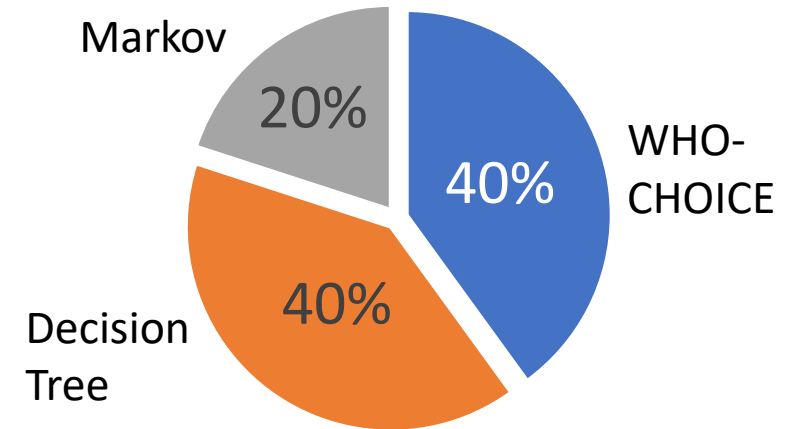
Cost perspective



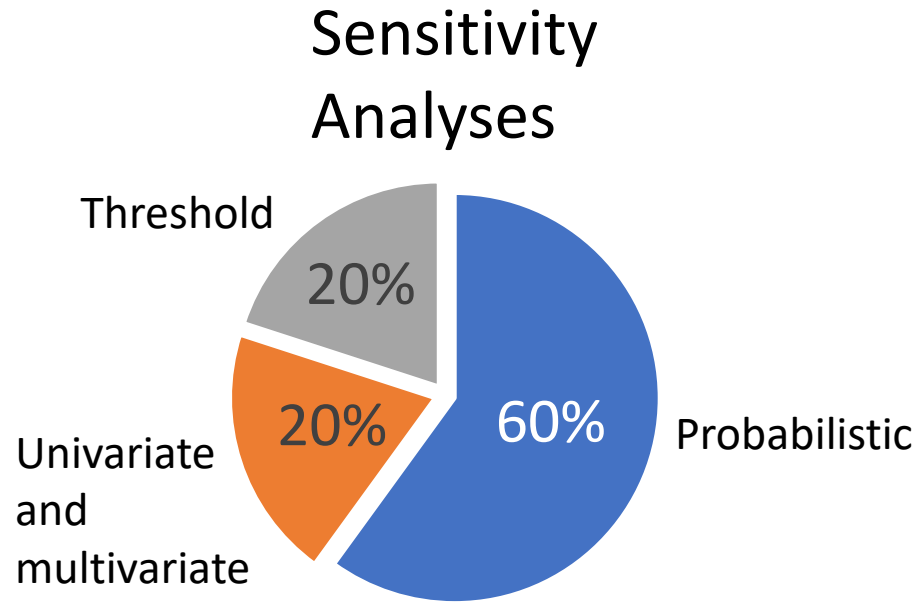
Utility measure



Models



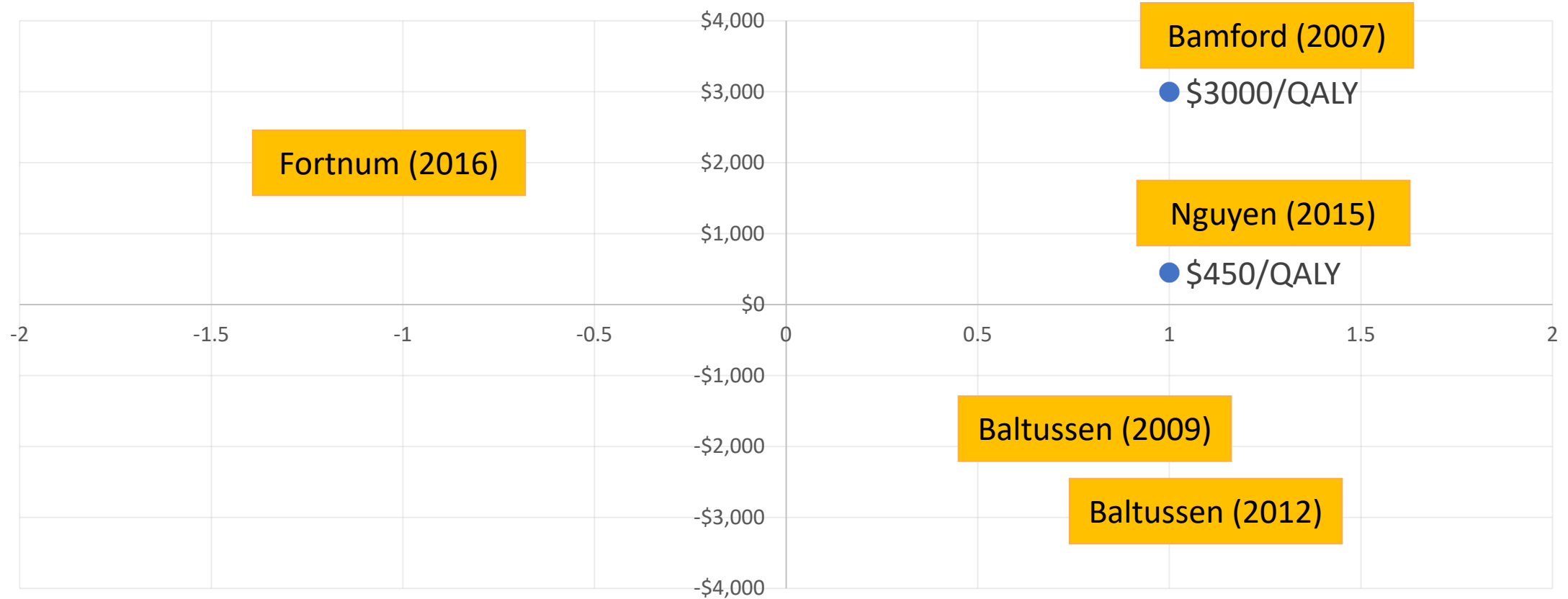
Variable economic analysis methods



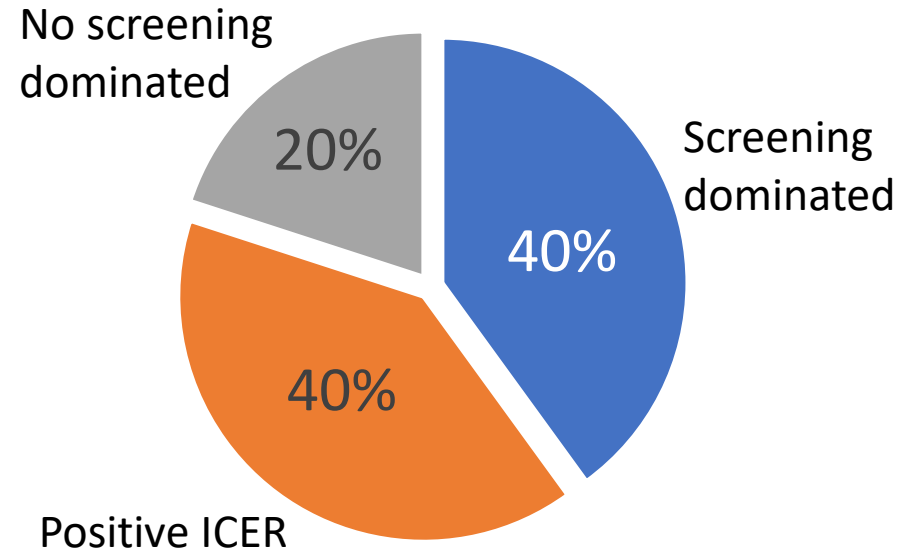
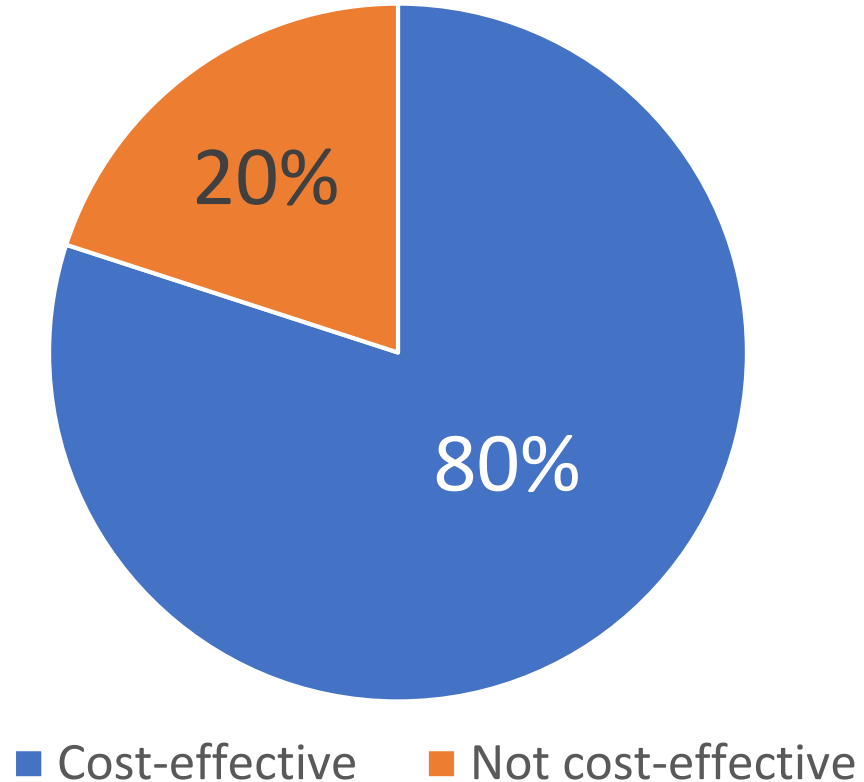
Study	Population
Bamford (2007)	School entry (age 4-6)
Baltussen (2009)	Adults and school children
Baltussen (2012)	Adults and school children
Nguyen (2015)	School children (age 3-18)
Fortnum (2016)	School entry (age 4-6)

ICER Comparisons

QALYs per USD



ICER Proportions



Study	ICER
Bamford (2007)	£2,445 / QALY
Baltussen (2009)	Screening dominated
Baltussen (2012)	Screening dominated
Nguyen (2015)	\$656 AUD / QALY
Fortnum (2016)	No screening dominated

Insufficient evidence and excessive variability



Screening

- Inconsistencies in:
 - Screening personnel
 - Screening referral criteria
 - Follow-up procedures
 - Populations being screened

Highlights

School hearing screening in certain regions is cost effective

Acknowledgements

