

The methodological quality of 98% included SR/MA published in the field of nutrition in cancer prevention was classified as 'critically low', one (1%) SR was classified as 'low' quality, and one (1%) was assessed as 'moderate'.

The Problem

The number of studies published as systematic reviews/metaanalyses (SR/MA) has increased substantially in the recent years. Our systematic research focuses on methods and the methodological quality of researches published as systematic reviews or meta-analyses (SR / MA) on the subject of nutritional interventions investigated in the prevention of cancer. Diversity is taken into account by a variety of nutritional interventions in several types of cancer. In addition, the examined SR / MAs were carried out by authors placed in different settings. Our systematic survey focuses on patient-important cancer outcomes. Results based on poor quality SR/MAs methods may be misleading for the users' of such evidence.

Methods

- MEDLINE, EMBASE and Cochrane Library from 2010,
- general population or people at risk for cancer
- any **nutritional/dietary intervention**
- any intervention or no intervention
- any **cancer incidence/mortality**
- identified as SR/MAs in the Ti/Ab/FT that included primary studies with control group (RCT and nRCT)
- calibration exercises → title and abstract screening → full text screening → extraction → assessment of methodological quality
- everytime two independent reviewers
- conflicts were resolved by discussion or by third reviewer
- The protocol was registered in PROSPERO (CRD42019121116)

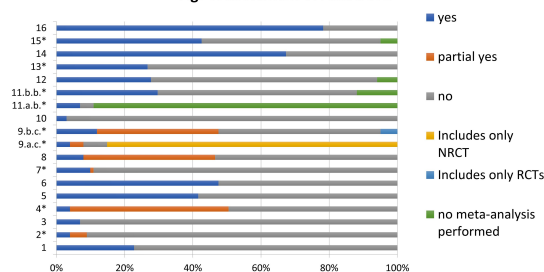
Item	Mean	Range
Number of databases searched	2.66	1 to 9
Period between search and publications [months]	10.31	1 to 31
Database searched [%]		
Medline	98.02	
Embase	55.45	
Cochrane	29.70	
Other	11.88	
Type of eligible study design [%]		
RCT	19.80	
CCT	6.93	
Cohort	93.07	
Case- control	78.22	
other	13.86	
Number of included studies in SR/MA	27.76	5 to 572
Number of patients	2,097,180	74 to 99,413,386
Number of people with an outcome for cancer outcomes	22,512	12 to 486,538
Duration of intervention [range]	3 mo to 65 years	
Number of outcomes analysed in SR/MA	2.62	1 to 23

Table. The characteristics of included studies

Key Results

- Our searches → Fig. 1
 - The characteristics of included studies → Table, Fig. 2 and 3
 - Number of 'no' responses in critical and non-critical domains (Fig. 4, critical domains are marked with an asterisk)
 - 10.9% of the published studies had answer 'yes' in 4 or more of the 7 critical domains and just one third of papers had answer 'yes' in 3 of the 7 critical domains
- Common problems:
- lack of a protocol or explicit statement that the review methods were established in advance (91%),
 - inappropriate use a comprehensive literature search strategy (89.1%)
 - lack of quality or risk of bias assessment of primary studies included in SR/MA (73.3%)
 - heterogeneity was commonly examined using Q test or I2 or both (77%)
 - the most common type of MA used was highest vs lowest consumption alone (51.5%) or together with dose response (35.6%)

Fig. 4 Assessment of AMSTAR 2



Conclusion

This project provides important information about methodological characteristics and overall quality of SR/MAs addressing nutritional interventions in cancer prevention. The authors should follow the existing guidelines such as the Cochrane Handbook and to prospectively register their systematic review protocol with PROSPERO database.



PRISMA 2009 Flow Diagram

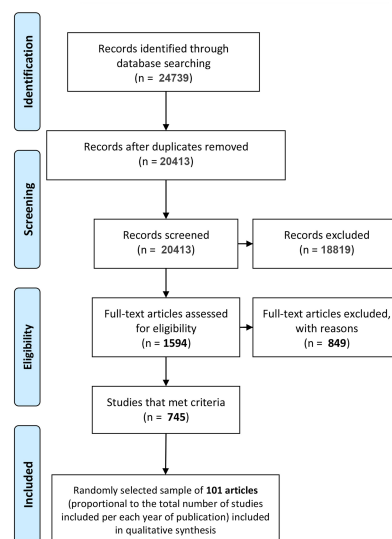


Fig. 1 PRISMA flowchart

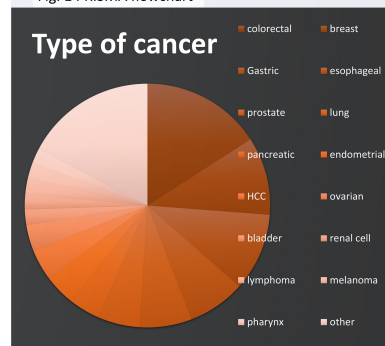


Fig. 2 Type of cancer

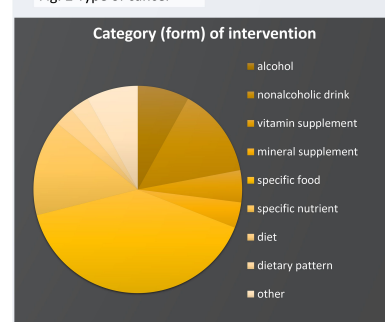


Fig. 3 Category (form) of intervention

Quality of studies published as systematic reviews on nutritional interventions in cancer prevention a systematic methodological survey



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