

Supplementary Table 1 A summary of the search strategy for the different databases

Search	Query	Results
China National Knowledge Infrastructure	Topic: Gastrointestinal microbiomes + gastrointestinal microbiome + gut microbiome + gut microbiota + intestinal microbiome + gut flora + gastrointestinal microbial communities (precise) AND (Topic: Frailty + protein energy malnutrition + protein calorie malnutrition + fragile + frailty syndrome + senile frailty syndrome + frailty elderly + cognitive frailty + physical frailty + psychosocial frailty (precise)	82
VIP	Any field = Gastrointestinal microbiomes + gastrointestinal microbiome + gut microbiome + gut microbiota + intestinal microbiome + gut flora + gastrointestinal microbial communities + intestinal microbiome + frailty + protein energy malnutrition + protein calorie malnutrition + fragile + frailty syndrome + senile frailty syndrome + frailty elderly + cognitive frailty + physical frailty + psychosocial frailty	115
Sinomed	Gastrointestinal microbiomes OR gastrointestinal microbiome OR gut microbiome OR gut microbiota OR intestinal microbiome OR gut flora OR gastrointestinal microbial communities OR intestinal microbiome. Frailty OR protein energy malnutrition OR protein calorie malnutrition OR fragile OR frailty syndrome OR senile frailty syndrome OR frailty elderly OR cognitive frailty OR physical frailty OR psychosocial frailty. 1 AND 2	87
Wanfang	Theme: (Gastrointestinal microbiomes OR gastrointestinal microbiome OR gut microbiome OR gut	287

microbiota OR intestinal microbiome OR gut flora OR gastrointestinal microbial communities OR intestinal microbiome) and theme: (Frailty OR protein energy malnutrition OR protein calorie malnutrition OR fragile OR frailty syndrome OR senile frailty syndrome OR frailty elderly OR cognitive frailty OR physical frailty OR psychosocial frailty)

PubMed (*n* =  
157)

Gastrointestina l microbiome	Gastrointestinal microbiome OR gastrointestinal microbiomes OR microbiome, gastrointestinal OR gut microbiome OR gut microbiomes OR microbiome, gut OR gut microflora OR microflora, gut OR gut microbiota OR gut microbiotas OR microbiota, gut OR gastrointestinal flora OR flora, gastrointestinal OR gut flora OR flora, gut OR gastrointestinal microbiota OR gastrointestinal microbiotas OR microbiota, gastrointestinal OR gastrointestinal microbial community OR gastrointestinal microbial communities OR microbial community, gastrointestinal OR gastrointestinal microflora OR microflora, gastrointestinal OR gastric microbiome OR gastric microbiomes OR microbiome, gastric OR intestinal microbiome OR intestinal microbiomes OR microbiome, intestinal OR intestinal microbiota OR intestinal microbiotas OR microbiota, intestinal OR intestinal microflora OR microflora, intestinal OR intestinal flora OR flora, intestinal OR enteric bacteria OR bacteria, enteric	88455
Frailty	Frailty OR frailties OR frailness OR frailty syndrome OR debility OR debilities OR frail elder OR frail	37597

elderly OR cognitive frailty OR physical frailty OR psychosocial frailty

1 AND 2

157

Web of Science

(*n* = 194)

Gastrointestina TS = (Gastrointestinal microbiome OR gastrointestinal microbiomes OR microbiome, gastrointestinal OR 109807

l microbiome gut microbiome OR gut microbiomes OR microbiome, gut OR gut microflora OR microflora, gut OR gut microbiota OR gut microbiotas OR microbiota, gut OR gastrointestinal flora OR flora, gastrointestinal OR gut flora OR flora, gut OR gastrointestinal microbiota OR gastrointestinal microbiotas OR microbiota, gastrointestinal OR gastrointestinal microbial community OR gastrointestinal microbial communities OR microbial community, gastrointestinal OR gastrointestinal microflora OR microflora, gastrointestinal OR gastric microbiome OR gastric microbiomes OR microbiome, gastric OR intestinal microbiome OR intestinal microbiomes OR microbiome, intestinal OR intestinal microbiota OR intestinal microbiotas OR microbiota, intestinal OR intestinal microflora OR microflora, intestinal OR intestinal flora OR flora, intestinal OR enteric bacteria OR Bacteria, enteric)

Frailty TS = (Frailty OR frailties OR frailness or frailty syndrome OR debility or debilities OR frail elder OR frail 41765

elderly OR cognitive frailty OR physical frailty OR psychosocial frailty)

1 AND 2

194

EMBASE (*n* =  
157)

Intestine flora 'Intestine flora' OR 'Gastrointestinal Microbiome' OR 'gastrointestinal microbiomes' OR 'microbiome, gastrointestinal' OR 'gut microbiome' OR 'gut microbiomes' OR 'microbiome, gut' OR 'gut microflora' OR 'microflora, gut' OR 'gut microbiota' OR 'gut microbiotas' OR 'microbiota, gut' OR 'gastrointestinal flora' OR 'flora, gastrointestinal' OR 'gut flora' OR 'flora, gut' OR 'gastrointestinal microbiota' OR 'gastrointestinal microbiotas' OR 'microbiota, gastrointestinal' OR 'gastrointestinal microbial community' OR 'gastrointestinal microbial communities' OR 'microbial community, gastrointestinal' OR 'gastrointestinal microflora' OR 'microflora, gastrointestinal' OR 'gastric microbiome' OR 'gastric microbiomes' OR 'microbiome, gastric' OR 'intestinal microbiome' OR 'intestinal microbiomes' OR 'microbiome, intestinal' OR 'intestinal microbiota' OR 'intestinal microbiotas' OR 'microbiota, intestinal' OR 'intestinal microflora' OR 'microflora, intestinal' OR 'intestinal flora' OR 'flora, intestinal' OR 'enteric bacteria' OR 'bacteria, enteric' 104471

Frailty 'Frailty' OR 'frailties' OR 'frailness' OR 'frailty syndrome' OR 'debility' OR 'debilities' OR 'frail elder' OR 'frail elderly' OR 'cognitive frailty' OR 'physical frailty' OR 'psychosocial frailty' 35991

1 AND 2

157

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