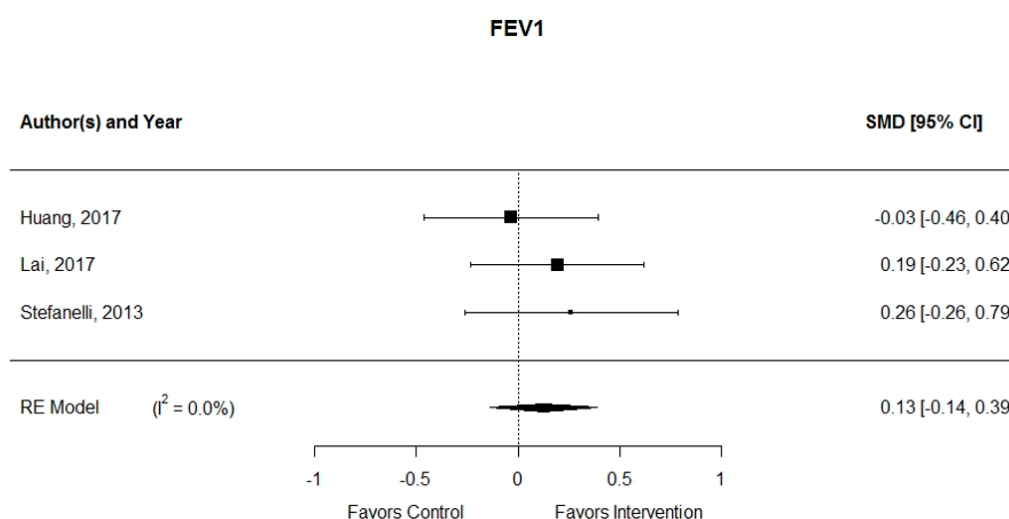
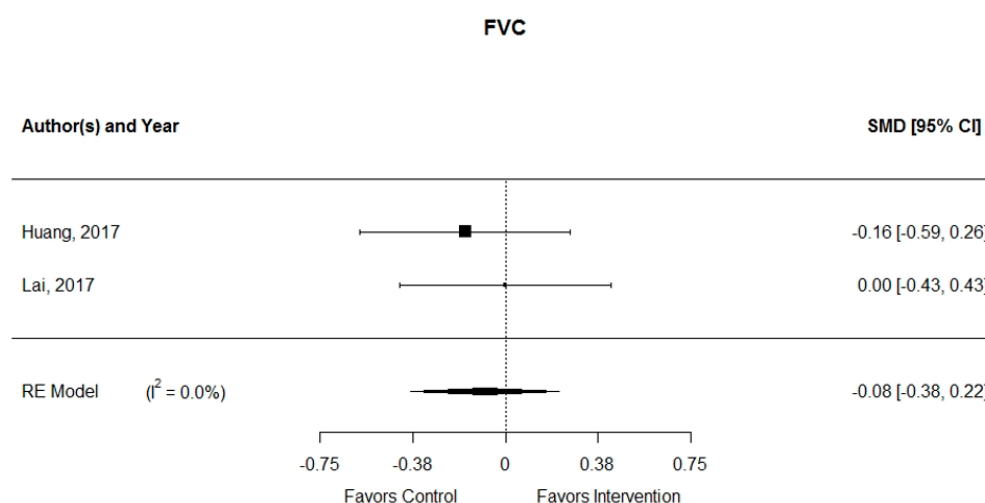
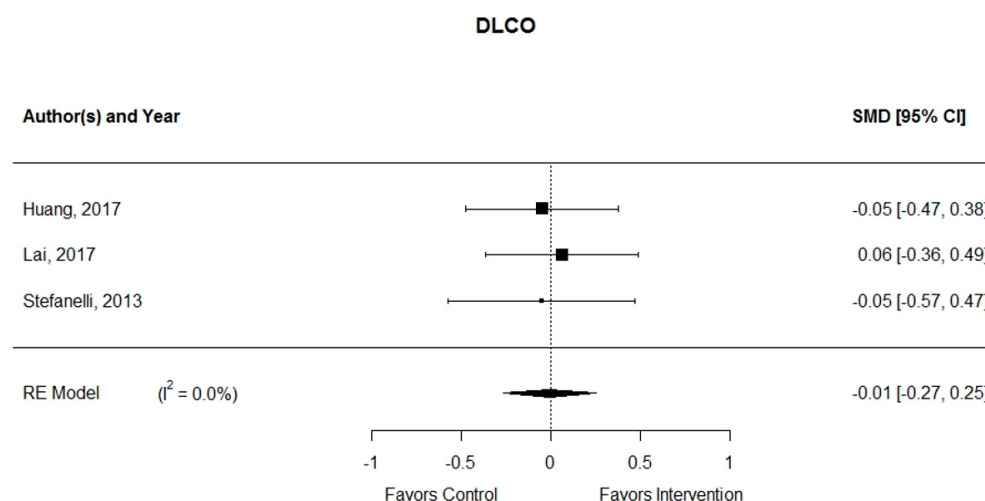


Supplementary Materials: Systematic Review and Meta-Analysis of Randomized, Controlled Trials on Preoperative Physical Exercise Interventions in Patients with Non-Small-Cell Lung Cancer

Ilem D. Rosero, Robinson Ramírez-Vélez, Alejandro Lucia, Nicolas Martínez-Velilla, Alejandro Santos-Lozano, Pedro L. Valenzuela, Idoia Morilla and Mikel Izquierdo



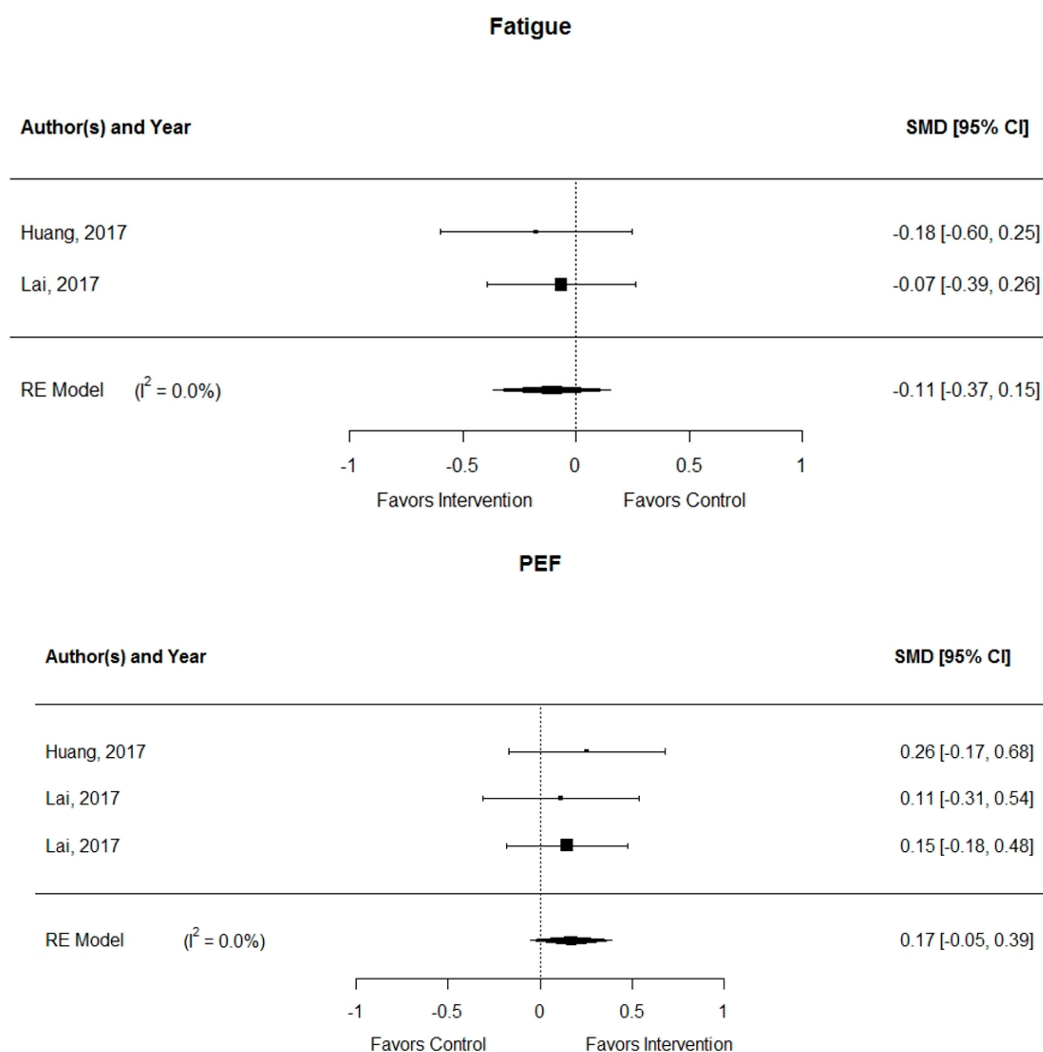
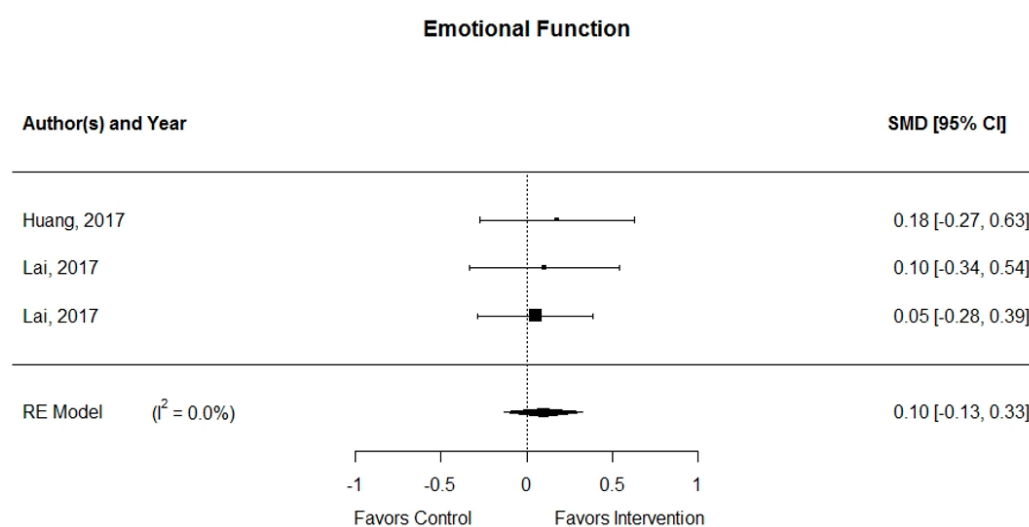


Figure S1. Pooled changes in secondary outcomes: DLCO (Diffusion capacity of the lung for carbon monoxide); FVC (Forced vital capacity); FEV₁ (Forced expiratory volume in one second); Fatigue and PEF (Peak expiratory flow).



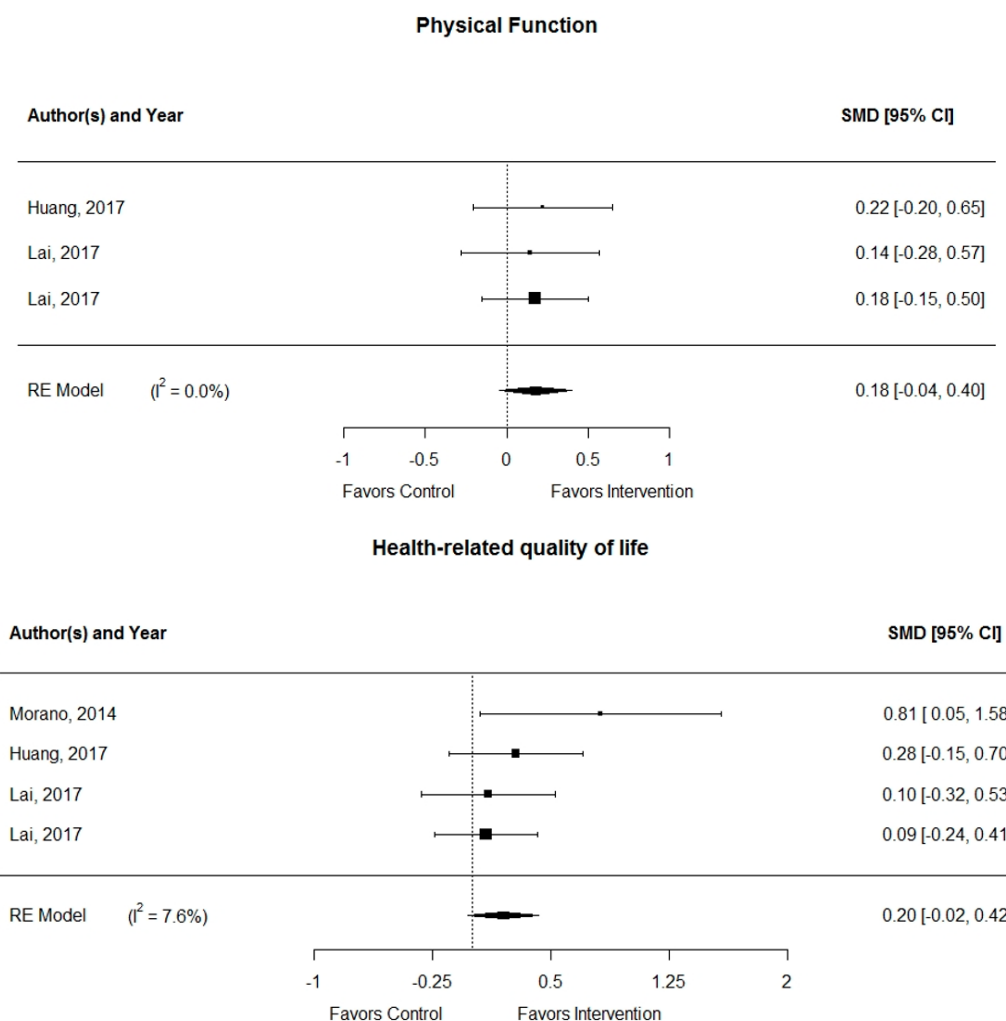


Figure S2. Pooled changes in secondary outcomes: Emotional function; Physical function; and Health-related quality of life.

Table S1. Search Strategy.

CENTRAL (Cochrane Central Register of Controlled Trials)	
1.	MeSH descriptor: [Aged] explode all trees
2.	MeSH descriptor: [Aging] explode all trees
3.	#1 OR #2 OR aged OR elder* OR elderly OR older*
4.	MeSH descriptor: [Exercise] explode all trees
5.	MeSH descriptor: [Exercise Therapy] explode all trees
6.	#4 OR #5 OR Exercise* OR "physical training" OR "physical endurance" OR "exercise training" OR "physical activity" OR "physical fitness" OR "rehabilitation" OR "physical therapy modalities" OR "exercise therapy"
7.	MeSH descriptor: [Lung Neoplasms] explode all trees
8.	#7 OR "lung carcinoma" OR "pulmonary carcinoma" OR "lung neoplasm" OR "lung neoplasms" OR "pulmonary neoplasm" OR "pulmonary neoplasms" OR "pulmonary cancer" OR "lung cancer" OR "lung tumor" OR "lung tumour" OR "lung metastases" OR "Non-Small-Cell Lung"
9.	"general surgery" OR "pulmonary surgical procedures" OR "thoracic surgical procedures" OR "surgical procedures, operative" OR "surg*" OR "operat*" OR "resection"
10.	#3 AND #6 AND #8 AND #9
11.	Trials
12.	Year first published 1970-2018
13.	Date added to CENTRAL trials database: 01/01/1970 – 13/02/2018
CINAHL	

1. ((MH "Aged+") OR "aged" OR (MH "Aging+") OR "elder*" OR "elderly" OR "older*")
2. AND (physical training OR (MH "Therapeutic Exercise+") OR (MH "Rehabilitation Exercise (Saba CCC)/EV/TH/UT") OR (MH "Exercise+/EV/MA/UT") OR (MH "Physical Activity (Omaha)/UT") OR "physical fitness" OR "rehabilitation" OR "physical therapy modalities" OR "exercise therapy")
3. AND ((MH "Lung Neoplasms+/RH/TH/PC") OR "Lung Neoplasms" OR "lung carcinoma" OR "pulmonary carcinoma" OR "lung neoplasm" OR "pulmonary neoplasm" OR "pulmonary neoplasms" OR "pulmonary cancer" OR "lung cancer" OR "lung tumor" OR "lung tumour" OR "lung metastases" OR "Non-Small-Cell Lung")
4. AND ("general surgery" OR "pulmonary surgical procedures" OR "thoracic surgical procedures" OR "surgical procedures, operative" OR "surg*" OR "operat*" OR "resection")
5. Language: english
6. Age: aged: 65+ years, middle aged: 45-64 years
7. Publication years: 1970-2018

EMBASE

1. ("lung neoplasms/exp" OR "lung carcinoma" OR "pulmonary carcinoma" OR "lung neoplasm" OR "lung neoplasms" OR "pulmonary neoplasm" OR "pulmonary neoplasms" OR "pulmonary cancer" OR "lung cancer" OR "lung tumor" OR "lung tumour" OR "lung metastases" OR "Non-Small-Cell Lung")
2. ("exercise therapy" OR exercise/exp OR exercise* OR "physical training" OR "physical endurance" OR "exercise training" OR "physical activity" OR "physical fitness" OR "rehabilitation" OR "physical therapy modalities" OR "exercise therapy")
3. (aged/exp OR aged OR aging OR elder* OR elderly OR older*)
4. ("general surgery" OR "pulmonary surgical procedures" OR "thoracic surgical procedures" OR "surgical procedures, operative" OR "surg*" OR "operat*" OR "resection")
5. (#1 AND #2 AND #3 AND #4)
6. Study type: human, controlled study
7. Publication type: Article
8. Publication year: 1970-2018
9. Age: aged: 65+ years, middle aged: 45-64 years

OVID

1. "lung neoplasms/exp" or "lung carcinoma" or "pulmonary carcinoma" or "lung neoplasm" or "lung neoplasms" or "pulmonary neoplasm" or "pulmonary neoplasms" or "pulmonary cancer" or "lung cancer" or "lung tumor" or "lung tumour" or "lung metastases" OR "Non-Small-Cell Lung").mp. [mp=ti, ot, ab, tx, kw, ct, sh, hw]
2. "exercise therapy".mp. or exercise/exp or exercise*.mp. or "physical training".mp. or "physical endurance".mp. or "exercise training".mp. or "physical activity".mp. or "physical fitness".mp. or "rehabilitation".mp. or "physical therapy modalities".mp. or "exercise therapy".mp. [mp=ti, ot, ab, tx, kw, ct, sh, hw]
3. aged/exp or aged.mp. or aging.mp. or elder*.mp. or elderly.mp. or older*.mp. [mp=ti, ot, ab, tx, kw, ct, sh, hw]
4. ("general surgery" or "pulmonary surgical procedures" or "thoracic surgical procedures" or "surgical procedures, operative" or "surg*" or "operat*" or "resection").mp. [mp=ti, ot, ab, tx, kw, ct, sh, hw]
5. 1 and 2 and 3 and 4
6. limit 7 to "middle aged (45 plus years)" [Limit not valid in CDSR,ACP Journal Club,DARE,CCA,CCTR,CLCMR; records were retained]
7. Publication year: 1970-2018
8. Additional limits: CheckTags (Humans), language: English, Publication Types: Controlled Clinical Trial

PUBMED

Search (aged[Mesh] OR aged[title] OR aging[Mesh] OR elder*[title] OR elderly OR older*) AND (exercise[Mesh] OR "Exercise therapy"[Mesh] OR Exercise*[title] OR "physical training" OR "physical endurance" OR "exercise training" OR "physical activity" OR "physical fitness" OR "rehabilitation" OR "physical therapy modalities" OR "exercise therapy") AND ("Lung Neoplasms"[Mesh] OR "lung carcinoma" OR "pulmonary carcinoma" [title] OR "lung neoplasm" OR "lung neoplasms" OR "pulmonary neoplasm" OR "pulmonary neoplasms" OR "pulmonary cancer" OR "lung cancer"[title] OR "lung tumor"[title] OR "lung tumour"[title] OR "lung metastases" OR "Non-Small-Cell Lung" AND "general surgery" OR "pulmonary surgical procedures" OR "thoracic surgical procedures" OR "surgical procedures, operative" OR "surg*" OR "operat*" OR "resection") Sort by: Author Filters: Clinical Trial; Publication date from 1970/01/01 to 2018/02/13; Humans

SCOPUS

((TITLE-ABS-KEY ((*"Lung Neoplasms"* OR *"lung carcinoma"* OR *"pulmonary carcinoma"* OR *"lung neoplasm"* OR *"lung neoplasms"* OR *"pulmonary neoplasm"* OR *"pulmonary neoplasms"* OR *"pulmonary cancer"* OR *"lung cancer"* OR *"lung tumor"* OR *"lung tumour"* OR *"lung metastases"* OR *"Non-Small-Cell Lung"*))) AND (TITLE-ABS-KEY ((*"Exercise therapy"* OR *exercise** OR *"physical training"* OR *"physical endurance"* OR *"exercise training"* OR *"physical activity"* OR *"physical fitness"* OR *"rehabilitation"* OR *"physical therapy modalities"* OR *"exercise therapy"*)))) AND (TITLE-ABS-KEY ((*aged* OR *aging* OR *elder** OR *elderly* OR *older**)))) AND (TITLE-ABS-KEY ((*"general surgery"* OR *"pulmonary surgical procedures"* OR *"thoracic surgical procedures"* OR *"surgical procedures, operative"* OR *surg** OR *operat** OR *"resection"*)))) AND TITLE-ABS-KEY (*"randomized controlled trials"*) AND (PUBYEAR > 1970) AND (PUBYEAR < 2018) AND (LIMIT-TO (DOCTYPE, *"ar"*)) AND (LIMIT-TO (LANGUAGE, *"English"*)) AND (LIMIT-TO (EXACTKEYWORD, *"Humans"*)).

WEB OF SCIENCE

1. (TI=("*Lung Neoplasms"* OR *"lung carcinoma"* OR *"pulmonary carcinoma"* OR *"lung neoplasm"* OR *"lung neoplasms"* OR *"pulmonary neoplasm"* OR *"pulmonary neoplasms"* OR *"pulmonary cancer"* OR *"lung cancer"* OR *"lung tumor"* OR *"lung tumour"* OR *"lung metastases"* OR *"Non-Small-Cell Lung"*)) AND LANGUAGE:(English)
Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=All years
2. (TI=("*Exercise therapy"* OR *Exercise** OR *"physical training"* OR *"physical endurance"* OR *"exercise training"* OR *"physical activity"* OR *"physical fitness"* OR *"rehabilitation"* OR *"physical therapy modalities"* OR *"exercise therapy"*)) AND LANGUAGE: (English)
Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=All years
3. (TI=(*aged* OR *aging* OR *elder** OR *elderly* OR *older**)) AND LANGUAGE: (English)
Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=All years
4. (TI=("*general surgery"* OR *"pulmonary surgical procedures"* OR *"thoracic surgical procedures"* OR *"surgical procedures, operative"* OR *surg** OR *operat** OR *"resection"*)) AND LANGUAGE: (English)
Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=All years
5. (#1 AND #2 AND #3 AND #4) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article)
Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1970-2018

Table S2. Exclusion criteria and the list of excluded articles.

References	Reasons
[1]	There was no control group
[2]	Not a RCT
[3]	Not a RCT
[4]	Not a RCT
[5]	Not a RCT
[6]	Not a RCT
[7]	Not a RCT
[8]	Training in survivors
[9]	Training in survivors
[10]	Postoperative training
[11]	Postoperative training
[12]	Postoperative training
[13]	Postoperative training
[14]	Postoperative training
[15]	Postoperative training
[16]	Cancer training
[17]	Cancer training
[18]	Cancer training
[19]	Cancer training
[20]	Cancer training

[21]	Cancer training
[22]	Cancer training
[23]	Cancer training
[24]	Perioperative training
[25]	Perioperative training
[26]	Study other variables

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