

Supplement material 2. Details of included studies and risk of bias assessment

First author	Year of public ation	Year(s) of data collecti on	Country	Rationale	Aim of malnutrition assessment	Assessment method	Clear cut- off	Maln* in results	Maln* in discussio n	Risk of bias	Number of in/out patients	HIV coinfection	Susceptibili ty	Type of TB
Martins ²⁴	2009	2005- 2006	Timor-Leste	+	Secondary, part of clinical outcome	BMI < 18.5 kg/m ²	-	+	+	medium	270 outpatients	unknown	unknown	pulmonary
Pakasi ²⁵	2009	unknow n	Indonesia	++	Primary, prevalence and association	BMI < 18.5 kg/m ²	++	++	++	very low	121 outpatients	unknown	unknown	pulmonary
Ulasli ²⁶	2009	2001- 2006	Turkey	+	Secondary, association	BMI < 20.0 kg/m ²	++	+	+	low	24 inpatients	unknown	unknown	pulmonary and/or extra pulmonary
Kim ²⁷	2010	2005- 2006	South- Korea	++	Primary, malnutrition etiology	PIBW, BMI, Albumin, TLC, Cholesterol, Hb	++	++	++	very low	23, unknown type of patients	unknown	unknown	pulmonary
Khoharo ²⁸	2010	2007- 2008	Pakistan	-	Secondary, risk factor	BMI < 18.5 kg/m ²	++	+	++	low	350, unknown type of patients	unknown	unknown	pulmonary
Pakasi ²⁹	2010	2004- 2005	Indonesia	+	Secondary, part of clinical outcome	BMI (no clear cut- off)	-	+	+	medium	300 outpatients	unknown	unknown	pulmonary
Gambhir ³⁰	2010	2006- 2009	India	-	Secondary, risk factor	BMI <18.5 kg/m ²	++	+	+	medium	95 inpatients	no	unknown	pulmonary and/or

														extra pulmonary
Singla ³¹	2010	2004-2009	India	+	Secondary, risk factor	BMI < 18.5 kg/m ²	+	+	+	medium	175 in- and outpatients	no	unknown	pulmonary and/or extra pulmonary
Mupere ³²	2010	2002-2008	Uganda	++	Primary, association	BMI < 18.5 kg/m ²	+	+	+	low	445, unknown type of patients	115	unknown	pulmonary
Warmelink ³³	2010	2005-2008	Nederland	+	Primary, risk factor	Change in body weight	-	+	+	medium	192 inpatients	15	MDR patients included	pulmonary and/or extra pulmonary
Podewils ³⁴	2011	2000-2004	Latvia	++	Primary, association	BMI < 18.5 kg/m ²	++	++	+	very low	995 in- and outpatients	32	only MDR patients	pulmonary
De Jong ³⁵	2011	unknown	Gambia	-	Secondary, part of clinical outcome	BMI < 16 kg/m ²	++	+	+	medium	692, unknown type of patients	56	unknown	pulmonary
Kawai ³⁶	2011	2000-2005	Tanzania	+	Primary, follow-up of malnutrition	BMI < 18.5 kg/m ²	++	+	+	low	887 outpatients	471	unknown	pulmonary
Miyata ³⁷	2011	unknown	Japan	++	Primary, prognostic factor	SGA	++	++	++	very low	39 inpatients	unknown	unknown	pulmonary

Mupere ³⁸	2012	unknown	Uganda	-	Primary, association	BMI < 18.5 kg/m ²	++	+	+	medium	747 outpatients	539	unknown	pulmonary
Piva ³⁹	2013	2008-2009	Brazil	++	Primary, prevalence	BMI < 18.5 kg/m ²	++	++	++	very low	34 in- and outpatients	unknown	unknown	pulmonary
Islam ⁴⁰	2013	2010-2011	Bangladesh	++	Primary, prevalence	BMI < 18.5 kg/m ² and MUAC < 22 cm	++	+	++	very low	1068, unknown type of patients	unknown	unknown	pulmonary
Chittoor ⁴¹	2013	unknown	Mexico	-	Secondary, association	Self-reported estimate of diet quality	-	+	+	high	75 outpatients	unknown	unknown	pulmonary
Miyata ⁴²	2013	unknown	Japan	+	Primary, prognostic factor	MNA < 17	++	+	+	low	53 inpatients	unknown	unknown	pulmonary
Bhargava ³	2013	2004-2009	India	++	Primary, prevalence and association	BMI < 18.5 kg/m ²	++	++	++	very low	1695 in- and outpatients	39	unknown	pulmonary
Bakari ⁴³	2013	2009-2010	Tanzania	++	Primary, prevalence and follow-up of malnutrition	BMI < 18.5 kg/m ²	++	+	+	low	43 outpatients	43	unknown	pulmonary
Ismawati ⁴⁴	2013	2011-2012	Indonesia	+	Secondary, part of clinical outcome	BMI (no clear cut-off)	-	+	+	medium	30, unknown type of patients	unknown	unknown	pulmonary
Miyata ⁴⁵	2013	unknown	Japan	++	Primary, prognostic factor	MUST	++	+	+	low	57 inpatients	unknown	unknown	pulmonary

Maeda ⁴⁶	2014	2007-2009	Vietnam	-	Secondary, association	BMI ≤ 18.5 kg/m ²	++	+	+	medium	465 outpatients	38	Including different types of resistance	pulmonary
Oliveira ⁴⁷	2014	2007-2010	Brazil	++	Secondary, association	TST AMA	+	++	++	very low	166 inpatients	31	unknown	pulmonary
Tian ⁴⁸	2014	2000-2001	China	-	Secondary, risk factor	BMI < 18.5 kg/m ² and/or serum albumin < 30 g/L	++	+	+	medium	160 in- and outpatients	43	unknown	pulmonary
Kumar ⁴⁹	2014	2011-2014	India	+	Primary, prognostic factor	BMI (no clear cut-off)	-	+	+	medium	376 outpatients	unknown	Only MDR	pulmonary
Bacelo ⁵⁰	2015	2008-2013	Brazil	++	Primary, follow-up of malnutrition intervention	Multiple anthropometric and biochemical biomarkers	++	++	++	very low	68, unknown type of patients	22	unknown	Pulmonary and extra pulmonary
Golemba ⁵¹	2015	2011-2014	Argentina	-	Secondary, association	BMI ≤ 20 kg/m ²	++	+	+	medium	75 inpatients	0	unknown	pulmonary
Te Brake ⁵²	2015	unknown	Indonesia	++	Primary, prognostic factor	BMI < 18.5 kg/m ²	++	+	++	very low	36 outpatients	0	unknown	pulmonary
Medellin-Garibay ⁵³	2015	unknown	Mexico	-	Secondary, association	BMI < 18.49 kg/m ²	+	+	+	medium	48, unknown type of patients	0	unknown	Pulmonary and extrapulmonary
Ezeamama ⁵⁴	2015	2004-2008	Uganda	++	Secondary, association	BMI < 18.5 kg/m ²	++	++	++	very low	208 outpatients	208	unknown	pulmonary

McLachlan ⁵⁵	2016	2014	South Africa	-	Secondary, association	BMI < 18.5 kg/m ²	++	-	+	medium	105 inpatients	74	Susceptible and MDR	Pulmonary and extrapulmonary
Gebrecherko ⁵⁶	2016	2015	Ethiopia	+	Secondary, risk factor	BMI < 18.5 kg/m ²	++	+	+	Low	15 outpatients	4	No rifampicin resistance	pulmonary
Araújo-Mariz ⁵⁷	2016	2007-2012	Brazil	-	Secondary, prognostic factor	BMI < 18.5 kg/m ²	++	+	+	medium	173, unknown type of patients	173	unknown	unknown
Buntoro ⁵⁸	2016	unknown	Indonesia	+	Primary, part of clinical outcome	BMI <18.5 kg/m ²	++	++	++	very low	72 outpatients	unknown	unknown	pulmonary
Pandit ⁵⁹	2016	2012-2013	India	-	Secondary, prognostic factor	BMI <20.0 kg/m ²	-	+	+	high	148, unknown type of patients	unknown	unknown	pulmonary
Abdelbary ⁶⁰	2017	2006-2013	Mexico	-	Secondary, risk factor	Underweight	-	++	-	high	8431 outpatients	447	Susceptible and MDR	pulmonary and extrapulmonary
Bhat ⁶¹	2017	2013	India	+	Secondary, association	BMI < 18.5 kg/m ²	++	+	+	low	267 outpatients	0	unknown	pulmonary
Hochberg ⁶²	2017	2014-2016	India	-	Primary, prevalence	BMI < 18.5 kg/m ²	++	++	++	low	409 outpatients	1	Only normal susceptible	pulmonary
Piparva ⁶³	2018	2014-2015	India	-	Secondary, part of clinical outcome	BMI < 18.5 kg/m ²	++	++	++	low	108 inpatients	5	only MDR	pulmonary

Gurung ⁶⁴	2018	2016	Nepal	++	Primary, prevalence	BMI (no clear cut-off)	-	++	++	low	133 outpatients	1	unknown	pulmonary and extrapulmonary
Pande ⁶⁵	2018	2015-2016	India	-	Secondary, prevalence and association	BMI < 18.4 kg/m ²	+	+	+	medium	728 inpatients	53	unknown	pulmonary and extrapulmonary
Rao ⁶⁶	2018	2013-2014	India	-	Secondary, risk factor	BMI (no clear cut-off)	-	+	++	medium	220 outpatients	unknown	unknown	pulmonary
Sattler ⁶⁷	2018	unknown	4 continents, 26 study sites	+	Primary, association	BMI < 18.5 kg/m ²	-	+	+	medium	51, unknown type of patients	51	unknown	pulmonary
Kirchmann Lazzari ⁶⁸	2018	unknown	Brazil	++	Primary, prevalence	BMI TSF MAMC SGA	+	++	++	very low	108 inpatients	44	unknown	pulmonary
Cheng ⁶⁹	2019	2013-2016	China	-	Secondary, part of clinical outcome	BMI < 18 kg/m ²	+	+	-	high	85 inpatients	0	unknown	intestinal
Cavalheiro Skupien ⁷⁰	2019	unknown	Brazil	-	Secondary, association	BMI ≤ 18.5 kg/m ²	-	+	+	high	35 inpatients	unknown	unknown	pulmonary

Abdullahi ⁷¹	2019	2012 - 2016	Kenya	+	Primary, association	BMI < 18.5 kg/m ²	++	++	-	low	10717 outpatients	3163	unknown	Pulmonary and extrapulmonary
Benzekri ⁷²	2019	2016 - 2017	Senegal	-	Primary, part of clinical outcome	BMI (no clear cut-off)	-	++	+	medium	26 outpatients	26	Susceptible	pulmonary
Chebrolu ⁷³	2019	unknown	USA	++	Primary, inclusion criterion	BMI < 16 kg/m ²	++	+	+	low	27, unknown type of patients	0	unknown	Pulmonary and extrapulmonary
Da Silva ⁷⁴	2019	2017 - 2018	Brazil	+	Primary, association	BMI < 18.5 kg/m ² TSF MUAC MAMC BIA FFQ	+	++	++	low	35, unknown type of patients	14	unknown	Pulmonary
Feleke ⁷⁵	2019	2015 - 2018	Ethiopia	++	Primary, prevalence	BMI < 18.5 kg/m ²	++	++	+	very low	1681, unknown type of patients	595	unknown	Pulmonary and extrapulmonary

Gashaw ⁷⁶	2019	2015 – 2017	Ethiopia	++	Primary, prevalence	BMI ≤ 18.5 kg/m ² MUAC ≤ 23 cm (men) MUAC ≤ 22 cm (women)	++	++	++	very low	384, unknown type of patients	unknown	unknown	Pulmonary and extrapulmonary
Hoyt ⁷⁷	2019	2015 – 2017	India	++	Primary, part of clinical outcome	BMI < 18.5 kg/m ²	++	++	++	very low	173, unknown type of patients	unknown	unknown	pulmonary
Hussien ⁷⁸	2019	2017 – 2018	Ethiopia	++	Primary, prevalence	BMI < 18.5 kg/m ²	+	++	++	very low	372 inpatients	42	unknown	pulmonary
Lee ⁷⁹	2019	2016 – 2017	Philippines	++	Primary, prognostic factor	BMI< 17 kg/m ² MUAC ≤ 20.5 cm (men) MUAC ≤ 18.5 cm (women)	++	++	++	very low	348 inpatients	22	31 MDR	unknown
Mailu ⁸⁰	2019	2013- 2017	Kenya	-	Primary, prevalence	BMI < 18.5 kg/m ²	++	++	+	low	421409 outpatients	134776	unknown	Pulmonary and extrapulmonary

Rashak ⁸¹	2019	2010-2014	Mexico	++	Primary, prevalence and association	BMI < 18.5 kg/m ² (or BMI ≤ 18.5 kg/m ² , not clearly described)	-	++	++	low	5508 , unknown type of patients	224	unknown	Pulmonary and extrapulmonary
Ren ⁸²	2019	2015 – 2017	China	++	Primary, prevalence	BMI < 18.5 kg/m ²	++	-	++	low	300 in- and outpatients	unknown	unknown	pulmonary
Wardani ⁸³	2019	2016	Indonesia	+	Secondary, risk factor	BMI ≤ 18.5 kg/m ²	++	+	-	medium	311 outpatients	unknown	unknown	pulmonary
Wessels ⁸⁴	2019	2015	South Africa	++	Secondary, association	BMI < 18.5 kg/m ² (underweight)	-	++	+	low	100 inpatients	68	unknown	unknown
White ⁸⁵	2019	2016 – 2017	Philippines	++	Primary and secondary, validation of tool and prognostic factor	BMI < 17 kg/m ²	++	++	++	very low	348 inpatients	22	31	unknown

Ma'rufi ⁸⁶	2020	2017	Indonesia	++	Primary, follow-up of malnutrition	BMI < 18.5 kg/m ²	++	++	++	very low	200 outpatients	0 (excluded)	0 (excluded)	pulmonary
Musuenge ⁸⁷	2020	unknown	Burkina Faso	++	Primary, prevalence and association	BMI < 18.5 kg/m ²	++	++	++	Very low	302 outpatients	23	unknown	pulmonary
Seid ⁸⁸	2020	2019	Ethiopia	++	Primary, prevalence and prognostic factor	BMI < 18.5 kg/m ²	+	++	++	Very low	284 in- and outpatients	51	Unknown	Pulmonary and extrapulmonary
Edwards ⁸⁹	2020	2017	Philippines	+	Primary, prevalence	BMI < 17.0 kg/m ²	+	++	++	Very low	446 outpatients	68 (28%)	Susceptible	Unknown
White ⁹⁰	2020	2017	Philippines	++	Primary, prevalence and association	BMI < 18.5 kg/m ²	+	++	++	Very low	637 outpatients	74 (24%)	Unknown	Unknown

Mollah ⁹¹	2020	2018	India	++	Primary, prevalence	BMI < 18.5 kg/m ² MUAC <23 (m) & <22 (f)	++	-	++	Low	113, unknown type of patients	Unknown	Unknown	Pulmonary and extrapulmonary
----------------------	------	------	-------	----	---------------------	---	----	---	----	-----	-------------------------------	---------	---------	------------------------------

1

2 **Abbreviations** PIBW: Percent Ideal Body Weight; BMI: Body Mass index; TLC: Total Lymphocyte Count; Hb: Haemoglobin; MUAC: Mid Upper Arm Circumference; MNA: Mini Nutritional Assessment;

3 AMA: Arm Muscle Area; MAMC: Mid Arm Muscle Circumference; TSF: Triceps Skin Fold ; TST: Triceps Skinfold Thickness; SGA: Subjective Global Assessment; BIA: Bio-electrical Impedance Analysis; FFQ: Food

4 Frequency Questionnaire

5 **References**

- 6 3 Bhargava A, Chatterjee M, Jain Y, et al. Nutritional status of adult patients with pulmonary
7 tuberculosis in rural central India and its association with mortality. *PLoS One* 2013;8:e77979
8 doi:10.1371/journal.pone.0077979 [doi].
- 9 24 Martins N, Morris P, Kelly PM. Food incentives to improve completion of tuberculosis treatment:
10 randomised controlled trial in Dili, Timor-Leste. *BMJ* 2009;339:b4248 doi:10.1136/bmj.b4248 [doi].
- 11 25 Pakasi TA, Karyadi E, Dolmans WM, et al. Malnutrition and socio-demographic factors associated
12 with pulmonary tuberculosis in Timor and Rote Islands, Indonesia. *Int J Tuberc Lung Dis* 2009;13:755-
13 9.
- 14 26 Ulasli SS, Ulubay G, Arslan NG, et al. Characteristics and Outcomes of End-Stage Renal Disease
15 Patients With Active Tuberculosis Followed in Intensive Care Units. *Saudi J Kidney Dis Transpl*
16 2009;20:254-9.
- 17 27 Kim JS, Wilson JM, Lee SR. Dietary implications on mechanisms of sarcopenia: roles of protein,
18 amino acids and antioxidants. *J Nutr Biochem* 2010;21:1-13 doi:10.1016/j.jnutbio.2009.06.014;
19 10.1016/j.jnutbio.2009.06.014.
- 20 28 Khoharo HK, Ansari S, Siddiqui AA, et al. Standard antituberculosis drug induced hepatotoxicity:
21 Do the risk factors matter?. *J Liaquat Uni Med Health Sci* 2010;9:84-7.
- 22 29 Pakasi TA, Karyadi E, Suratih NMD, et al. Zinc and vitamin A supplementation fails to reduce
23 sputum conversion time in severely malnourished pulmonary tuberculosis patients in Indonesia. *Nutr*
24 *J* 2010;9:41.
- 25 30 Gambhir HS, Kaushik RM, Kaushik R, et al. Tobacco smoking-associated risk for tuberculosis: a
26 case-control study. *Int Health* 2010;2:216-22.
- 27 31 Singla R, Sharma SK, Mohan A, et al. Evaluation of risk factors for antituberculosis treatment
28 induced hepatotoxicity. *Indian J Med Res* 2010;132:81-6.
- 29 32 Mupere E, Zalwango S, Chiunda A, et al. Body composition among HIV-seropositive and HIV-
30 seronegative adult patients with pulmonary tuberculosis in Uganda. *Ann Epidemiol* 2010;20:210-6.
- 31 33 Warmelink I, van Altena R, ten Hacken N, et al. Nutritional status and vitamin D3 during
32 antimicrobial treatment. *Lancet* 2011;377:1407-8.
- 33 34 Podewils LJ, Holtz T, Riekstina V, et al. Impact of malnutrition on clinical presentation, clinical
34 course, and mortality in MDR-TB patients. *Epidemiol Infect* 2011;139:113-20
35 doi:10.1017/S0950268810000907 [doi].
- 36 35 de Jong BC, Adetifa I, Walther B, et al. Differences between tuberculosis cases infected with
37 *Mycobacterium africanum*, West African type 2, relative to Euro-American *Mycobacterium*
38 tuberculosis: an update. *FEMS Immunol Med Microbiol* 2010;58:102-5 doi:10.1111/j.1574-
39 695X.2009.00628.x [doi].

- 40 36 Kawai K, Villamor E, Mugusi FM, et al. Predictors of change in nutritional and hemoglobin status
41 among adults treated for tuberculosis in Tanzania. *Int J Tuberc Lung Dis* 2011;15:1380-9
42 doi:10.5588/ijtld.10.0784 [doi].
- 43 37 Miyata S, Tanaka M, Ihaku D. Subjective global assessment in patients with pulmonary
44 tuberculosis. *Nutr Clin Pract* 2011;26:55-60 doi:10.1177/0884533610392380 [doi].
- 45 38 Mupere E, Malone L, Zalwango S, et al. Lean tissue mass wasting is associated with increased risk
46 of mortality among women with pulmonary tuberculosis in urban Uganda. *Ann Epidemiol*
47 2012;22:466-73.
- 48 39 Piva SG, Costa Mda C, Barreto FR, et al. Prevalence of nutritional deficiency in patients with
49 pulmonary tuberculosis. *J Bras Pneumol* 2013;39:476-83 doi:10.1590/S1806-37132013000400012
50 [doi].
- 51 40 Islam QS, Ahmed SM, Islam MA, et al. Beyond drugs: tuberculosis patients in Bangladesh need
52 nutritional support during convalescence. *Public health action* 2013;3:136-40.
- 53 41 Chittoor G, Arya R, Farook VS, et al. Epidemiologic investigation of tuberculosis in a Mexican
54 population from Chihuahua State, Mexico: a pilot study. *Tuberculosis (Edinburgh, Scotland)*
55 2013;93:S71-7.
- 56 42 Miyata S, Tanaka M, Ihaku D. Full mini nutritional assessment and prognosis in elderly patients
57 with pulmonary tuberculosis. *J Am Coll Nutr* 2013;32:307-11 doi:10.1080/07315724.2013.826114
58 [doi].
- 59 43 Bakari M, Wamsele J, MacKenzie T, et al. Nutritional status of HIV-infected women with
60 tuberculosis in Dar es Salaam, Tanzania. *Public health action* 2013;3:224-9.
- 61 44 Ismawati. R., Bambang W, Priatna DY, et al. The effect of zinc, lysine and vitamin a
62 supplementation to increase cellular immune response of pulmonary tuberculosis patients. *J Trace*
63 *Elem Med Biol* 2013;27:21.
- 64 45 Miyata S, Tanaka M, Ihaku D. The prognostic significance of nutritional status using malnutrition
65 universal screening tool in patients with pulmonary tuberculosis. *Nutrition journal* 2013;12:42.
- 66 46 Maeda S, Hang NT, Lien LT, et al. Mycobacterium tuberculosis strains spreading in Hanoi, Vietnam:
67 Beijing sublineages, genotypes, drug susceptibility patterns, and host factors. *Tuberculosis (Edinb)*
68 2014;94:649-56 doi:S1472-9792(14)20533-6 [pii].
- 69 47 Oliveira MG, Delogo KN, Oliveira, Hedi Marinho de Melo Gomes de, et al. Anemia in hospitalized
70 patients with pulmonary tuberculosis. *Jornal brasileiro de pneumologia : publicacao oficial da*
71 *Sociedade Brasileira de Pneumologia e Tisiologia* 2014;40:403-10.
- 72 48 Tian PW, Wang Y, Shen YC, et al. Different risk factors of recurrent pulmonary tuberculosis
73 between Tibetan and Han populations in Southwest China. *Eur Rev Med Pharmacol Sci* 2014;18:1482-
74 6 doi:7406 [pii].
- 75 49 Kumar NSS, Hemraj SK, Dutt RA. Phase angle measurement in pulmonary tuberculosis patients
76 and control subjects using bio-impedance analysis. *The Indian journal of tuberculosis* 2014;61:224-31.

- 77 50 Bacelo AC, Ramalho A, Brasil PE, et al. Nutritional Supplementation Is a Necessary Complement to
78 Dietary Counseling among Tuberculosis and Tuberculosis-HIV Patients. *PLoS One* 2015;10:e0134785
79 doi:10.1371/journal.pone.0134785 [doi].
- 80 51 Golemba AS, Ferreyra FG, Martearena RE, et al. Drug-induced hepatotoxicity and tuberculosis in a
81 hospital from the Argentinian northeast: cross-sectional study. *Medwave* 2015;15:e6135
82 doi:10.5867/medwave.2015.04.6135 [doi].
- 83 52 Te Brake LH, Ruslami R, Later-Nijland H, et al. Exposure to total and protein-unbound rifampicin is
84 not affected by malnutrition in Indonesian tuberculosis patients. *Antimicrob Agents Chemother*
85 2015;74:986-90 doi:AAC.03485-14 [pii].
- 86 53 Medellin-Garibay SE, Cortez-Espinosa N, Milan-Segovia RC, et al. Clinical Pharmacokinetics of
87 Rifampin in Patients with Tuberculosis and Type 2 Diabetes Mellitus: Association with Biochemical
88 and Immunological Parameters. *Antimicrob Agents Chemother* 2015;59:7707-14
89 doi:10.1128/AAC.01067-15 [doi].
- 90 54 Ezeamama AE, Mupere E, Oloya J, et al. Age, sex, and nutritional status modify the CD4+ T-cell
91 recovery rate in HIV-tuberculosis co-infected patients on combination antiretroviral therapy. *Int J*
92 *Infect Dis* 2015;35:73-9 doi:10.1016/j.ijid.2015.04.008 [doi].
- 93 55 McLachlan I, Visser WI, Jordaan HF. Skin conditions in a South African tuberculosis hospital:
94 Prevalence, description, and possible associations. *Int J Dermatol* 2016;55:1234-41.
- 95 56 Gebrecherkos T, Gelaw B, Tessema B. Smear positive pulmonary tuberculosis and HIV co-infection
96 in prison settings of North Gondar Zone, Northwest Ethiopia. *BMC Public Health* 2016;16:1091.
- 97 57 Araújo-Mariz C, Lopes EP, Acioli-Santos B, et al. Hepatotoxicity during Treatment for Tuberculosis
98 in People Living with HIV/AIDS. *PloS one* 2016;11:e0157725.
- 99 58 Buntoro IF, Kristin E, Sumardi. Decrease of liver function after treatment of antituberculosis drugs
100 in tuberculosis patients with malnutrition and alcohol consumption. *Int J Pharm Pharm Sci*
101 2016;8:269-73.
- 102 59 Pandit A, Pandey Ak. Liver dysfunction in pulmonary tuberculosis patients on dots: A study and
103 review. *J Gastroenterol Hepatol Res* 2016;5:2254-60.
- 104 60 Abdelbary BE, Garcia-Viveros M, Ramirez-Oropesa H, et al. Predicting treatment failure, death and
105 drug resistance using a computed risk score among newly diagnosed TB patients in Tamaulipas,
106 Mexico. *Epidemiol Infect* 2017;145:3020-34.
- 107 61 Bhat J, Rao VG, Sharma RK, et al. Investigation of the risk factors for pulmonary tuberculosis: A
108 case-control study among Saharia tribe in Gwalior district, Madhya Pradesh, India. *Indian J Med Res*
109 2017;146:97-104.
- 110 62 Hochberg NS, Sarkar S, Horsburgh CR, et al. Comorbidities in pulmonary tuberculosis cases in
111 Puducherry and Tamil Nadu, India: Opportunities for intervention. *PloS one* 2017;12:e0183195.
- 112 63 Piparva KG, Jansari G, Singh AP. Evaluation of treatment outcome and adverse drug reaction of
113 directly observed treatment (DOT) plus regimen in multidrug-resistant tuberculosis (MDR-TB)
114 patients at district tuberculosis centre Rajkot. *Perspectives in clinical research* 2018;9:165-9.

- 115 64 Gurung LM, Bhatt LD, Karmacharya I, et al. Dietary Practice and Nutritional Status of Tuberculosis
116 Patients in Pokhara: A Cross Sectional Study. *Frontiers in nutrition* 2018;5:1-6.
- 117 65 Pande T, Huddart S, Xavier W, et al. Prevalence of diabetes mellitus amongst hospitalized
118 tuberculosis patients at an Indian tertiary care center: A descriptive analysis. *PloS one*
119 2018;13:e0200838.
- 120 66 Rao VG, Bhat J, Yadav R, et al. A comparative study of the socio-economic risk factors for
121 pulmonary tuberculosis in the Saharia tribe of Madhya Pradesh, India. *Trans R Soc Trop Med Hyg*
122 2018;112:272-8.
- 123 67 Sattler FR, Chelliah D, Wu X, et al. Biomarkers Associated with Death After Initiating Treatment for
124 Tuberculosis and HIV in Patients with Very Low CD4 Cells. *Pathogens & immunity* 2018;3:46-62.
- 125 68 Lazzari T.K., Forte G.C., Silva D.R. Nutrition Status Among HIV-Positive and HIV-Negative Inpatients
126 with Pulmonary Tuberculosis. *Nutr.Clin.Prac.* 2018;33:858-64.
- 127 69 Cheng W, Zhang S, Li Y, et al. Intestinal tuberculosis: clinico-pathological profile and the
128 importance of a high degree of suspicion. *Trop Med Int Health* 2019;24:81-90.
- 129 70 Skupien EC, Lazzari T, Coutinho SE, et al. The relation between leptin and inflammatory markers
130 with respiratory and peripheral muscle strength in tuberculosis: A case-control study. *Clin Respir J*
131 2018;12:2559-65.
- 132 71 Abdullahi OA, Ngari MM, Sanga D, et al. Mortality during treatment for tuberculosis; a review of
133 surveillance data in a rural county in Kenya. *PloS one* 2019;14:e0219191.
- 134 72 Benzekri NA, Sambou JF, Tamba IT, et al. Nutrition support for HIV-TB co-infected adults in
135 Senegal, West Africa: A randomized pilot implementation study. *PloS one* 2019;14:e0219118.
- 136 73 Chebrolu P., Laux T., Chowdhury S., et al. The risk of refeeding syndrome among severely
137 malnourished tuberculosis patients in Chhattisgarh, India. *Indian J Tuberc*
138 2019;<https://doi.org/10.1016/j.ijtb.2019.03.004>.
- 139 74 da Silva LF, Skupien EC, Lazzari T, et al. Advanced glycation end products (AGE) and receptor for
140 AGE (RAGE) in patients with active tuberculosis, and their relationship between food intake and
141 nutritional status. *PloS one* 2019;14:e0213991.
- 142 75 Feleke BE, Feleke TE, Biadlegne F. Nutritional status of tuberculosis patients, a comparative
143 cross-sectional study. *BMC Pulm Med* 2019;19:182.
- 144 76 Gashaw F, Bekele S, Mekonnen Y, et al. High helminthic co-infection in tuberculosis patients with
145 undernutritional status in northeastern Ethiopia. *Infect Dis Poverty* 2019;8:88.
- 146 77 Hoyt KJ, Sarkar S, White L, et al. Effect of malnutrition on radiographic findings and mycobacterial
147 burden in pulmonary tuberculosis. *PloS one* 2019;14:e0214011.
- 148 78 Hussien B., Hussen M.M., Seid A., et al. Nutritional deficiency and associated factors among new
149 pulmonary tuberculosis patients of Bale Zone Hospitals, southeast Ethiopia. *BMC Res Notes*
150 2019;12:751.

- 151 79 Lee N, White LV, Marin FP, et al. Mid-upper arm circumference predicts death in adult patients
152 admitted to a TB ward in the Philippines: A prospective cohort study. *PloS one* 2019;14:e0218193.
- 153 80 Mailu EW, Owiti P, Ade S, et al. Tuberculosis control activities in the private and public health
154 sectors of Kenya from 2013 to 2017: how do they compare?. *Trans R Soc Trop Med Hyg*
155 2019;113:740-8.
- 156 81 Rashak HA, Sánchez-PÃ©rez HJ, Abdelbary BE, et al. Diabetes, undernutrition, migration and
157 indigenous communities: tuberculosis in Chiapas, Mexico. *Epidemiol Infect* 2019;147:e71.
- 158 82 Ren Z, Zhao F, Chen H, et al. Nutritional intakes and associated factors among tuberculosis
159 patients: a cross-sectional study in China. *BMC Infect Dis* 2019;19:907.
- 160 83 Wardani DWSR, Wahono EP. Predominant Determinants of Delayed Tuberculosis Sputum
161 Conversion in Indonesia. *Indian J Commun Med* 2019;44:53-7.
- 162 84 Wessels J, Walsh CM, Nel M. Smoking habits and alcohol use of patients with tuberculosis at
163 Standerton Tuberculosis Specialised Hospital, Mpumalanga, South Africa. *Health SA Gesondheid*
164 2019;24:1146.
- 165 85 White LV, Edwards T, Lee N, et al. Co-morbidities in filipino persons with tuberculosis: A cross-
166 sectional study in urban and rural public TBDOTS facilities. *Trans R Soc Trop Med Hyg* 2019;113:S210.
- 167 86 Ma'rufi I, Ali K, Jati SK, et al. Improvement of Nutritional Status among Tuberculosis Patients by
168 Channa striata Supplementation: A True Experimental Study in Indonesia. *BioMed Research*
169 *International* 2020:1-10.
- 170 87 Musuenge BB, Poda GG, Chen PC. Nutritional Status of Patients with Tuberculosis and Associated
171 Factors in the Health Centre Region of Burkina Faso. *Nutrients* 2020;12:10.3390/nu12092540
172 doi:E2540 [pii].
- 173 88 Seid G, Ayele M. Undernutrition and Mortality among Adult Tuberculosis Patients in Addis Ababa,
174 Ethiopia. *Adv Prev Med* 2020;2020:5238010 doi:10.1155/2020/5238010 [doi].
- 175 89 Edwards T, White LV, Lee N, et al. Effects of comorbidities on quality of life in Filipino people with
176 tuberculosis. *The international journal of tuberculosis and lung disease : the official journal of the*
177 *International Union against Tuberculosis and Lung Disease* 2020;24:712-9.
- 178 90 White LV, Edwards T, Lee N, et al. Patterns and predictors of co-morbidities in Tuberculosis: A
179 cross-sectional study in the Philippines. *Sci Rep* 2020;10:4100.
- 180 91 Mollah A, Shrivastava P, Das DK, et al. Nutritional status of adult Tuberculosis patients in Burdwan
181 municipality area of West Bengal. *Indian Journal of Community Health* 2020;32:438-43.
- 182
- 183