Promoção da Saúde
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Population deprived of liberty and homeless population: analysis of the contexts in the illness due to tuberculosis

População privada de liberdade e população em situação de rua: análise dos contextos no adoecimento por tuberculose

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ABSTRACT

Objective: to identify aspects that enhance or weaken TB treatment outcome between PDL and HP. **Methods:** an integrative review was carried out in April 2024 in the LILACS, Web of Science, MEDLINE, Scopus and Embase databases. Primary studies available in full, published between 2019 and 2024, in English, Portuguese or Spanish, were included. Gray literature was excluded. **Results:** fifteen articles made up this study, which addressed as fragility, in both populations, sociodemographic aspects (advanced age, low education and male sex), clinical aspects (TB/HIV co-infection, alcoholism and other chronic diseases) and aspects those related to healthcare services and/or prison unit (access barriers and overcrowding). For PDL, history of loss to follow-up and stigma stand out. Aspects that enhance were active search, offering directly observed treatment and housing and food assistance for HP. Conclusion: it is necessary to reduce health inequalities with coping strategies that overcome existing challenges.

Keywords: Tuberculosis. Ill-Housed Persons. Prisoners. Health Services. Treatment Outcome.

RESUMO

Objetivo: identificar aspectos que potencializam ou fragilizam o desfecho do tratamento da TB entre a PPL e PSR. **Métodos:** Revisão integrativa realizada, em abril de 2024, nas bases LILACS, Web of Science, MEDLINE, Scopus e Embase, incluiu estudos primários disponibilizados na íntegra, publicados entre 2019 e 2024, em inglês, português ou espanhol; foi excluído a literatura cinzenta. **Resultados:** 15 artigos compuseram este estudo os quais abordaram como fragilidade, em ambas as populações, aspectos sociodemográficos (idade avançada, baixa escolaridade e sexo masculino), clínicos (coinfecção TB/HIV, alcoolismo e outras doenças crônicas) e relacionados aos serviços de saúde e/ou unidade prisional (barreiras no acesso e superlotação). Para PPL, destacam-se histórico de perda de seguimento e estigma. Os aspectos que potencializam, foram a busca ativa, oferta do tratamento diretamente observado, e de auxílio moradia e alimentação para a PSR. **Conclusão**: É necessário reduzir desigualdades em saúde com estratégias de enfrentamento que superem os desafios existentes.

Palavras-chave: Tuberculose. Pessoas Mal Alojadas. Prisioneiros. Serviços de Saúde. Resultado do Tratamento.

INTRODUCTION

Tuberculosis (TB) persists as a global public health challenge. It has affected approximately 10.3 million people in 2021, causing 1.6 million deaths, being the leading cause of death among people with HIV.[1]

Although the World Health Organization (WHO), in 2014, implemented the End TB strategy with the objective of reducing TB deaths by 90% and reducing its incidence by 80%, in order to eradicate the global epidemic by 2030, there are still gaps in the improvement and advancement of effective health promotion actions that act to control TB, especially in countries with high and medium incidence of the disease, such as Brazil. This epidemiological-operational scenario has become even more complex due to the COVID-19 pandemic, especially among the population deprived of liberty (PDL) and homeless people (HP).[2-3]

In the meantime, these populations are key to implementing strategies to combat TB, considering that both are surrounded by unhealthy conditions that enhance the process of illness and transmissibility, whereas health promotion and disease prevention actions must be considered in the face of these existing challenges. PDL faces environments with restricted air circulation and lighting as well as living with crowds of people, which characterizes prison units as potentially transmitting the bacillus. This population becomes even more susceptible to illness due to limited access to healthcare professionals and services and because, in most cases, they have a weakened nutritional and immunological status.[4]

Added to this, the lack of recognition that the right to health is inalienable and that its precariousness compromises not only the health of PDL, but also of prison officers, visitors, healthcare professionals, among other people who frequent prison units, can be an potentiator for reducing motivation in service provision and quality, compromising disease screening and control actions.[5]

In relation to HP, their vulnerability is the result of a complex interaction of several factors, such as lack of housing that exposes these individuals to extreme weather conditions, urban violence and a series of challenges related to the lack of and difficulty in accessing basic healthcare services, with restrictions and/or difficulties in creating and strengthening bonds with the team, whether due to professional turnover or even to weakness in an approach that seeks only equality in the face of different existing inequalities, including in health promotion actions.[6]

Furthermore, stigma associated with both populations results in greater complexity in integration into society, increasing the propensity for social exclusion and lack of a support network. These when combined with the absence of employment as a source of income and maintenance imply a scarcity of financial resources that prevent access to essential items, such as adequate food, clothing and hygiene care. Additionally, mental health problems, drug addiction and exposure to violence make it even more difficult to seek help, whereas the loss of personal documents increases barriers to accessing healthcare, causing to continue the risk of weakening TB treatment outcome, such as loss to follow-up, emergence of drug-resistant TB (DR-TB) and death from the disease.[7-8]

It is clear, therefore, that the aspects presented pervade stigma, socioeconomic vulnerabilities, difficulties in the logistics of accessing and offering TB diagnosis and treatment, even though there are protocols and recommendations aimed at the populations studied that could enhance outcomes as long as they were implemented properly.[9]

In view of this, the importance of identifying the factors that enhance or weaken TB treatment outcome stands out, since recognizing them allows us to reflect on aspects that already exist and are recognized in the literature as enhancing outcomes and resolve barriers to implementing them. In relation to the factors that weaken treatment, understanding them also allows us to develop effective and inclusive health promotion strategies that contribute to health inequality reduction and disease control.

Therefore, this study aimed to identify aspects that enhance or weaken TB treatment outcome among PDL and/or HP according to national and international literature.

METHODOLOGY

An integrative literature review was carried out in April 2024 based on six stages, namely: guiding question elaboration; database choice; inclusion and exclusion criteria establishment; search in databases; analysis of studies for selection according to eligibility criteria; and synthesis of results found.[10]

To elaborate the guiding question "What are the aspects that enhance or weaken TB treatment outcome between PDL and/or HP?", the PVO strategy was used in accordance with JBI[11] recommendations, where P (problem) corresponded to TB, V (variable) corresponded to PDL and/or HP and O (outcome) corresponded to TB treatment outcome.

To carry out bibliographic search, we chose the Latin American and Caribbean Literature in Health Sciences (LILACS) via the Virtual Health Library (VHL), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Embase and International Literature in Health Sciences (MEDLINE) databases, which were accessed through the Coordination for the Improvement of Higher Education Personnel (CAPES - *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*) journal portal using remote access via the Federated Academic Community (CAFe - *Comunidade Acadêmica Federada*). Full-text scientific articles, published in the last five years (2019 to 2024), in English, Portuguese and Spanish, were included. Duplicate articles, literature reviews, editorials, letters, manuals and gray literature were excluded.

To compose the search expression in the "title", "abstract" and "keywords" field in selected databases, we used controlled vocabularies from Health Sciences Descriptors (DeCS), Medical Subject Headings (MESH) and Embase Subject Headings (Emtree) as well as free vocabulary also used when writing studies. The set of such vocabularies was combined using Boolean operators AND and OR and constituted the search expressions, which were adapted for each database (Chart 1).

Chart 1. Controlled and free vocabularies used in the databases for this literature review. Porto Velho, Rondônia, 2024.

Database	Search Term
LILACS	(tuberculose OR tuberculosis OR "Infecção por Mycobacterium tuberculosis" OR "Pneumologia Sanitária" OR TB OR "Infection, Mycobacterium tuberculosis" OR "Infections, Mycobacterium tuberculosis" OR "Koch Disease" OR "Koch's Disease" OR "Kochs Disease" OR "Mycobacterium tuberculosis Infection" OR "Mycobacterium tuberculosis Infections" OR tuberculoses OR "Infección por Mycobacterium tuberculosis") AND ("Pessoas Mal Alojadas" OR "Ill-Housed Persons" OR "Personas con Mala Vivienda" OR abrigos OR "Abrigos para Pessoas Sem-Teto" OR "Albergue para sem-Teto" OR "Falta de Habitação" OR "Falta de Moradia" OR "Morador de Rua" OR "Moradores de Rua" OR "Pessoas em Situação de Rua" OR "Pessoas sem Lar" OR "Pessoas sem-Teto" OR "População em Situação de Rua" OR "Sem-Teto" OR "Homeless Persons" OR "Homeless Shelter" OR "Homeless Shelters" OR homelessness OR "People, Street" OR "Shelter, Homeless" OR "Shelterless Persons" OR "Shelters for Homeless Persons" OR "Shelters, Homeless" OR "Street People" OR "Unhoused Persons" OR "Falta de Hogar" OR "Falta de Vivienda" OR "Gente sin Techo" OR "Personas en Situación de Calle" OR "Personas sin Domicilio Bien Establecido" OR "Personas sin Domicilio Fijo" OR "Personas sin Domicilio Permanente" OR "Personas sin Hogar" OR "Personas sin Refugio" OR "Personas sin Techo" OR "Refugios para Personas Sin Hogar" OR "Sin Techo" OR sintecho OR prisioneiros OR prisoners OR prisioneros OR cativo OR cativos OR detento OR detentos OR encarcerado OR encarcerados OR "Pessoa Encarcerada" OR "Pessoa Privada de Liberdade" OR "Pessoas Encarceradas" OR "Pessoas Privadas de Liberdade" OR "População Privada de Liberdade" OR preso OR "Preso Político" OR presos OR "Presos Políticos" OR "Prisioneiro Político" OR "Prisioneiros Políticos" OR reféns OR hostage OR hostages OR prisoner OR cautivo OR cautivos OR detenido OR detenidos OR encarcelado OR encarcelados OR "Persona Encarcelada" OR "Persona Privada de Libertad" OR "Personas Encarceladas" OR "Personas Privadas de Libertad" OR preso OR "Preso Político" OR presos "Presos Políticos" OR prisionero OR "Prisionero Político" OR "Prisioneros Políticos" OR rehenes) AND ("Resultado do Tratamento" OR "Treatment Outcome" OR "Resultado del Tratamiento" OR "Efetividade Clínica" OR "Efetividade de Tratamento" OR "Efetividade do Tratamento" OR "Eficácia Clínica" OR "Eficácia de Tratamento" OR "Eficácia do Tratamento" OR

	"Resultado Relevante ao Paciente" OR "Resultado da Reabilitação" OR "Resultado de Reabilitação" OR "Resultado de Tratamento" OR "Resultados Intermediários de Saúde" OR "Resultados da Promoção de Saúde" OR "Resultados de Intervenções em Saúde" OR "Resultados de Saúde" OR "Clinical Effectiveness" OR "Clinical Efficacy" OR "Effectiveness, Clinical" OR "Effectiveness, Treatment"or "Efficacy, Clinical" or"Efficacy, Treatment" OR "Outcome, Patient-Relevant" OR "Outcome, Rehabilitation" or"Outcome, Treatment" OR "Outcomes, Patient-Relevant" OR "Patient Relevant Outcome" OR "Patient-Relevant Outcome" OR "Patient-Relevant Outcomes" OR "Rehabilitation Outcome" OR "Treatment Effectiveness" OR "Treatment Efficacy" OR "Efectividad Clínica" OR "Efectividad del Tratamiento" OR "Eficacia Clínica" OR "Eficacia del Tratamiento" OR "Rehabilitación Externa" OR "Resultado Relevante al Paciente" OR "Resultado Relevante para el Paciente" OR "Resultado de la Rehabilitación" OR "Resultados Intermedios de Salud" OR "Resultados de Intervenciones en Salud" OR "Resultados de Salud" OR "Resultados de la Promoción de la Salud") AND (db:("LILACS")
Web of science	((TS＝(Tuberculosis OR "Infection, Mycobacterium tuberculosis" OR "Infections, Mycobacterium tuberculosis" OR "Koch Disease" OR "Koch's Disease" OR "Kochs Disease" OR "Mycobacterium tuberculosis Infection" OR "Mycobacterium tuberculosis Infections" OR Tuberculoses)) AND TS＝("Ill-Housed Persons" OR "Homeless Persons" OR "Homeless Shelter" OR "Homeless Shelters" OR Homelessness OR "People, Street" OR "Shelter, Homeless" OR "Shelterless Persons" OR "Shelters for Homeless Persons" OR "Shelters, Homeless" OR "Street People" OR "Unhoused Persons" OR "Prisoners Hostage" OR Hostages OR Prisoner)) AND TS＝("Treatment Outcome" OR "Clinical Effectiveness" OR "Clinical Efficacy" OR "Effectiveness, Clinical" OR "Effectiveness, Treatment"OR "Efficacy, Clinical" OR "Efficacy, Treatment" OR "Outcome, Patient-Relevant" OR "Outcome, Rehabilitation" OR"Outcome, Treatment" OR "Outcomes, Patient-Relevant" OR "Patient Relevant Outcome" OR "Patient-Relevant Outcome" OR "Patient-Relevant Outcomes" OR "Rehabilitation Outcome" OR "Treatment Effectiveness" OR "Treatment Efficacy")
Medline (MeSH Terms)	((Tuberculosis OR "Infection, Mycobacterium tuberculosis" OR "Infections, Mycobacterium tuberculosis" OR "Koch Disease" OR "Koch's Disease" OR "Kochs Disease" OR "Mycobacterium tuberculosis Infection" OR "Mycobacterium tuberculosis Infections" OR Tuberculoses[MeSH Terms]) AND ("Ill-Housed Persons" OR "Homeless Persons" OR "Homeless Shelter" OR "Homeless Shelters" OR Homelessness OR "People, Street" OR "Shelter, Homeless" OR "Shelterless Persons" OR "Shelters for Homeless Persons" OR "Shelters, Homeless" OR "Street People" OR "Unhoused Persons" OR "Prisoners Hostage" OR Hostages OR Prisoner[MeSH Terms])) AND ("Treatment Outcome" OR "Clinical Effectiveness" OR "Clinical Efficacy" OR "Effectiveness, Clinical" OR "Effectiveness, Treatment"OR "Efficacy, Clinical" OR "Efficacy, Treatment" OR "Outcome, Patient-Relevant" OR "Outcome, Rehabilitation" OR"Outcome, Treatment" OR "Outcomes, Patient-Relevant" OR "Patient Relevant Outcome" OR "Patient-Relevant Outcome" OR "Patient-Relevant Outcomes" OR "Rehabilitation Outcome" OR "Treatment Effectiveness" OR "Treatment Efficacy"[MeSH Terms])
Medline (título, resumo e palavras-chave)	(TITLE-ABS-KEY (tuberculosis OR "infection, mycobacterium tuberculosis" OR "infections, mycobacterium tuberculosis" OR "koch disease" OR "koch's disease" OR "kochs disease" OR "mycobacterium tuberculosis infection" OR "mycobacterium tuberculosis infections" OR tuberculoses) AND TITLE-ABS-KEY ("ill-housed persons" OR "homeless persons" OR "homeless shelter" OR "homeless shelters" OR homelessness OR "people, street" OR "shelter, homeless" OR "shelterless persons" OR "shelters for homeless persons" OR "shelters, homeless" OR "street people" OR "unhoused persons" OR "prisoners hostage" OR hostages OR prisoner) AND TITLE-ABS-KEY ("treatment outcome" OR "clinical effectiveness" OR "clinical efficacy" OR "effectiveness, clinical" OR "effectiveness, treatment" OR "efficacy, clinical" OR "efficacy, treatment" OR "outcome, patient-relevant" OR "outcome, rehabilitation" OR "outcome, treatment" OR "outcomes, patient-relevant" OR "patient relevant outcome" OR "patient-relevant outcome" OR "patient-relevant outcomes" OR "rehabilitation outcome" OR "treatment effectiveness" OR "treatment efficacy"))
Scopus	('tuberculosis'/exp OR tuberculosis OR 'infection, mycobacterium tuberculosis' OR 'infections, mycobacterium tuberculosis' OR 'koch disease' OR 'kochs disease' OR 'mycobacterium tuberculosis infections' OR tuberculoses OR 'active tb'/exp OR 'active tb' OR 'active tuberculosis'/exp OR 'active tuberculosis' OR 'case of tb'/exp OR 'case of tb' OR 'cases of tb'/exp OR 'cases of tb' OR 'chronic tuberculosis'/exp OR 'chronic tuberculosis' OR 'infection by m. tuberculosis'/exp OR 'infection by m. tuberculosis' OR 'infection by mycobacterium tuberculosis'/exp OR 'infection by mycobacterium tuberculosis' OR 'infection due to m. tuberculosis'/exp OR 'infection due to m. tuberculosis' OR 'infection due to mycobacterium tuberculosis'/exp OR 'infection due to mycobacterium tuberculosis' OR 'infection of m. tuberculosis'/exp OR 'infection of m. tuberculosis' OR 'infection of mycobacterium tuberculosis'/exp OR 'infection of mycobacterium tuberculosis' OR 'm. tuberculosis infection'/exp OR 'm. tuberculosis infection' OR 'minimal tuberculosis'/exp OR 'minimal

	tuberculosis' OR 'minimum tuberculosis'/exp OR 'minimum tuberculosis' OR 'mycobacterium tuberculosis infection'/exp OR 'mycobacterium tuberculosis infection' OR 'tb (tuberculosis)'/exp OR 'tb (tuberculosis)' OR 'tb case'/exp OR 'tb case' OR 'tb cases'/exp OR 'tb cases' OR 'tb disease'/exp OR 'tb disease' OR 'tb infection'/exp OR 'tb infection' OR 'tuberculous infection'/exp OR 'tuberculous infection' OR 'tuberculous lesion'/exp OR 'tuberculous lesion') AND ('ill-housed persons':ti,ab,kw OR 'homeless shelter':ti,ab,kw OR 'homeless shelters':ti,ab,kw OR homelessness:ti,ab,kw OR 'people, street':ti,ab,kw OR 'shelter, homeless':ti,ab,kw OR 'shelters for homeless persons':ti,ab,kw OR 'shelters, homeless':ti,ab,kw OR 'street people':ti,ab,kw OR 'homeless person':ti,ab,kw OR 'homeless households':ti,ab,kw OR 'homeless people':ti,ab,kw OR 'homeless persons':ti,ab,kw OR 'homeless population':ti,ab,kw OR 'ill-housed people':ti,ab,kw OR 'people living on the streets':ti,ab,kw OR 'shelterless persons':ti,ab,kw OR 'unhoused persons':ti,ab,kw OR 'vagabond':ti,ab,kw OR 'vagrant people':ti,ab,kw OR 'vagrant person':ti,ab,kw OR 'prisoners hostage':ti,ab,kw OR hostages:ti,ab,kw OR prisoner:ti,ab,kw OR 'incarcerated offender':ti,ab,kw OR 'incarcerated offenders':ti,ab,kw OR 'incarcerated population':ti,ab,kw OR inmate:ti,ab,kw OR inmates:ti,ab,kw OR prisoners:ti,ab,kw) AND (((((('treatment outcome':ti,ab,kw OR 'clinical effectiveness':ti,ab,kw OR 'clinical efficacy':ti,ab,kw OR 'patient relevant outcome':ti,ab,kw OR 'rehabilitation outcome':ti,ab,kw OR 'treatment effectiveness':ti,ab,kw OR 'treatment efficacy':ti,ab,kw OR 'health care outcome':ti,ab,kw) AND 'process assessment':ti,ab,kw OR 'healthcare outcome':ti,ab,kw) AND 'process assessment':ti,ab,kw OR 'medical futility':ti,ab,kw OR outcome:ti,ab,kw) AND 'process assessment':ti,ab,kw AND 'health care':ti,ab,kw OR outcome:ti,ab,kw) AND 'process assessment, health care':ti,ab,kw OR 'outcome management':ti,ab,kw OR 'patient outcome':ti,ab,kw OR 'therapeutic outcome':ti,ab,kw OR 'treatment outcome':ti,ab,kw)
Embase	(tuberculose OR tuberculosis "Infecção por Mycobacterium tuberculosis" OR "Pneumologia Sanitária" OR tb OR "Infection, Mycobacterium tuberculosis" OR "Infections, Mycobacterium tuberculosis" OR "Koch Disease" OR "Koch's Disease" OR "Kochs Disease" OR "Mycobacterium tuberculosis Infection" OR "Mycobacterium tuberculosis Infections" OR tuberculoses OR "Infección por Mycobacterium tuberculosis") AND ("Pessoas Mal Alojadas" OR "Ill-Housed Persons" OR "Personas con Mala Vivienda" OR abrigos OR "Abrigos para Pessoas Sem-Teto" OR "Albergue para sem-Teto" OR "Falta de Habitação" OR "Falta de Moradia" OR "Morador de Rua" OR "Moradores de Rua" OR "Pessoas em Situação de Rua" OR "Pessoas sem Lar" OR "Pessoas sem-Teto" OR "População em Situação de Rua" OR "Sem-Teto" OR "Homeless Persons" OR "Homeless Shelter" OR "Homeless Shelters" OR homelessness OR "People, Street" OR "Shelter, Homeless" OR "Shelterless Persons" OR "Shelters for Homeless Persons" OR "Shelters, Homeless" OR "Street People" OR "Unhoused Persons" OR "Falta de Hogar" OR "Falta de Vivienda" OR "Gente sin Techo" OR "Personas en Situación de Calle" OR "Personas sin Domicilio Bien Establecido" OR "Personas sin Domicilio Fijo" OR "Personas sin Domicilio Permanente" OR "Personas sin Hogar" OR "Personas sin Refugio" OR "Personas sin Techo" OR "Refugios para Personas Sin Hogar" OR "Sin Techo" OR sintecho OR prisioneiros OR prisoners OR prisioneros OR cativo OR cativos OR detento OR detentos OR encarcerado OR encarcerados OR "Pessoa Encarcerada" OR "Pessoa Privada de Liberdade" OR "Pessoas Encarceradas" OR "Pessoas Privadas de Liberdade" OR "População Privada de Liberdade" OR preso OR "Preso Político" OR presos OR "Presos Políticos" OR "Prisioneiro Político" OR "Prisioneiros Políticos" OR reféns OR hostage OR hostages OR prisoner OR cautivo OR cautivos OR detenido OR detenidos OR encarcelado OR encarcelados OR "Persona Encarcelada" OR "Persona Privada de Libertad" OR "Personas Encarceladas" OR "Personas Privadas de Libertad" OR preso OR "Preso Político" OR presos "Presos Políticos" OR prisionero OR "Prisionero Político" OR "Prisioneros Políticos" OR rehenes) AND ("Resultado do Tratamento" OR "Treatment Outcome" OR "Resultado del Tratamiento" OR "Efetividade Clínica" OR "Efetividade de Tratamento" OR "Efetividade do Tratamento" OR "Eficácia Clínica" OR "Eficácia de Tratamento" OR "Eficácia do Tratamento" OR "Resultado Relevante ao Paciente" OR "Resultado da Reabilitação" OR "Resultado de Reabilitação" OR "Resultado de Tratamento" OR "Resultados Intermediários de Saúde" OR "Resultados da Promoção de Saúde" OR "Resultados de Intervenções em Saúde" OR "Resultados de Saúde" OR "Clinical Effectiveness" OR "Clinical Efficacy" OR "Effectiveness, Clinical" OR "Effectiveness, Treatment"or "Efficacy, Clinical" or"Efficacy, Treatment" OR "Outcome, Patient-Relevant" OR "Outcome, Rehabilitation" or"Outcome, Treatment" OR "Outcomes, Patient-Relevant" OR "Patient Relevant Outcome" OR "Patient-Relevant Outcome" OR "Patient-Relevant Outcomes" OR "Rehabilitation Outcome" OR "Treatment Effectiveness" OR "Treatment Efficacy" OR "Efectividad Clínica" OR "Efectividad del Tratamiento" OR "Eficacia Clínica" OR "Eficacia del Tratamiento" OR "Rehabilitación Externa" OR "Resultado Relevante al Paciente" OR "Resultado Relevante para el

	Paciente" OR "Resultado de la Rehabilitación" OR "Resultados Intermedios de Salud" OR "Resultados de Intervenciones en Salud" OR "Resultados de Salud" OR "Resultados de la Promoción de la Salud")

Source: prepared by the authors (2024).

After searching for articles in the databases, the results were exported to the Rayyan QCRI[12] software to initially identify and resolve duplicates of included studies. Subsequently, titles and abstracts were read and analyzed, considering eligibility criteria, i.e., the articles that addressed the offer of actions to combat the disease among PDL and/or HP that enhanced or weakened treatment outcome.

This process involved three researchers, two of whom were responsible for selecting the articles and a third for resolving conflicts in cases of disagreement. After reading the eligible studies in full, a descriptive synthesis was carried out, and the results were presented through a summary matrix of studies included based on authorship, year and country of publication, study objective, design and main results, which were categorized according to aspects that weaken and enhance according to sociodemographic factors, clinical conditions, psychosocial factors and aspects related to healthcare service and/or prison unit.

RESULTS

A total of 514 materials was found, of which 423 were excluded, 347 were published prior to the previously selected period and 76 were duplicates. After reading the titles and abstracts of 91 articles, 17 were identified and excluded because they were review articles and 58 because they did not answer the guiding question, considering that they addressed another study population with topics relating to hepatitis, diabetes mellitus, COVID-19, HIV, diagnostic tests, among others. In the end, 15 articles were selected and comprised the present review, considering that one could not be accessed for reading and analysis in full (Figure 1).

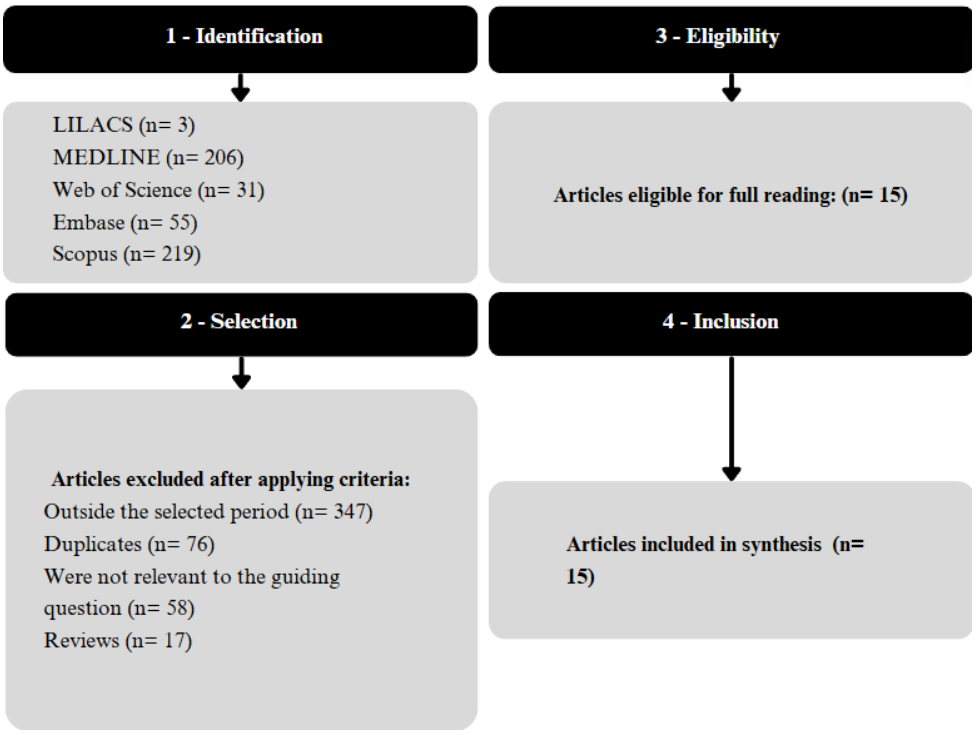

Figure 1. Flowchart of the article selection stages for this integrative literature review, 2024
Source: adapted from Aromataris & Munn (2020).

Among the articles included in the study, publication mostly occurred in 2019[4,12-14], especially in Brazil[3,16-22], with PDL [3,5,13,16-20,24], and were cohort studies (Chart 2).[13-14,20,22]

As for the main results found in the study, aspects that weaken TB treatment outcome were observed more frequently for both populations, such as TB/HIV co-infection[13-14,16-18,20-22], age[17,22], inadequate nutrition[17,22], male sex[13-14,18], alcoholism[19-20], and use of other illicit drugs.[17,20-22] Regarding the aspects that enhance TB treatment outcome, it was verified that directly observed treatment (DOT) and active search[3,6,15,17,22] were carried out between PDL and HP (Chart 2).

Among the aspects that differ between populations, PDL also presents a history of loss to follow-up and stigma related to the disease and/or incarceration condition as weaknesses.[5,13,16-17,19-20] On the other hand, the provision of housing and food assistance was verified as aspects that enhance a favorable TB treatment outcome, specifically for HP (Chart 2).[6,20]

Chart 2. Summary matrix of articles selected for this integrative literature review, 2024

Authors (year)/country of publication	Objective	Study population	Study design	Main results	
				Aspects that weaken	**Aspects that enhance**
Chong; Marín; Perez (2019) / Ecuador	Assess pulmonary TB control in a detention center and identify the risk factors associated with unsuccessful treatment in the largest prison in Ecuador.	PDL	Cross-sectional	**Sociodemographic factors:** Advanced age (50-64 years); **Clinical conditions:** TB/HIV co-infection; History of loss to follow-up **Aspects related to prison unit** Failure in active search and detection of RS; Delay in starting pulmonary TB treatment; High incidence of TB in prisons; Inadequate infrastructure.	-
Gómez et al. (2019) / Colombia	Determine the risk factors associated with TB treatment failure in HP and HIV-seropositive people in Antioquia compared to HP without HIV and compared to HIV-uninfected and non-HP people with TB.	HP	Cohort	**Sociodemographic factors:** Male sex; Age ≥ 25 years; **Clinical conditions:** Diagnosis during hospitalization; Previous treatment for TB; TB/HIV co-infection	**Aspects related to healthcare service** Diagnosis during outpatient care.

Khan et al. (2019) / Malaysia	Assess TB incidence among inmates in four Malaysian states to identify factors associated with *Mycobacterium tuberculosis* infection and treatment outcomes.	PDL	Cross-sectional	**Sociodemographic factors** Low education level; **Clinical conditions:** Presence of comorbidities such as diabetes; Smoking; History of TB relapses; **Aspects related to prison unit** History of loss to follow-up; Overcrowding and poor sanitation in prisons; Transfer of prison unit during treatment; Stigma related to the condition of deprivation of liberty; Long periods of incarceration.	-
Kim et al. (2019) / South Korea	Assess the effect of a housing provision package on treatment outcomes among homeless South Korean patients with TB.	HP	Prospective	**Sociodemographic factors** Advanced age; **Clinical conditions** Alcohol consumption; Previous history of TB. **Aspects related to healthcare service** Lack of adherence to treatment; Difficulties in obtaining social assistance. Barrier to access to healthcare.	**Interventions** Housing interventions; Nutritional support; Adherence to the community intervention program. **Aspects related to healthcare service** DOT.
Alves et al. (2020) / Brazil	Investigate factors associated with cure and abandonment outcomes in PDL affected by TB.	PDL	Observational	**Clinical conditions** Positive HIV **Aspects related to prison unit** Stigma related to the disease; Low performance of DOT; Reporting failures;	-

				Low coverage of tests for TB diagnosis and monitoring; Low performance of HIV testing; Low performance of sputum culture and chest x-ray; History of loss to follow-up; Lack of link between the healthcare team and PDL.	
Macedo, Maciel and Struchiner (2020) / Brazil	Calculate the rate of cases diagnosed with TB by prison units in Espírito Santo; present individual, clinical and institutional characteristics of cases in the ES PDL; and analyze the association between these characteristics and termination of TB treatment in this population.	PDL	Observational	**Sociodemographic factors:** Female sex; **Clinical conditions** TB/HIV co-infection **Aspects related to prison unit** Delay in starting treatment; Frequent transfers between prison units; History of loss to follow-up; Shortage of human and financial resources allocated to prison healthcare services; Stigma and segregation generated by TB.	**Aspects related to prison unit** DOT; Prison Health Program coverage; Physical structure of prison units, with characteristics such as adequate ventilation and lighting; Implementation of active RS search strategies.
Singano et al. (2020) / Malawi	Investigate TB treatment outcomes and predictors of unsuccessful treatment outcomes among inmates and non-inmates.	PDL	Cohort	**Sociodemographic factors:** Age above 35 years; **Clinical conditions** Positive HIV; Extrapulmonary TB; Overcrowding; Poor nutrition; **Aspects related to prison unit** Difficulties in identifying and diagnosing extrapulmonary TB; Lack of treatment monitoring tests;	**Aspects related to prison unit** Introduction of mass screening campaigns for TB; Expansion of the antiretroviral therapy program; Maximum security prisons, where PDL serves longer sentences, providing an opportunity for uninterrupted treatment.

				Lack of coverage of antiretroviral therapy for patients with HIV/TB co-infection; Difficulties in continuing treatment after PDL release; Lack of link between prison facilities and PDL	
Dadu et al. (2021) / Europe	Describe the diversity of incident TB case report (incident TB case report rate - number of new TB cases and relapses registered and reported per 100,000 inhabitants) and its trends in the civil and penitentiary sectors between 2014 and 2018.	PDL	Descriptive	**Clinical conditions** Malnutrition Diabetes Smoking Alcohol consumption Use of illicit drugs Previous history of TB **Aspects related to prison unit** Overcrowding Longer incarceration time.	**Aspects related to prison unit** TB protocols
Macedo, Maciel and Struchiner (2021) / Brazil	Assess the association between being deprived of liberty or homeless and failure to resolve TB cases diagnosed in Brazil in 2015.	PDL and HP	Descriptive	**Sociodemographic factors for HP:** Unemployment; **Clinical conditions** Alcohol consumption; Use of drugs; Inadequate nutrition; **Aspects related to** the most vulnerable populations such as PDL and HP **healthcare services and/or prison unit** High proportion of re-entry after treatment abandonment; **Psychosocial aspects** Low self-esteem; Difficulty perceiving symptoms; Difficulty adhering to treatment;	**Aspects related to healthcare service and/or prison unit** DOT.

				Stigma related to HP and social homelessness by PDL.	
Amede et al. (2022) / Brazil	Assess TB treatment outcomes and associated factors among inmates in prison settings in Bauchi State, Nigeria.	PDL	Retrospective	**Sociodemographic factors:** Advanced age of inmates; **Clinical conditions** TB/HIV co-infection; Comorbidities associated with advanced age; Lower body weight before treatment; Malnutrition; **Aspects related to prison unit** Transfer of patients without adequate assessment of results; Failures in the screening and assessment system; Longer incarceration time; **Psychosocial factors** Mental stress associated with prolonged incarceration.	**Aspects related to prison unit** Shorter incarceration time (up to 2 years); No transportation costs to treatment centers; Increased body weight before treatment.
Crosby et al. (2022) / England	Compare the characteristics and treatment outcomes of patients treated in RHS with patients treated in standard care, estimating the association between treatment in RHS and treatment outcomes.	HP	Cross-sectional	**Sociodemographic factors:** Underreporting of social risk factors in the data; Significant costs of RHS.	**Aspects related to healthcare service** Patients treated at RHS were more likely to complete treatment; RHS provided accommodation during treatment; DOT.
Ferreira et al. (2022) / Brazil	Analyze the unfavorable outcome of TB cases among PDL in two Brazilian states according to the SDH.	PDL	Cohort	**Sociodemographic factors:** Male sex; Black or brown skin color; Low education level; Age over 30 years;	-

				Clinical conditions Diabetes; Alcohol consumption TB/HIV co-infection; **Aspects related to prison unit** Limited access to healthcare; Absence of DOT; Loss to follow-up; Lack of implementation of social services and health systems in the prison system.	
Carvalho et al. (2023) / Brazil	Analyze morbidity and mortality and operational indicators for TB in PDL in Bahia.	PDL	Epidemiological	**Sociodemographic factors:** Female sex; Low education level; Economically active class; Limited access to information; Limited access to healthcare; **Clinical conditions** Pulmonary form of TB; TB/HIV co-infection; Alcohol use; Use of illicit drugs **Aspects related to prison unit** Low presence of government benefits; Mental disorders Loss to follow-up; Underreporting;	**Aspects related to prison unit** Delimitation of space for implementing surveillance strategies.
Gioseffi, Brignol and Werneck (2023) / Brazil	Define the sociodemographic and epidemiological profile of HP reported for TB between 2015 and 2019 in the city of Rio de Janeiro and analyze possible relationships between risk factors and TB outcomes.	HP	Cross-sectional	**Clinical conditions** Alcohol use; Use of drugs; TB/HIV co-infection. **Aspects related to healthcare service**	-

				Loss to follow-up; Lack of access to public health policies; Lack of standardization of treatment protocols, especially for cases of multidrug-resistant TB (MDR-TB);	
Rodrigues et al. (2023) / Brazil	Assess factors associated with unsuccessful TB treatment among HP compared to those who are sheltered.	HP	Cohort	**Sociodemographic factors:** Lack of access to financial and food resources; Limitations on access to education and employment; **Clinical conditions** TB/HIV co-infection; Use of illicit drugs; Mental disorders; **Aspects related to healthcare service** Lack of DOT; Loss to follow-up; **Psychosocial factors** Cultural barriers and stigma related to TB; Budget constraints and inadequate healthcare policies.	**Aspects related to healthcare service** Receiving food and transportation support; Participation in social assistance programs; Implementation of street clinics to assist HP.

Caption: SDH – Social Determinants of Health; RS - respiratory symptom; PDL - population deprived of liberty; HP - homeless people; RHS - Respiratory Home Service; TB - tuberculosis; DOT - Directly Observed Treatment.
Source: prepared by the authors (2024).

DISCUSSION

Although they live in different social contexts, PDL and HP share common aspects that increase the risk of TB and weaken treatment outcome. One of these aspects concerns sociodemographic factors, in which it was observed that the majority of individuals were men, with advanced age and a low education level.[5,14,19]

Low education level results in fewer employment opportunities, which worsens the scarcity of financial resources and results in homelessness, increased likelihood of involvement in illicit activities and, consequently, incarceration. This context of socioeconomic vulnerability translates into less access to health and adequate food, which compromises the immune system, especially in those of older age, since it is added to other chronic comorbidities, such as diabetes mellitus, hypertension and lung diseases, which are similar between PDL and HP, making them more prone to TB and unfavorable outcomes.[5,14]

In addition to the low education level, both populations face difficulties in accessing information, whether due to a lack of financial resources on the part of HP or restrictions on the use of electronic devices in prison units, which results in gaps in understanding TB signs and symptoms, impacting users' self-perception of their health status, in addition to increasing stigma regarding the disease.[20,22]

From this perspective, the healthcare service is responsible for implementing health promotion and disease prevention strategies that affect these populations, whether through active search, early diagnosis and health education actions to raise awareness, including the importance of adherence to treatment. These aspects were reinforced by studies as factors that enhance favorable TB treatment outcomes.[2,5,14,16] However, they have not yet been implemented in their entirety for some reasons, including the lack of sufficient human and financial resources.[16,19,22]

Among the clinical conditions that weakened TB treatment outcome, TB/HIV co-infection, malnutrition, use of alcohol and other illicit drugs were identified, that compromise the immune system, increases the chances of the emergence of strains resistant to antimicrobials and, consequently, a greater likelihood of signs and symptoms worsening to the point of requiring hospitalization, compromising users' quality of life while exposing them to illness due to other infections, perpetuating the transmission chain, increasing costs and increasing treatment time.[13,14,16-18,20-22,24]

In a complementary way, both populations face environmental factors that favor TB transmission. With regard to PDL, as they live in prison units, often in overcrowded conditions, in addition to being exposed to stress caused by the condition of incarceration itself.[5] HP, on the other hand, faces unsanitary conditions and constant exposure to the elements, which further weakens its health, added to the lack of access to basic hygiene conditions and continuous exposure to different forms of violence, which increases the vulnerability of this population to unfavorable TB treatment outcomes.[22]

In relation to access to healthcare services, populations face different barriers, although there are health units installed in prison environments, they are not all available 24 hours a day. Some inadequacies are identified regarding the programmatic activities recommended by the Ministry of Health in Brazil, such as the active search at the time of entry, mass tracing, contact investigation and treatment during and after the period of PDL incarceration, which can put the extramural population's health at risk.[9,20]

Thus, although prison units are characterized as controlled environments, where it is possible to monitor the flow of people, with protocols for screening and elucidating cases, these factors should enhance favorable TB treatment outcomes, unlike what is discussed in the literature. However, the lack of the aforementioned programmatic activities results in the loss of opportunities to reduce TB in and outside prison settings, hinders the creation and strengthening of bonds, as well as the implementation and implementation of biosafety measures that favor TB cure, control and coping.[22,23]

With regard to HP, there are several barriers that make it difficult to diagnose and continue TB treatment, such as the fact that, due to the condition experienced on the street, many

of them travel or are located in areas not covered by Primary Health Care, with restrictions on human and material resources for Street Outreach Office teams' work in Brazil. Furthermore, bureaucratic requirements, such as the need for documentation or a fixed address, deprive these individuals of access to necessary care, aiming to fully meet their health needs and, consequently, to implement the doctrinal principle of equity.[21]

Added to this process, frequent changes of location by HP further compromise continuity of care, creation and strengthening of bonds with the team. In many cases, for fear of not finding patients the next day, healthcare professionals deliver medications for a longer period of time, which without a safe place to store them are often lost and/or stolen, which impairs adherence to treatment, weakening case outcomes.[3]

In this scenario, considering that TB is directly related to the precarious conditions in which these populations survive/live, it is not possible to dissociate a reduction in cases and an improvement in living conditions. Therefore, health actions can and should work together with the social assistance service and other government bodies to not only treat TB, but also offer support, such as food, housing and transportation assistance throughout treatment, as highlighted by Crosby *et al*. (2022)[6] as enhancers for disease outcomes.

Therefore, implications of these findings for public health policies are multifaceted, requiring an integrated approach to intervention strategies, given the impact of sociodemographic, economic and environmental factors on vulnerability to TB among the populations studied. In view of this, it is essential to approach not only treatment, but also aiming to improve the Social Determinants of Health to mitigate the precarious living conditions that PDL and HP are part of in the health-disease process and which exacerbate vulnerability to TB.

Moreover, the increase in human and financial resources allocated to health promotion and disease prevention strategies, such as continuous training of professionals and screening based on active search, both in prison units and offerings to the community who experience life on the streets, can ensure early diagnosis and immediate initiation of treatment, which could help achieve better results and reduce costs associated with TB hospitalizations.

CONCLUSION

Even though this study identified similar factors that weaken and enhance TB treatment outcomes between PDL and HP, the paths to achieving therapeutic success differ due to the different logistical aspects that each population faces in their survival and access to healthcare services, requiring intersectoral interventions with coping strategies adapted to the specificities of each population group for TB screening, diagnosis and treatment.

As a limitation of this study, there was a lack of scientific papers on public health that compare health actions between different population contexts. This gap makes it difficult to understand and identify vulnerabilities and, consequently, compromises the delimitation of strategies aimed at mitigating losses related to unfavorable TB treatment outcomes, especially in populations considered key to combating TB.

Given this perspective, the importance of epidemiological studies aimed at understanding the determinants that affect outcomes of TB cases is also highlighted, especially when considering that advances in implementing actions to control and combat the disease require transmission chain interruption, which are potentiated as an epidemiological scenario among vulnerable populations.

REFERENCES

1. World Health Organization. Global Tuberculosis Report 2023. Geneva: WHO; 2023. Disponível em: https://www.who.int/publications/i/item/9789240037021. Acesso em: 18 nov. 2023.

2. Uplekar M, Weil D, Lonnroth K, Jaramillo E, Lienhardt C, Dias HM, et al. WHO's new end TB strategy. Lancet. 2015;385(9979):1799-1801. https://doi.org/10.1016/S0140-6736(15)60570-0

3. Macedo LR, Maciel ELN, Struchiner CJ. Populações vulneráveis e o desfecho dos casos de tuberculose no Brasil. Ciênc Saúde Colet. 2021;26(10):4749-4759. http://dx.doi.org/10.1590/1413-812320212610.24132020.

4. Souza ABF, Carvalho AC, Sakai AM, Novaes LAM, Oliveira LR, Ferreira NMA et al. Tuberculose pulmonar em população privada de liberdade em estado do sul do Brasil, 2016-2022. Braz J Infect Dis. 2023;27(S1):103665. https://doi.org/10.1016/j.bjid.2023.103665

5. Khan AH, Sulaiman SAS, Muttalif ARA, Hassali MAA, Aftab RA, Khan TM. Incidence and risk factors associated with tuberculosis treatment outcomes among prisoners: a multicenter study in Malaysia. Infect Dis Clin Pract. 2019;27(3):148-154. http://dx.doi.org/10.1097/IPC.0000000000000719

6. Outcomes of a residential respite service for homeless people with tuberculosis in London, UK: a cross-sectional study. Perspectives in Public Health. 2023;143(2):89-96. http://dx.doi.org/10.1177/1757913922109354 4

7. Gioseffi JR, Batista R, Brignol SM. Tuberculosis, vulnerabilities, and HIV in homeless persons: a systematic review. Rev Saúde Pública 2022;56:43. https://doi.org/10.11606/s1518-8787.2022056003964

8. Pavinati G, Lima LV, Radovanovic CAT, Magnabosco GT. Disparidades geoprogramáticas do desempenho de indicadores da tuberculose na população em situação de rua no Brasil: uma abordagem ecológica. Rev Bras Epidemiol. 2023;26:e230048. https://doi.org/10.1590/1980-549720230048.2

9. BRASIL. Ministério da Saúde. Manual de Recomendações para o Controle da Tuberculose no Brasil. Brasília: Ministério da Saúde, 2019. Disponível em: https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/svsa/tuberculose/manual-de-recomendacoes-e-controle-da-tuberculose-no-brasil-2a-ed.pdf/view

10. Dantas HLL, Costa CRB, Costa LMC, Lúcio IML, Comassetto I. Como elaborar uma revisão integrativa: sistematização do método científico. Revista Recien, 2022;12(37):334-345. https://doi.org/10.24276/rrecien2022.12.37.334-345

11. Aromataris E, Munn Z. JBI Manual for Evidence Synthesis. JBI; 2020. https://doi.org/10.46658/JBIMES-24-01

12. Ouzzani M, Hammady H, Fedorowicz Z, Elmagarmid A. Rayyan – a web and mobile app for systematic reviews. Systematic Reviews. 2016;5(210). https://doi.org/10.1186/s13643-016-0384-4

13. Chong F, Marín D, Pérez F. Baja captación y éxito en el tratamiento para la tuberculosis en una cárcel de Ecuador. Rev Panam Salud Publica. 2019;43:e106. https://doi.org/10.26633/RPSP.2019.106

14. Gómez LM, Paniagua-Saldarriaga LA, Richert Q, Keynan Y, Montes F, López L, et al. Homelessness and HIV: a combination predictive of poor tuberculosis treatment outcomes and in need of innovative strategies to improve treatment completion. Am J Trop Med Hyg. 2019;100(4):932-939. https://doi.org/10.4269/ajtmh.18-0305

15. Kim H, Choi H, Yu S, Lee AY, Kim HO, Joh JS, et al. Impact of housing provision package on treatment outcome among homeless tuberculosis patients in South Korea. Asia Pac J Public Health. 2019;31(7):603-611. https://doi.org/10.1177/1010539519871779

16. Alves KKAF, Borralho LM, Araújo AJ, Bernardino IM, Figueiredo TMRM. Fatores associados à cura e ao abandono do

tratamento da tuberculose na população privada de liberdade. Rev Bras Epidemiol. 2020;23:E200079. https://doi.org/10.1590/1980-549720200079

17. Macedo LR, Maciel ELN, Struchiner CJ. Fatores associados à tuberculose na população privada de liberdade no Espírito Santo. Rev Saúde Pública. 2020;54:67. https://doi.org/10.11606/s1518-8787.2020054001818

18. Amede PO, Adedire E, Usman A, Ameh CA, Umar FS, Umeokonkwo CD, et al. Drug-susceptible tuberculosis treatment outcomes and its associated factors among inmates in prison settings in Bauchi State, Nigeria, 2014–2018. PLoS One. 2022;17(7): e0270819. https://doi.org/10.1371/journal.pone.0270819

19. Ferreira MRL, Andrade RLP, Bossonario PA, Fiorati RC, Arcêncio RA, Rezende CEM et al. Determinantes sociais da saúde e desfecho desfavorável do tratamento da tuberculose no sistema prisional. Ciênc Saúde Colet. 2022;27(12):4451-4459. http://dx.doi.org/10.1590/1413-812320222712.08632022

20. Carvalho KLH, Skalinski LM, Costa FAMM, Penteado M. Indicadores da tuberculose na população carcerária do estado da Bahia-Brasil: um estudo de série temporal. Gerenc Polit Saude. 2023;22:1-19. http://dx.doi.org/10.11144/javeriana.rgps22.itpc

21. Gioseffi JR, Brignol SMS, Werneck GL. Perfil sociodemográfico das pessoas em situação de rua notificadas com tuberculose no Município do Rio de Janeiro, Brasil, nos anos de 2015 a 2019. Cad Saúde Pública. 2023;39(10):e00051122. http://dx.doi.org/10.1590/0102-311xpt051122

22. Rodrigues OAS, Mogaji HO, Alves LC, Flores-Ortiz R, Cremonese C, Nery JS. Factors associated with unsuccessful tuberculosis treatment among homeless persons in Brazil: a retrospective cohort study from 2015 to 2020. PLoS Negl Trop Dis. 2023;17(10):e0011685. http://dx.doi.org/10.1371/journal.pntd.0011685

23. Dadu A, Ciobanu A, Hovhannesyan A, Alikhanova N, Korotych O, Gurbanova E, et al. Tuberculosis notification trends and treatment outcomes in penitentiary and civilian health care sectors in the WHO European Region. Int J Environ Res Public Health 2021;18(18):9566. http://dx.doi.org/10.3390/ijerph18189566

24. Singano V, Kip S, Ching'ani W, Chiwaula L. Tuberculosis treatment outcomes among prisoners and general population in Zomba, Malawi. BMC Public Health 2020;20:700. http://dx.doi.org/10.1186/s12889-020-08841-z

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