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Integrating tuberculosis and mental health services: global receptivity of national tuberculosis program directors

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SUMMARY

SETTING: A global survey of National Tuberculosis Program (NTP) directors.

OBJECTIVES: To assess the perceived mental health needs of persons with tuberculosis (TB), current practices, and receptivity to integrating evidence-based mental and substance use treatment into national TB guidelines.

DESIGN: Semi-structured survey of NTP directors from 26 countries of all income levels using a standardized questionnaire.

RESULTS: Of the 26 countries, 21 were classified as high incidence and/or burden countries for TB, TB and human immunodeficiency virus coinfection, and/or drug-resistant TB. Two NTPs included routine screening for any mental disorder, four assessed alcohol or drug use, and five had standard protocols for the co-management of disorders. If effective and low-cost integrated care models were available, 17 NTP directors felt that it was highly likely, and five somewhat likely, that their NTPs would integrate mental health treatment into national TB guidelines and services. The main perceived barriers to service integration were limited capacity, not recognizing mental health as a problem, insufficient resources, and TB-related social stigma.

CONCLUSIONS: NTPs currently do not address mental disorders as part of routine practice. Nevertheless, receptivity is high, which creates a ripe opportunity to integrate the management of TB and mental disorders into the policies and guidelines of NTPs worldwide.

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RÉSUMÉ

Une enquête mondiale auprès des directeurs des programmes nationaux TB (PNT).

Evaluer les besoins perçus en matière de santé mentale des personnes atteintes de tuberculose (TB), les pratiques actuelles et la recevabilité d'intégrer un traitement basé sur des preuves en matière de santé mentale et d'addiction dans les directives TB nationales.

Etude qualitative des directeurs de PNT de 26 pays, ayant toute la gamme des revenus, grâce à un questionnaire standardisé.

Sur les 26 pays, 21 ont été classés comme pays à incidence élevée et/ou durement affectés par la TB, la coinfection TB/virus de l'immunodéficience humaine, et/ou la TB résistante. Deux PNT ont inclus un dépistage de routine de tout problème mental, quatre ont évalué la consommation d'alcool ou de drogue, et cinq avaient des protocoles standards de prise en charge conjointe des troubles. Si des modèles de soins intégrés efficaces et peu onéreux sont disponibles, 17 directeurs ont estimé qu'il était très probable et cinq qu'il était assez probable que leurs PNT intègre un traitement de santé mentale dans les directives nationales et les services TB. Les principaux obstacles perçus à l'intégration des services ont été les limites de leurs capacités, la non reconnaissance du problème, le manque de ressources et la stigmatisation sociale liée à la TB.

Les PNT ne s'occupent pas actuellement les troubles mentaux dans la cadre de leurs pratiques de routine, mais la réceptivité est élevée ce qui crée une bonne opportunité d'intégrer la prise en charge de la TB et des troubles mentaux dans les politiques et les directives des PNT dans le monde.

RESUMEN

Una encuesta mundial dirigida a los gestores de los Programas Nacionales de Tuberculosis (PNT).

Evaluar las necesidades de salud mental percibidas en las personas con tuberculosis(TB),las prácticas corrientes y la receptividad a una integración, en las directrices nacionales sobre TB, de intervenciones fundamentadas en datos fidedignos para el tratamiento de la salud mental y el consumo de sustancias.

Fue este un estudio cualitativo con un cuestionario normalizado al cual respondieron los gestores del PNT de 26 países con todos los niveles de ingresos.

De los 26 países, 21 se clasificaron con alta incidencia o alta carga de morbilidad por TB, coinfección por el virus de la inmunodeficiencia humana (VIH) y TB y TB farmacorresistente o alguna combinación de ellas. Dos PNT incluían la detección sistemática de todo trastorno mental, cuatro evaluaban el consumo de alcohol o drogas y cinco programas contaban con protocolos corrientes de manejo conjunto de los trastornos. En caso de contar con modelos integrados de atención eficaces y de bajo costo, 17 gestores consideraron que era sumamente probable y cinco que había alguna probabilidad de que sus PNT integraran el tratamiento de salud mental en las directrices nacionales y los servicios de TB. Los principales obstáculos a la integración de los servicios fueron la capacidad limitada, la falta de reconocimiento de la enfermedad mental como un problema, la insuficiencia de recursos y la estigmatización social relacionada con la TB.

En la actualidad los PNT no abordan los problemas de salud mental como parte de la práctica corriente, pero existe una alta receptividad que ofrece la mejor oportunidad para la integración del

manejo de la TB y los trastornos mentales en las políticas y las directrices de los PNT en todo el mundo.

Keywords

depression; anxiety; psychosis; substance use disorders; patient-centered care

MENTAL AND SUBSTANCE use disorders frequently co-exist with tuberculosis (TB),[1–4] and are associated with delays in seeking care,[5] missed doses,[2] poor quality of life, disability and loss to follow-up.[6] Mental and substance use disorders may thus increase the risk of treatment failure[7] and drug resistance[8] and, consequently, greater morbidity, mortality,[7,9] and community transmission.[3,10,11] They therefore represent a significant barrier to TB elimination. Individuals with TB have a significantly higher risk for depression than the general population[1–3,12,13] due to biologic, social and behavioral factors.[10] Individuals co-infected with the human immunodeficiency virus (HIV) have an even greater risk of depression,[14] which is significantly associated with worse health status involving mobility, pain and discomfort, self-care, cognition, interpersonal activities, sleep and energy.[12]

Economic modeling suggests that every US$1 invested in depression/anxiety and TB can yield an economic return of respectively US$4 and US$43.[15–17] A compelling economic argument can therefore be made for integrating TB and mental health services. However, services for psychiatric and substance-related disorders are consistently underfunded, particularly in low-resource settings.[18] Public expenditure in low- and middle-income countries is estimated to be US$2 per capita, most of which is dedicated to acute care rather than community-based services.[18] Treating comorbid depression/anxiety among individuals with TB and TB-HIV coinfection at the primary care level may increase economic gains, which in turn could stimulate political commitment to treat these and other psychiatric disorders, including substance use disorders.[19]

Although the 2015–2035 World Health Organization (WHO) End TB Strategy explicitly calls for the integration of mental health and TB treatment,[20] formal WHO guidance is currently limited.[21–25] The WHO Department of Mental Health and Substance Abuse recommends several effective low-cost non-pharmaceutical mental health interventions that can be delivered by non-specialists in primary care,[26,27] and there is a great need for such models to be tested in the context of TB services so that patients can receive ‘one-stop shop’ care in low-resource settings to improve outcomes. However, broad dissemination of such models will require significant political buy-in to integrate such practices within national TB care systems.

We wished to assess the perceived receptivity of National TB Programs (NTPs) to mental health service integration in high TB burden and high TB incidence countries.

METHODS

Study design

Cross-sectional semi-structured interviews with NTP directors from high TB burden countries were conducted to assess the perceived mental health- and substance use-related challenges to the provision of TB care; current practices, protocols, and access to care; and receptivity to the integration of TB and mental health treatment. That is, if the training and tools are ready, does the political will to implement them broadly exist?

The study protocol was approved by the Ethics Advisory Group of the International Union Against Tuberculosis and Lung Disease (The Union), Paris, France, and the Institutional Review Board of the New York State Psychiatric Institute, New York, NY, USA (protocol #7210).

Sample and recruitment

We contacted via e-mail and/or telephone all NTP directors from the top 50 countries identified by the WHO as having the highest burden and/or incidence of TB, TB-HIV, and/or drug-resistant TB (DR-TB) using contact information available through The Union and WHO Global TB Programme. Additional NTP directors were recruited through ‘snowball’ networking and informal channels. We invited NTP directors to participate in an in-person or Skype™ (Skype Communications, Palo Alto, CA, USA)/telephone interviews, or complete the survey in writing. All participants provided informed verbal consent.

Measure

The semi-structured quantitative questionnaire comprised 22 questions about challenges to TB treatment success, whether or not protocols to identify and manage mental and substance use disorders are available, and receptivity to TB and mental health service integration. To assess perceived barriers, respondents were asked, ‘In your opinion, what are the top five barriers to TB treatment adherence, completion and cure in [name of country]?’ and ‘Which of the following co-occurring [medical, psychiatric and substance-related] disorders affect TB patients in [name of country]?’ The existence and availability of standard protocols and community treatment were assessed by asking ‘Is the assessment of any of the following mental health conditions part of routine practice according to national TB protocols/guidelines?’ and ‘If a TB patient is diagnosed with a co-occurring [mental or substance-use disorder], are there any national guidelines for referral or treatment for their management?’ Finally, interviewees were told that ‘Several low-cost non-pharmaceutical mental health interventions are available that can be delivered by non-mental health specialists and have been effective in a range of low-resource settings’ and then asked, ‘If the necessary training on the above-mentioned interventions were available in [name of country], what is the likelihood that it would be integrated into standard TB care?’ All open-ended questions were coded and analyzed quantitatively.

RESULTS

Between October 2015 and June 2017, we interviewed NTP directors from 26 countries face-to-face (n = 8), over the telephone/Skype (n = 13), or in writing (n = 5) in the interviewee's preferred language (English, Spanish, Portuguese or French). NTP directors represented 3 (12%) high-, 4 (15%) upper middle-, 8 (31%) lower middle- and 11 (42%) low-income countries (Figure), of which 21 (81%) were classified as high incidence and/or burden countries for TB, TB-HIV coinfection, and/or DR-TB (Table 1).[28] Whereas the range of country income levels were well represented in the sample, regional representation was limited due to non-response, unavailability of contact information, or language barriers. Eighteen (69%) of the countries were from sub-Saharan Africa; this overrepresentation was likely because the initial recruitment was done at the 2015 Union Conference in South Africa.

Perceived barriers to tuberculosis treatment success

Table 2 summarizes the top perceived barriers to treatment success, including general challenges and those related to the co-management of medical and psychiatric comorbidities. With regard to barriers to TB treatment success, the most frequent responses were lack of knowledge (58%), side effects (35%), distance and/or transportation difficulties (35%), poverty (31%), substance abuse (27%), system failures (27%) and TB-related social stigma (23%). Nobody (0%) reported depression or other non-substance use-related mental health issues as one of the top five barriers to TB treatment success.

The most frequent co-occurring medical disorders cited to be challenges for TB care in each country were HIV (92%), diabetes mellitus (65%), heart disease and/or hypertension (19%), and other medical complications (15%). In relation to co-occurring psychiatric disorders, the most commonly perceived challenges were related to depression (58%), psychosis (50%), anxiety (42%), and trauma-related disorders (23%). Most interviewees identified problem alcohol use (88%) as a difficulty, and nearly half (46%) identified tobacco use. Respectively four (15%) and eight (31%) countries identified marijuana and other illicit drugs to be a challenge to TB care and prevention.

Current national guidelines, protocols and access to mental health services

Among the 26 countries, only two (8%) described routine screening for depression, anxiety, psychosis, and/or trauma-related disorders and four (15%) systematically screened for alcohol and drug use. Five countries (21%) had national guidelines for the co-management of TB and mental or substance use disorders. The top vulnerable subpopulations identified by respondents were individuals co-infected with HIV (77%), the incarcerated (42%), those aged <15 years (42%), migrants and refugees (38%), the homeless (23%), and the elderly (12%). Beyond hospital and community-based care, the most common specialized settings in which anti-tuberculosis treatment was offered were prisons (96%), psychiatric hospitals (46%), refugee camps (35%), and homeless shelters (19%).

Integrated tuberculosis and human immunodeficiency virus care

Anti-tuberculosis treatment is integrated into primary care in many countries (73%), whereas some (12%) have achieved partial integration; however, only six (23%) countries have fully integrated TB-HIV programs, whereas 58% have some integration of care. Peer support groups were organized much more frequently for individuals living with HIV (86%) than TB (54%), and only a subset (12%) of individuals with DR-TB were offered peer support. Approximately one fifth of all countries offered mental health counseling to individuals with TB and/or HIV (19% and 23%, respectively), and the same proportion referred TB patients for psychiatric consultations as needed (23%). Only 14% of NTP directors believed that psychiatric referrals were provided for individuals with HIV.

Receptivity to tuberculosis and mental health treatment integration

When asked about the likelihood of integrating TB and mental health services if training was offered for low-cost, effective interventions, 22 expressed high (65%) or some (19%) receptivity to the integration of TB and mental health treatment; only four (15%) believed it would be highly unlikely in their current environment (Table 3). The receptivity of frontline TB providers was perceived to be less strong (46% very and 46% somewhat receptive). However, several NTP directors qualified their answers by saying that TB providers were likely to comply with national guidelines and protocols if given appropriate guidance. When asked to rate the degree to which capacity, awareness, resources, and stigma were barriers to mental health care integration at the national level, they identified limited capacity (73%), not recognizing mental health as a problem (62%), not having enough resources (50%), and social stigma (35%).

DISCUSSION

The majority of NTP directors in our study sample would support the integration of mental health care within their TB care delivery systems if service provision for patients receiving anti-tuberculosis treatment was low and if effective and low-cost mental health treatment models were available. The high level of declared receptivity by NTP directors is a sign that evidence of the added value that mental health services can bring by improving patient outcomes and reducing overall TB program expenditure may be growing. Furthermore, we found that most NTPs have integrated TB programs in primary care and/or HIV care, and some have already taken steps to integrate mental health and TB care. These findings suggest that many countries have existing infrastructures that may facilitate national integration of TB and mental health services.

Our findings come at a time of rapid expansion of the Global Mental Health movement,[29] whose aims are directly in line with the integration of mental health- and substance-related services into TB treatment programs, and eventually moving most mental health service delivery out of the psychiatric hospital setting into community and primary care settings.[19] In low-resource settings with few mental health specialists, this is achieved through ‘task shifting’, whereby non-specialists are trained to deliver basic mental health services with expert supervision.[30] Given the high comorbidity of TB and mental health and substance use disorders, and the treatment of TB at the primary care level in the highest burden countries,

mental health services could be added to the existing TB care delivery platform as a first step in providing enhanced care to patients in need.[19]

Our findings also highlight significant challenges to integrating TB and mental health care. While most NTP directors expressed high receptivity to integrating mental health care into their TB programs, mental disorders other than substance abuse were not mentioned among the top five barriers to TB treatment completion. This may be due, at least in part, to considerable variations in the global burden of psychiatric and substance use disorders,[31] and/or the limited knowledge of the respondents about mental health problems. NTP directors may also have difficulty prioritizing mental health care, given the numerous competing priorities and limited resources. However, many of the barriers and priorities mentioned by NTP directors, including TB-related stigma, poverty, homelessness, and HIV infection, are also risk factors for mental and substance use disorders. Additional outreach may be needed to position mental health as an essential component of patient-centered TB care. The WHO intends to develop a collaborative framework for TB and mental health,[32] and has, for the first time, included a chapter dedicated to mental health in the forthcoming second edition of the WHO Companion Handbook for the Management of TB.[19] Stronger evidence based on intervention trials of mental health treatment on improving TB outcomes may increase the perceived importance of integrating mental health care into existing TB programs.

The primary barriers to the integration of mental health services into TB treatment programs, such as the lack of effective, low-cost models, limited capacity and lack of recognition of mental health as a problem, are increasingly becoming surmountable. The WHO's End TB mandate explicitly includes provision of a mental health service as a pillar of its TB eradication strategy,[20] and the WHO has also created a suite of 'off-the-shelf' packages of evidence-based mental health interventions, particularly for depression, as part of its Mental Health Gap Programme (mhGAP).[30,33] The mhGAP Intervention Guide provides a blueprint for first-line integration of mental health services at the primary care level among non-specialist clinicians[30]—who may also be treating TB—and also includes three low-intensity community-based, non-pharmacologic interventions for depression designed for delivery by laypersons (e.g., community health workers) with no previous experience in mental health. While not designed specifically for TB, these interventions could be adapted to the specific needs of patients being treated for TB.

Limited capacity and training are also barriers for which solutions are increasingly available as part of the broader Global Mental Health Movement. The WHO provides Member States with support in rolling out mhGAP, including training programs prescribing first-line antidepressants and antipsychotics by general practitioners. However, the integration of the mental health services into TB programs cannot be ensured unless it is coupled with strong capacity-building efforts among primary care workers. A major first step for NTPs worldwide would be to scale up routine screening of mental and substance use disorders. With only two of 26 (8%) of countries reporting the availability of routine mental health screening in their TB programs, introducing a simple and short screening tool for depression, such as the Patient Health Questionnaire 9 (PHQ-9) or the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST),[34,35] would be a major step towards

characterizing the most prevalent of comorbid mental health issues during anti-tuberculosis treatment, and provide NTPs the data needed to leverage funding for mental health services.

Global organizations, such as The Union's TB & Mental Health Working Group, could also help educate policy makers and program managers, not only at international conferences, but also through the dissemination of educational materials. There appears to be a high demand for training; a recent webinar on TB and mental health drew over 150 attendees from 33 countries, and a recently uploaded video describing the mental health management of multidrug-resistant TB patients in Peru[36] drew 235 views from 24 countries in its first month online. These are certainly small steps, but they represent a critical shift in awareness that, if sustained, could result in meaningful change.

There were several limitations to our study. Due to language and logistic barriers, we did not achieve full geographic representation in the sample. Given the high proportions of African countries, high TB burden countries, and low-income countries included in our sample, our findings may be most relevant to countries in these categories. In addition, responses were based on the perceptions and opinions of the NTP directors, which were subject to social desirability bias. Future research should implement scientific methods to evaluate specific approaches for integrating TB and mental health care in real life settings.

CONCLUSIONS

We reported findings from the first survey on the integration of TB and mental health care services by NTP directors. Our most noteworthy finding was the lack of attention to mental health and substance use in current practice, but high receptivity to integrating such services into TB care and prevention. Our findings suggest that the integration of TB and mental health care should be supported as part of TB elimination goals. We identified significant obstacles that need to be addressed: low levels of awareness and inadequate prioritization of mental health, limited resources, and lack of training. Future work should leverage the promising receptivity among NTP directors and the momentum of the Global Mental Health Movement to address the obstacles presented in our study.

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References

1. Doherty AM, Kelly J, McDonald C, O'Dywer AM, Keane J, Cooney J. A review of the interplay between tuberculosis and mental health. Gen Hosp Psychiatry 2013; 35: 398–406. [PubMed: 23660587]
2. Pachi A, Bratis D, Moussas G, Tselebis A. Psychiatric morbidity and other factors affecting treatment adherence in pulmonary tuberculosis patients. Tuberc Res Treat 2013; 2013: 489865. [PubMed: 23691305]
3. Sweetland A, Oquendo M, Wickramaratne P, Weissman M, Wainberg M. Depression: a silent driver of the global tuberculosis epidemic. World Psychiatry 2014; 13: 325–326. [PubMed: 25273311]

4. Scuffell J, Boccia D, Garcia Velarde F, et al. Mental disorders and drug/alcohol use in patients commencing extensively drug-resistant tuberculosis treatment. Public Health Action 2017; 7: 237–239. [PubMed: 29201659]
5. Storla DG, Yimer S, Bjune GA. A systematic review of delay in the diagnosis and treatment of tuberculosis. BMC Public Health 2008; 8: 15. [PubMed: 18194573]
6. Ambaw F, Mayston R, Hanlon C, Alem A. Depression among patients with tuberculosis: determinants, course and impact on pathways to care and treatment outcomes in a primary care setting in southern Ethiopia—a study protocol. BMJ Open 2015; 5: e007653.
7. Franke MF, Appleton SC, Bayona J, et al. Risk factors and mortality associated with default from multidrug-resistant tuberculosis treatment. Clin Infect Dis 2008; 46: 1844–1851. [PubMed: 18462099]
8. Johnson J, Kagal A, Bharadwaj R. Factors associated with drug resistance in pulmonary tuberculosis. Indian J Chest Dis Allied Sci 2003; 45: 105–109. [PubMed: 12715932]
9. Duarte EC, Bierrenbach AL, Barbosa da Silva J Jr, Tauil PL, de Fatima Duarte E. Factors associated with deaths among pulmonary tuberculosis patients: a case-control study with secondary data. J Epidemiol Community Health 2009; 63: 233–238. [PubMed: 19066188]
10. Sweetland AC, Kritski A, Oquendo MA, et al. Addressing the tuberculosis-depression syndemic to end the tuberculosis epidemic. Int J Tuberc Lung Dis 2017; 21: 852–861. [PubMed: 28786792]
11. Ugarte-Gil C, Ruiz P, Zamudio C, et al. Association of major depressive episode with negative outcomes of tuberculosis treatment. PLOS ONE 2013; 8: e69514. [PubMed: 23922728]
12. Koyanagi A, Vancampfort D, Carvalho AF, et al. Depression comorbid with tuberculosis and its impact on health status: cross-sectional analysis of community-based data from 48 low- and middle-income countries. BMC Med 2017; 15: 209. [PubMed: 29179720]
13. Oh KH, Choi H, Kim E, Kim HJ, Cho S. Depression and risk of tuberculosis: a nationwide population-based cohort study. Int J Tuberc Lung Dis 2017; 21: 804–809. [PubMed: 28633706]
14. Deribew A, Tesfaye M, Hailmichael Y, et al. Common mental disorders in TB/HIV co-infected patients in Ethiopia. BMC Infect Dis 2010; 10: 201. [PubMed: 20618942]
15. World Health Organization. Ten years in public health, 2007–2017: report by Dr Margaret Chan, Director-General, World Health Organization Geneva, Switzerland: WHO, 2017.
16. World Bank Group, World Health Organization. Out of the shadows: making mental health a global development priority 13–14 4 2016 Washington, DC, USA: World Bank, 2016;
17. Copenhagen Consensus Center. Health: infectious diseases Copenhagen, Denmark: CCC, 2014 http://www.copenhagenconsensus.com/post-2015-consensus/health-infectious-diseases2014. Accessed March 2019.
18. World Health Organization. Mental health atlas 2014 Geneva, Switzerland: WHO, 2015.
19. Sweetland A, Jaramillo E, Wainberg M, et al. Tuberculosis: an opportunity to integrate mental health services into primary care in low-resource settings. Lancet Psychiatry 2018; 5: 952–954. [PubMed: 30241700]
20. World Health Organization. Implementing the End TB Strategy: the essentials. WHO/HTM/TB/2015.31 Geneva, Switzerland: WHO, 2015.
21. Acha J, Sweetland A, Guerra D, Chalco K, Castillo H, Palacios E. Psychosocial support groups for patients with multidrug-resistant tuberculosis: five years of experience. Glob Public Health 2007; 2: 404–417. [PubMed: 19283636]
22. Janmeja AK, Das SK, Bhargava R, Chavan BS. Psychotherapy improves compliance with tuberculosis treatment. Respiration 2005; 72: 375–380. [PubMed: 16088280]
23. Mathew TA, Yanov SA, Mazitov R, et al. Integration of alcohol use disorders identification and management in the tuberculosis programme in Tomsk Oblast, Russia. Eur J Public Health 2009; 19: 16–18. [PubMed: 19112073]
24. Shin S, Livchits V, Connery HS, et al. Effectiveness of alcohol treatment interventions integrated into routine tuberculosis care in Tomsk, Russia. Addiction 2013; 108: 1387–1396. [PubMed: 23490304]
25. Shin SS, Livchits V, Nelson AK, et al. Implementing evidence-based alcohol interventions in a resource-limited setting: novel delivery strategies in Tomsk, Russia. Harv Rev Psychiatry 2012; 20: 58–67. [PubMed: 22335183]

26. Patel V, Belkin GS, Chockalingam A, Cooper J, Saxena S, Unutzer J. Grand challenges: integrating mental health services into priority health care platforms. PLOS Med 2013; 10: e1001448. [PubMed: 23737736]
27. Dua T, Barbui C, Clark N, et al. Evidence-based guidelines for mental, neurological, and substance use disorders in low- and middle-income countries: summary of WHO recommendations. PLOS Med 2011; 8: e1001122. [PubMed: 22110406]
28. World Bank Group. 2017 World Bank country and lending groups Washington DC, USA: World Bank, 2017.
29. Prince M, Patel V, Saxena S, et al. No health without mental health. Lancet 2007; 370: 859–877. [PubMed: 17804063]
30. World Health Organization. mhGAP intervention guide (version 2.0) for mental, neurological and substance use disorders in non-specialized health settings Geneva, Switzerland: WHO, 2016.
31. Steel Z, Marnane C, Iranpour C, et al. The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013. Int J Epidemiol 2014; 43: 476–493.
32. Sweetland A, Jaramillo E, Wainberg ML, et al. Tuberculosis: an opportunity to integrate mental health services in primary care in low-resource settings, Lancet Psychiatry 2018; 5: 952–954. [PubMed: 30241700]
33. World Health Organization. mhGAP Mental Health Gap Action Programme: scaling up care for mental, neurological, and substance use disorders Geneva, Switzerland: WHO, 2008.
34. Moriarty AS, Gilbody S, McMillan D, Manea L. Screening and case finding for major depressive disorder using the Patient Health Questionnaire (PHQ-9): a meta-analysis. Gen Hosp Psychiatry 2015; 37: 567–576. [PubMed: 26195347]
35. World Health Organization. Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) Geneva, Switzerland: WHO, 2018 https://www.who.int/substance_abuse/activities/assist/en/. Accessed March 2019.
36. International Union Against Tuberculosis and Lung Disease. Union working group show a crucial link between TB and mental health Paris, France: The Union, 2018 https://www.theunion.org/news-centre/news/union-working-group-show-crucial-link-between-tb-and-mental-health. Accessed April 2019.

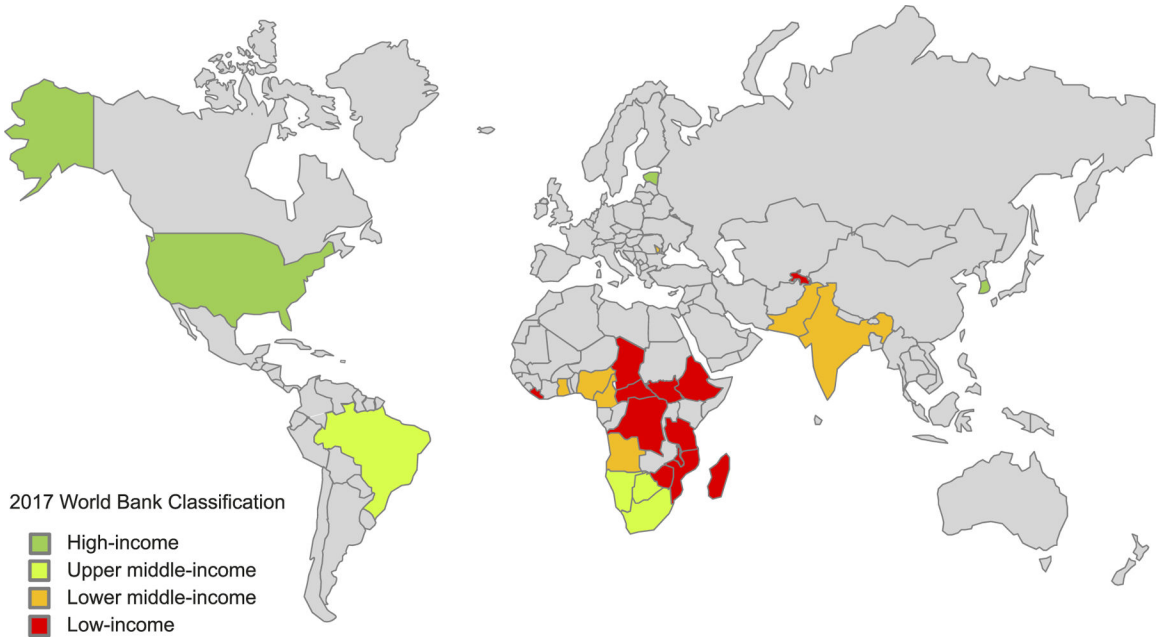

Figure.

Geographic and income representation of the 26 countries whose NTP directors participated in the survey, 2015–2017.[28] Countries were Angola, Botswana, Brazil, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Estonia, Ethiopia, Ghana, India, Liberia, Madagascar, Malawi, Moldova, Mozambique, Namibia, Nigeria, Pakistan, Republic of Korea, South Africa, South Sudan, Tajikistan, Tanzania, United States, and Zimbabwe.

Table 1

Sample characteristics (n = 26)

	n **(%)**
Region	
East Asia & Pacific	1 (4)
Europe & Central Asia	3 (12)
Latin America & the Caribbean	1 (4)
North America	1 (4)
South Asia	2 (8)
Sub-Saharan Africa	18 (69)
High-burden countries *	
TB	11 (42)
TB-HIV	12 (46)
DR-TB	7 (27)
High-incidence countries *	
TB	4 (15)
TB-HIV	6 (23)
DR-TB	3 (12)
Income level[28]	
High	3 (12)
Upper-middle	4 (15)
Lower middle	8 (31)
Low	11 (42)

* Some countries are included on more than one list.

TB = tuberculosis; HIV = human immunodeficiency virus; DR-TB = drug-resistant TB.

Table 2

Likelihood of and receptivity to TB and mental health integration *

	n (%)
Likelihood of integration into NTP guidelines	
Highly likely	17 (65)
Somewhat likely	5 (19)
Unlikely	4 (15)
Receptivity of TB providers	
Very	12 (46)
Somewhat	12 (46)
Not receptive	1 (4)
Missing	1 (4)

* If training for effective and low-cost interventions[29] were available.

TB = tuberculosis; NTP = National Tuberculosis Program.

Table 3

Potential for TB-HIV/mental health service integration

	TB (*n* = 26)	HIV (*n* = 22)
Primary care integration of TB services		
Fully integrated	19 (73)	
Somewhat integrated	3 (12)	
Not integrated	4 (15)	
Primary care integration of TB and HIV services		
Fully integrated	6 (23)	
Somewhat integrated	15 (58)	
Not integrated	3 (12)	
Missing	2 (8)	
Psychosocial services routinely provided		
Peer support groups	14 (54)	19 (86)
Mental health counseling	5 (19)	5 (23)
Referral for psychiatric consultation	6 (23)	3 (14)

TB = tuberculosis; HIV = human immunodeficiency virus.