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DEVELOPMENT AND EVALUATION OF ADDICTION TREATMENT PROGRAMS IN LATIN AMERICA

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Abstract

Purpose of review—The aim of this article is to present a state-of-the-art review of the scientific studies that have evaluated health care systems, services and programs for addiction treatment in Latin America. As a secondary aim, this article presents a brief description and analysis of the addiction prevention and treatment resources and programs available in Latin America, based on information from the ATLAS on Substance Use (ATLAS-SU) project led by the World Health Organization (WHO).

Recent findings—Substance use disorders (SUD) are among the main causes associated with global burden of disease. Around the world, many initiatives have been proposed to promote policies to reduce substance use and reduce the impact of SUD, including integrating treatments into health care systems, increasing access to treatment programs and impacting outcome measures. In Latin America, multiple efforts have been implemented to improve addiction services and programs, although little is known about the impact they have generated.

Summary—International reports on public resources for the prevention, treatment and rehabilitation of addiction indicate that strategies and initiatives to cover this public mental health need exist in most Latin American countries. These studies also report established networks of public and private services that include prevention and detoxification programs, outpatient and residential treatment, as well as social reintegration initiatives. However, despite these advances, information on the evaluation of the progress, results and impact of these programs is limited.

Keywords

Addiction; substance use disorders; treatment programs; evaluation; Latin America

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Conflicts of interest

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INTRODUCTION

Substance use disorders (SUD) contribute significantly to years of life lost (YLL) around the world, with the estimated YLL and years lost due to disability (YLD) reported as 0.4% and 3.9%, respectively^[1]. Additionally, SUD and other psychiatric disorders are associated with about 60% of suicide deaths, placing them among the three primary causes of global disease burden^[2]. This does not consider other associated problems, including co-occurring disorders^[3], suicidal ideation^[**4], cognitive impairment^[5], sexually transmitted infections, risky sexual behaviors^[**4], unemployment^[6], and low family functioning^[7], among others.

Multiple actions have been taken around the world to reduce the impact of SUDs, including promoting policies that reduce substance abuse, harm reduction programs, implementing services and comprehensive care programs, developing referral and counter-referral algorithms for the different care levels of the health care system, increasing access to services and treatment programs and impacting outcome measures beyond abstinence (e.g. methadone maintenance programs and integrative approaches to treat co-occurring disorders, increase the quality of life, and improve psychosocial functioning, etc.)^[8, 9].

The increase of people with SUD and the corresponding biopsychosocial problems have generated the need to develop treatment options that offer various levels of care, including community-based outreach; screening, brief intervention, and referral to treatment (SBIRT); short-term residential treatment; outpatient treatment; long-term residential treatment; and recovery management^[10]. Currently, there are a diversity of local addiction treatment services and programs around the world that have adapted to respond to the specific needs of each country, culture and sociopolitical context.

The diversity of biopsychosocial problems associated with SUD and the wide range of treatment approaches and offerings generate a complex relationship that represents significant public policy challenges in terms of the burden of disease and the cost of care. Although it is generally accepted that it is significantly less expensive to treat SUD and their associated problems than it is to not treat them^[11], it is still necessary to evaluate the services and programs offered in order to gather indicators regarding their cost, effect and impact and to provide feedback to key stakeholders to support the decision-making process (e.g. to know if the budget of a program is being invested adequately and strategically in relation to the program's cost-benefit)^[9].

The development of an evaluative culture for health programs creates a strategic and healthy atmosphere, as it encourages the routine collection and dissemination of information to help improve the services available. However, in many countries the evaluation of SUD treatments is still being developed^[9].

Given this situation, large-scale international initiatives have been implemented to evaluate: access to mental health and addiction programs, the integration of interdisciplinary teams^[12, 13]; the response capacity of services for addiction treatment and other psychiatric disorders^[14, 15]; the improvement of clinical practice (diagnosis and treatment) and standards of care^[10, 16]; as well as the integration of treatment services for SUD and other psychiatric disorders^[17] (see Table 1).

Local initiatives in countries around the world are also focused on implementing projects to improve health care systems, services, programs and models, but information on progress, results and impact is scarce. For example Latin American countries have championed a series of health care reforms that include addiction and mental health care in primary care centers^[18, 19]. This process began almost 30 years ago, with the Declaration of Caracas^[19], but little is known about the impact that these reforms have generated in the region. Similar efforts exist across Latin America, and all of them lack evaluative and follow-up data.

The aim of this article is to present a state-of-the-art review of the scientific evidence that evaluates health care systems, services and programs for addiction treatment in Latin America. As a secondary aim, this article presents a brief description and analysis of the addiction prevention and treatment resources and programs available in Latin America based on information from the ATLAS on Substance Use (ATLAS-SU) project led by the World Health Organization (WHO).

METHOD

Aim 1: State-of-the-art review

A systematic search was conducted for literature published between July 2016 and December 2017 (18 months) using the following databases: PubMed, SciELO, LILACS and Web of Science. The search terms used were ‘addiction’, ‘substance use disorders’, ‘alcohol use disorders’, ‘outcome and process assessment (Health Care)’, ‘program evaluation quality of health care’, ‘health care system’, ‘prevention programs’, ‘evaluation’, ‘treatment services’, ‘treatment programs’ and ‘Latin America’. Searches were conducted using these terms in both English and Spanish. The following Latin American countries were included: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

The following inclusion criteria were used to select articles: a) written in Spanish or English, b) related to the evaluation of addiction treatment services, c) original articles published in peer-reviewed scientific journals and d) cross-sectional and experimental study designs. Grey literature was excluded, including books, book chapters, public reports, etc.

Aim 2: Brief description and analysis of the addiction prevention and treatment resources and programs available in Latin America

Through a collaboration between the Noncommunicable Diseases and Mental Health Department of the Pan American Health Organization (PAHO) and the National Institute of Psychiatry Ramón de la Fuente Muñiz (INPRFM), an analysis was conducted of the data compiled in the ATLAS-SU information gathered in 2014^[14], and a report was compiled on the availability of public health resources for the prevention and treatment of SUD in the Americas^[20]. Focusing only on Latin American countries, information from this 2015 report was used to create a brief description of the resources and programs available in the region.

The ATLAS-SU^[14] is a worldwide project to collect, compile and disseminate data on national, regional, and global resources and programs for the prevention and treatment of

SUD. The resources include administrative and financial resources, health service resources, human resources, policy and legislative resources, resources for the prevention of substance use disorders, and information resources such as presence of monitoring systems and other data collection tools. The ATLAS-SU was conceptualized as a collaborative project involving staff at WHO headquarters and WHO regional and country offices. Project data for the ATLAS-SU is obtained using a questionnaire that includes questions on the availability of resources and services for the prevention and treatment of addictions. These questionnaires are completed by key informants that are designated by the responsible ministry of health in each country. Currently participate in the project 162 countries, territories and areas that represent 98% of the world population.

RESULTS

State-of-the-art review

Six articles that complied with the inclusion criteria were identified. Four articles were randomized controlled trials (RCT), and the other two were cross-sectional studies (see Table 2).

The first study referred to the evaluation of the effectiveness of a prevention program in Brazil^[21, **22], whose purpose was to delay the onset or interrupt the progression of the use of tobacco, alcohol, and other substances in adolescents. The study was conducted in 16 public schools in three cities, with the support of the Ministry of Health and the local Department of Education. The results indicated that among the younger students (11–12 years old), there were no significant increases in drug use in both groups during the 4 month follow up. Among students of 13–15 years old, no significant increase in drug use was found in the intervention group, however, in the control group there was a statistically significant increase in past month in alcohol (from 10.6% to 14.9%) and marijuana use (from 1.3% to 2.7%). The authors concluded that the prevention program reduced the risk of the progression of marijuana and alcohol among adolescents of 13–15 years old.

The second RCT was also conducted in Brazil, and it evaluated the effectiveness of a contingency management (CM) program in standard outpatient treatment for people dependent on crack cocaine, in addition to assessing whether the implementation of a CM program favored the use of services and promoted abstinence and treatment retention^[**23]. The results showed that participants that received CM attended a greater number of sessions ($M = 19.5$, $SD = 14.9$ vs $M = 3.7$, $SD = 5.9$ from control group), were more likely to remain in treatment ($M = 7.7$, $SD = 5.2$ weeks vs $M = 3.0$, $SD = 4.0$ weeks from control group) and maintained abstinence for a longer period of time ($M = 4.4$ weeks) compared to the control group ($M = .8$ weeks).

The third RCT evaluated the effectiveness of a short-term intervention based on the use of the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in various treatment centers in Chile^[**24]. The study was conducted in 19 primary care centers, eight emergency rooms, and five police stations and was financed by the Chilean National Service for the Prevention and Rehabilitation of Drug and Alcohol Consumption. The results reported that there was not sufficient evidence to support that the brief intervention reduced

the ASSIST score for alcohol ($M = 12.94$, $SD = 6.34$ vs $M = 13.12$, $SD = 6.41$ from control group), marijuana ($M = 10.43$, $SD = 6.40$ vs $M = 9.81$, $SD = 6.65$ from control group) nor cocaine ($M = 11.07$, $SD = 9.24$ vs $M = 10.28$, $SD = 8.45$ from control group) in comparison to the delivery of an informational brochure about the damages associated with the consumption of alcohol and other drugs.

The fourth RCT evaluated the effectiveness of Motivational Enhancement Treatment for Spanish Speakers (METS) in terms of reducing days of substance use and increasing days of treatment services. This study was part of a technology transfer project between the Florida Node Alliance of the National Drug Abuse Treatment Clinical Trials Network (CTN) and INPRFM. The main objective of this collaboration was to develop a clinical trials network in Mexico^[*25, **26]. The study was financed by the U.S. Department of State. The results associated with the two treatment conditions (METS vs. counseling as usual) showed a difference in the patterns of means over time in level of substance use ($X^2(4) = 11.58$, $p = .021$), but did not show differences in the days of use of substances over time in the two treatment conditions by either site ($X^2(4) = 11.58$, $p = .021$) nor in services utilization ($X^2(6) = 6.59$, $p = .361$).

The following two studies utilized a cross-sectional study design. The first study aimed to examine the prevalence of co-occurring disorders in patients receiving treatment for substance use at community-based residential care facilities located in five Mexican states and to assess whether the presence of co-occurring disorders was associated with higher severity of substance use, psychiatric symptomatology, and other health risks. The results indicated that the prevalence of any co-occurring disorder was 62.6%. Additionally, it was found that the presence of a co-occurring disorder was associated with higher severity of psychiatric symptomatology ($aB = 0.297$, $SE = 0.026$, $p < .05$), more days of substance use ($aB = 0.219$, $SE = .19$, $p < .05$), greater odds of suicidal ideation ($aOR = 5.07$, 95% CI [2.58, 11.17], $p < .05$) and greater odds of sexual risk behaviors ($aOR = 1.95$, 95% CI [1.07, 3.75], $p < .05$), than those without co-occurring disorders^[**4]. In addition to identifying the high prevalence of co-occurring disorders in community-based residential centers in Mexico, this study also highlights the challenges that community-based residential care facilities face in terms of providing high-quality care for patients that present with co-occurring disorders.

The last study examined the characteristics of a sample of patients that sought care from a Psycho-Social Care Centre for Alcohol and Drugs in Brazil^[**27]. In addition to the characterization of the sample, the results of the study emphasize the importance of meeting the current unmet needs of SUD patients to increase treatment motivation and maintenance among these patients.

Resources and programs for the prevention and treatment of addiction available in Latin America

The *Report on public health resources to address the use of psychoactive substances in the Americas*^[20] showed that the implementation of plans, programs and services for the prevention and treatment of SUD has increased, along with programs to reduce the demand for drugs, national standards for addiction treatment and interventions in primary care settings and the implementation of epidemiological indicators that track the consumption

trends and patterns of the population. In terms of program evaluation, two countries reported evaluating prevention programs (Chile/Peru) while two others reported evaluating treatment programs (Chile/Costa Rica) (see Table 3).

The most of the Latin American countries that participated in the ATLAS-SU project reported having epidemiological information and surveillance systems in place, as well as programs for the prevention and treatment of addictions, but the majority of respondents reported that no actions or projects were in place for the evaluation of the implemented programs.

Many reasons could explain why the systematic search to identify scientific articles that evaluated services and programs in Latin America was limited. The first reason might be the results reported in the ATLAS-SU project in terms of the lack of actions or strategies in place to evaluate prevention and treatment programs.

A second reason might be the availability of financial resources for the evaluation of services and programs. Low- and middle-income countries designate fewer resources for mental health and addiction treatment than high-income countries (less than US\$2 and over US\$50 per capita, respectively)^[28]. Of the resources available, the majority is allocated to hospital care^[15, 28], which reduces the potential budget for research on mental health and addiction issues^[29, 30], including for the evaluation of services and programs.

A third reason for the limited scope of available literature might be the high cost of conducting high-impact studies. Evidence-based medicine considers RCTs to be a gold standard for developing high-quality treatment evidence and highly relevant for the decision-making process. In addition to providing the highest level of scientific evidence, RCTs allow decision-makers to determine if the services or programs available have a positive impact on multiple process measures and outcomes^[31]. However, the costs associated with the planning and implementation of RCTs are very high and can vary significantly depending on the following: the phase of the study to be conducted (Phase I: safety, Phase II: efficacy, Phase III: effectiveness), kind of trial (pharmacological or behavioral), salary of the research team and clinical staff, training, number of participating sites, duration of the study, etc^[32]. According to the U.S. Department of Health & Human Services, the average cost of clinical trials across all medical areas is around US\$30–40 million per trial; being the most expensive elements: clinical procedures (15–22%), administrative staff (11–29%), site monitoring (9–14%) and site retention (9–16%)^[33]. As a point of reference, the National Institute on Drug Abuse is the mayor impact institution around the world on addiction science and in 2014 received almost US\$1 billion to funding its four extramural research divisions. In particular the Clinical Trials Network, a division focused on translating findings from basic science to evidence-based practices in real-world settings, received more than US \$49 million to fund: new and renewal projects, and supplements^[34].

A fourth reason might be the limited number of researchers in public mental health. The lack of funding allocated to research has a direct impact on the number of quality research training programs, which in turn impacts the number of well-trained researchers that are able to design and implement high-impact research projects^[29].

A fifth reason might be the management capacity of the policy-makers of the mental health systems. Commonly the policy-makers lack the knowledge and skills necessary to manage health programs, a result of a lack of sufficient training or experience to hold public office [35,36]. Even when local the policy-makers have experience in public management, they might minimize the need to evaluate the services available due to a lack of knowledge about the relevance of these evaluations for the improvement of the health care system. Knowledge regarding the needs of the health care system, leadership, technical capacity, an ability to influence decision-makers and political support are all essential elements that benefit the entire public health care system[37].

Although mental health research is an essential input for informed decision-making, public policy efforts in this area are still incipient. Although organizations aimed at technical and scientific development exist in various countries in Latin America, like the National Council for Scientific and Technological Development in Brazil and the National Council of Science and Technology in Mexico, spending on research and development represents less than .5% of gross domestic product (GDP) in most Latin American countries, a percentage that is well below regions such as North America (2.79% of GDP), the European Union (2.05% of GDP) or Europe and Central Asia (excluding high-income countries - .87% of GDP)[30, 38]. This low-level of spending might be associated with the scarce scientific production on mental health and addiction issues in Latin America, which represents less than 1% of scientific production on the subject worldwide[39], with Argentina, Brazil, Chile, Colombia, Mexico and Venezuela considered the most representative countries with the highest levels of scientific production in the region[30].

As a final consideration, the gap between research and practice in SUD treatment is well documented. To blend research and practice, it is necessary to consider the technology transfer process, which integrates at least three phases: a) *technology development*: devising treatments that are efficacious in real-world RCTs, b) *technology dissemination*: spreading and distributing information regarding effective treatments so that they can be adopted by clinicians and organizations, c) *technology implementation*: ensuring that treatments are used and applied correctly by clinicians and organizations to maintain their effectiveness and quality. This process suggest that development of evidence-based interventions does not guarantee the adoption neither maintenance of the intervention by clinicians and organizations[40]. For this reason, evaluate each phase of the technology transfer process is crucial to guarantee the appropriate use of funding for prevention and treatment programs.

CONCLUSION

Studies show the lack of published evaluative evidence on prevention and treatment programs in Latin American countries[29, 41, 42]. Adopting an evaluation culture in the region could be a step towards promoting collaborative networks that link public policy makers, treatment agencies, research institutions and universities, in order to implement evidence-based strategies that respond to the community's needs regarding prevention and treatment. This proactive initiative would facilitate the creation of self-sustaining human resource training networks with specific knowledge and skills, which subsequently facilitate the

generation of scientific evidence and increase scientific production on addiction and mental health issues^[29, 42].

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REFERENCES AND RECOMMENDED READING

Papers of particular interest, published within the annual period of review, have been highlighted as:

* of special interest

** of outstanding interest

1. Patel V, Christolm D, Parikh R, et al. Addressing the burden of mental, neurological, and substance use disorders: key messages from Disease Control Priorities, 3rd edition. *The Lancet* 2015; 387: 1672–1685. doi: 10.1016/S0140-6736(15)00390-6
2. Ferrari AJ, Norman RE, Freedman G, et al. The burden attributable to mental and substance use disorders as risk factors for suicide: findings from the Global Burden of Disease Study 2010. *PLoS One* 2014; 9: e91936. doi: 10.1371/journal.pone.0091936 [PubMed: 24694747]
3. Szerman N, Martínez-Raga J, Baler R, et al. Joint statement on dual disorders: Addiction and other mental disorders. *Salud Mental* 2017; 40: 245–247. doi: 10.17711/SM.0185-3325.2017.031
- **4. Marín-Navarrete R, Medina-Mora ME, Horigian V, et al. Co-Occurring Disorders: A Challenge For Mexican Community-Based Residential Care Facilities For Substance Use. *J Dual Diagn* 2016; 12: 1–10. doi: 10.1080/15504263.2016.1220207 [PubMed: 26829002] This paper highlights the importance of evaluating the co-occurring disorders in the community-based residential care facilities for substance use disorders.
5. Toledo-Fernández A, Brzezinski-Rittner A, Roncero C, et al. Assessment of neurocognitive disorder in studies of cognitive impairment due to substance use disorder: A systematic review. *Journal of Substance Use* 2017. doi: 10.1080/14659891.2017.1397208
6. Boden JM, Lee JO, Horwood LJ, et al. Modelling possible causality in the associations between unemployment, cannabis use, and alcohol misuse. *Soc Sci Med* 2017; 175: 127–134. doi: 10.1016/j.socscimed.2017.01.001 [PubMed: 28088618]
7. Pérez-López A, Marín-Navarrete R, Villalobos-Gallegos L, et al. Effects of co-occurring disorders on the perception of family functioning. *Journal of Substance Use* 2017. doi: 10.1080/14659891.2017.1405092
8. Tiffany ST, Friedman L, Greenfield SF, et al. Beyond drug use: a systematic consideration of other outcomes in evaluations of treatments for substance use disorders. *Addiction* 2012; 107: 709–718. doi: 10.1111/j.1360-0443.2011.03581.x [PubMed: 21981638]
9. Marsden J, Ogborne A, Farrell M, Rush B. International guidelines for the evaluation of treatment services and systems for psychoactive substance use disorders. Geneva: World Health Organization; 2000 Available from: <https://www.unodc.org/docs/treatment/guideevaloftreatment.pdf>
10. United Nations Office on Drugs and Crime & World Health Organization. UNODC-WHO International Standards for the Treatment of Drug Use Disorders. Geneva: United Nations Office on Drugs and Crime; 2017 Available from: http://www.who.int/substance_abuse/activities/msb_treatment_standards.pdf?ua=1
11. Cartwright WS. Cost–Benefit Analysis of Drug Treatment Services: Review of the Literature. *J. Mental Health Policy Econ* 2000; 3: 11–26.

12. World Health Organization & World Organization of Family Doctors. Integrating mental health into primary care: a global perspective; 2008 Geneva: WHO Available from: http://www.who.int/mental_health/resources/mentalhealth_PHC_2008.pdf
13. World Health Organization. Mental health action plan 2013–2020; 2013 Geneva: WHO Available from: http://apps.who.int/iris/bitstream/10665/89966/1/9789241506021_eng.pdf
14. World Health Organization. ATLAS on Substance Use (ATLAS-SU): resources for the prevention and treatment of substance use disorders; 2017 Available from: http://www.who.int/substance_abuse/activities/fadab/msb_adab_2017_atlas_su_25June2017.pdf
15. Pan American Health Organization & World Health Organization. WHO-AIMS Regional Report on Mental Health Systems in Latin America and the Caribbean. Washington, D.C.: Pan American Health Organization 2013 Available from: http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=21325&Itemid=&lang=en
16. World Health Organization. mhGAP Intervention Guide for mental, neurological and substance use disorders in non-specialized health settings. Geneva: World Health Organization 2010.
- *17. Alfonso-Bello L, Szerman N, Marín-Navarrete R, et al. Ibero-American initiative for dual disorders to improve public treatment programs. *Salud Mental* 2017; 40: 249–255. doi: 10.17711/SM.0185-3325.2017.032 This paper describes in detail the Ibero-American initiative for dual disorders to improve public treatment programs.
18. Caldas de Almeida JM, Horvitz-Lennon M. An Overview of Mental Health Care Reforms in Latin America and the Caribbean. *Psychiatr Serv* 2010; 61: 218–221. doi: 10.1176/ps.2010.61.3.218 [PubMed: 20194395]
19. Levav I, Restrepo H, Guerra de Macedo C. The restructuring of psychiatric care in Latin America: a new policy for mental health services. *J Public Health Policy* 1994; 15: 71–85. [PubMed: 8027363]
20. Organización Panamericana de la Salud & Organización Mundial de la Salud. Abordaje de salud pública del consumo de sustancias psicoactivas en las Américas: Alcances de la estrategia regional y el plan de acción sobre consumo de sustancias psicoactivas y la salud pública. Available from: http://www.paho.org/per/images/stories/FtPage/2013/Abordaje-salud-publica_Alfonzo_OPS.pdf?ua=1
21. Kreeft PVD, Wiborg G, Galanti MR, et al. ‘Unplugged’: A new European school programme against substance abuse. *Drugs: Education, Prevention, and Policy* 2009; 16:167–81. doi: 10.1080/09687630701731189
- **22. Sánchez ZM, Sanudo A, Andreoni S, et al. Efficacy evaluation of the school program Unplugged for drug use prevention among Brazilian adolescents. *BMC Public Health* 2016; 16: 1206. doi: 10.1186/s12889-016-3877-0 [PubMed: 27899107] This paper highlights the evaluation of a prevention program in Brazil.
- **23. Miguel AQC, Madruga CS, Cogo-Moreira H, et al. Contingency Management is Effective in Promoting Abstinence and Retention in Treatment Among Crack Cocaine Users in Brazil: A Randomized Controlled Trial. *Psychol Addict Behav* 2016; 30: 536–543. doi: 10.1037/adb0000192 [PubMed: 27442691] This paper reports the primary outcome results of an effectiveness RCT to treat crack cocaine users.
- **24. Poblete F, Barticevic NA, Zuzulic MS, et al. A randomized controlled trial of a brief intervention for alcohol and drugs linked to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in primary health care in Chile. *Addiction* 2017; 112: 1462–1469. doi: 10.1111/add.13808 [PubMed: 28239995] This paper reports the primary outcome results of a RCT in primary health care settings.
- *25. Horigian VE, Marín-Navarrete R, Verdeja RE, et al. Technology transfer for the implementation of a clinical trials network on drug abuse and mental health treatment in Mexico. *Rev Panam Salud Publica* 2015; 38: 233–242. [PubMed: 26758002] This paper describes in detail the transfer technology process for the development and implementation of the Mexican Clinical Trials Network.
- **26. Marín-Navarrete R, Horigian VE, Medina-Mora ME, et al. Motivational enhancement treatment in outpatient addiction centers: A multisite randomized trial. *Int J Clin Health Psychol* 2017; 17: 9–19. doi: 10.1016/j.ijchp.2016.05.001 [PubMed: 30487876] This paper reports the primary outcome results of a RCT in Mexican outpatient addiction centers.

- **27. Donatti A, Yoshio E, Arantes G, et al. Characteristics of clients using a community-based drug treatment service ('CAPS-AD') in Brazil: An exploratory study. *International Journal of Drug Policy* 2016; 31: 99–103. doi: 10.1016/j.drugpo.2016.01.020 [PubMed: 26935220] This paper highlights the importance of evaluating the programs that are implemented in addiction treatment services.
28. World Health Organization. *Mental health atlas 2014*. Geneva: WHO 2015
- *29. Bonini BB, Araya R, Quayle J, Silva Evangelista M, Price LSN, Menezes PR. LATIN-MH: a model for building research capacity within Latin America. *Glob Ment Health* 2017; 4:e2. doi: 10.1017/gmh.2016.32 This paper describes the efforts of Latin America Treatment and Innovation Network in Mental Health (LATIN-MH). This research project is focused on reducing the treatment gap in mental health in Latin America.
30. Razzouk D, Zorzetto R, Dubugras MT, et al. Leading countries in mental health research in Latin America and the Caribbean. *Rev Bras Psiquiatr* 2007; 29: 118–122. [PubMed: 17647304]
31. Patel V. Mental health in low- and middle-income countries. *British Medical Bulletin* 2007; 81 and 82: 81–96. doi: 10.1093/bmb/ldm010 [PubMed: 17470476]
32. Martin L, Hutchens M, Hawkins C, et al. How much do clinical trials cost? *Nature Review. Drug Discovery* 2017; 16: 381–382. doi: 10.1038/nrd.2017.70
33. U.S. Department of Health & Human Services. Examination of Clinical Trial Costs and Barriers for Drug Development. 2014 Available from: <https://aspe.hhs.gov/report/examination-clinical-trial-costs-and-barriers-drug-development>
34. National Institute on Drug Abuse. Fiscal year 2014 budget information-Congressional justification for National Institute on Drug Abuse. 2013 Available from: <https://www.drugabuse.gov/about-nida/legislative-activities/budget-information/fiscal-year-2014-budget-information-congressional-justification-national-institute-drug-abuse>
35. Caldas de Almeida JM. Technical cooperation strategies of the Pan American Health Organization in the new phase of mental health services reform in Latin America and the Caribbean. *Panam J Public Health* 2005; 18: 314–26. doi: 10.1590/S1020-49892005000900012
36. Keynejad E, Semrau M, Toynbee M, et al. Building the capacity of policy-makers and planners to strengthen mental health systems in low- and middle-income countries: a systematic review. *BMC Health Serv Res* 2016; 16: 601. doi: 10.1186/s12913-016-1853-0 [PubMed: 27769270]
37. Caldas de Almeida JM. Mental health services development in Latin America and the Caribbean: achievements, barriers and facilitating factors. *Int Health* 2013; 5: 15–18. doi:10.1093/inthealth/ihs013 [PubMed: 24029840]
38. The World Bank. Research and development expenditure (% of GDP); 2018 Available from: <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>.
39. Patel V, Sumathipala A. International representation in psychiatric literature. *Br J Psychiatry* 2001; 178: 406–9. doi: 10.1192/bjp.178.5.406 [PubMed: 11331553]
40. Hj Gotham. Diffusion of mental health and substance abuse treatments: development, dissemination, and implementation. *Clinical Psychology: Science and Practice* 2007; 11: 160–176. doi: 10.1093/clipsy/bph067
41. Spang JC, Rush B, Ferris LE. Collaborative mental health services in primary care systems in Latin America: contextualized evaluation needs and opportunities. *Health Expectations*, 2015; 19:152–169. doi: 10.1111/hex.12338 [PubMed: 25655020]
- *42. Yang L, Pratt C, Valencia E, et al. RedeAmericas: building research capacity in young leaders for sustainable growth in community mental health services in Latin America. *Glob Ment Health* 2017; 4: e3. doi:10.1017/gmh.2017.2 This paper describes the development and initial outcomes of a training program for young leaders in community mental health research, part of a Latin American initiative known as RedeAmericas

Key points

- The need for substance use disorders (SUD) treatment services has led to an increased demand for public plans and programs for the prevention, treatment and rehabilitation of SUD.
- This increase in public plans and programs to address SUD has led to a significant increase in the cost of care in recent decades.
- Evaluating these programs is a best practice that should be implemented to obtain indicators on cost, effect and impact and to provide feedback to stakeholders and decision-makers.
- Reports indicate that plans and programs that respond to the demand for care for people with SUD exist in Latin America, however the evidence regarding progress, results and impact is limited.

Table 1

Characteristics of the international initiatives

Name	Institutions	Countries	Objective	Descriptions
Collaborative Mental Health Care (CMHC) [12,13]	World Health Organization (WHO) World Organization of Family Doctors (Wonca)	All countries	To promote mental well-being, prevent mental disorders, provide care, enhance recovery, promote human rights and reduce the mortality, morbidity and disability for persons with mental disorders.	Developing good quality mental health services requires the use of evidence-based protocols and practices, including early intervention, incorporation of human rights principles, respect for individual autonomy and the protection of people's dignity. Governments have an important role in using information on risk and protective factors for mental health to put actions in place to prevent mental disorders and to protect and promote mental health at all stages of life
ATLAS on Substance Use (ATLAS-SU) [14]	World Health Organization (WHO) Department of Mental Health and Substance Abuse	All countries in six regions	To Assess resources at the national, regional and global level to highlight the distribution of resources for treatment and prevention of substance use disorders.	The instrument used in the data collection is a questionnaire designed specifically for this purpose. The project was conceptualized as a collaborative project involving staff at WHO headquarters and WHO regional and country offices. Data is presented in a published report and will be available in a searchable online database on the web site of the WHO Management of Substance Abuse program.
The Joint UNODC/WHO Programme on Drug Dependence Treatment and Care [10]	World Health Organization (WHO) United Nations Office on Drugs and Crime (UNODC)	All countries	To develop comprehensive, integrated health-based approaches to drug policies that can reduce demand for illicit substances, relieve suffering and decrease drug-related harm to individuals, families, communities and societies.	This program promotes the development of comprehensive and integrated treatment systems that are able to deliver a continuum of care for drug users and link services at municipal and national levels. It also prevention, treatment and care of drug use disorders into the mainstream health care system, linking with NGOs and ensuring full coordination with the health care system as part of an integrated continuum of care.
mhGAP Intervention [16]	World Health Organization (WHO)	All countries	To create a model guide developed for use by health care providers working in non-specialized health care settings and adapt it for national and local needs.	This intervention focuses on integrated management of priority conditions using protocols for clinical decision-making. The priority conditions included are: depression, psychosis, bipolar disorders, epilepsy, developmental and behavioral disorders in children and adolescents, dementia, alcohol use disorders, drug use disorders, self-harm/suicide and other significant emotional or medically unexplained complaints.
Ibero-American Initiative for the Treatment of Dual Disorders [17]	Pan American Health Organization (PAHO/WHO) Government Delegation for the National Plan on Drugs (GDSND) Spanish Society of Dual Disorders (SEPD) National Institute of Psychiatry Ramón de la Fuente Muñiz. (INPRFM)	Latin America	To improve treatment programs for co-occurring disorders between addictions and other psychiatric disorders.	This Initiative seeks to implement four lines of action to improve public services: a) build a theoretical-conceptual consensus on dual disorders, b) propose a treatment model, c) develop skills-based training, d) create collaborative networks for research on dual disorders.

Table 2

Characteristics of the studies

Author (year)	Country	Aims	Sample	Intervention	Results
Sánchez et al. (2016)	Brazil	To evaluate the impact of a prevention program on drug use among adolescents in public middle schools.	n= 2,185 students from 16 public schools; n= 938 in intervention group (Unplugged program) and n= 1,247 students in control group.	The intervention group attended 12 weekly Unplugged program classes while control group did not attend any school prevention programs.	The intervention reduced the recent use of marijuana (transition from use to non-use) among students between 13 and 15 years old.
Miguel et al. (2016)	Brazil	To evaluate the efficacy of incorporating contingency management into standard outpatient treatment for crack cocaine users.	n= 65 individuals with crack cocaine dependence; n= 33 in standard treatment plus contingency management group (STCM) and n= 32 in usual treatment group.	12 weeks of treatment. Participants in STCM group received monetary incentives for abstinence.	The STCM group presented higher treatment attendance, continuous abstinence and a higher rate of negative samples of crack cocaine, THC and alcohol when compared to the usual treatment group.
Poblete et al. (2017)	Chile	To evaluate the effectiveness of an ASSIST-linked brief intervention (ASSIST-linked BI) for alcohol and illicit drug use as part of a systematic screening program implemented at the primary care level.	n= 806 individuals with moderate alcohol and drug use risk; n= 400 individuals received ASSIST-linked BI; n= 406 individuals received informational pamphlet.	One session of ASSIST-linked BI based on the FRAMES model, including feedback, menu of options and enhancing motivation to change. Control group received an informational pamphlet.	There was no difference in effectiveness between ASSIST-linked BI and the delivery of an informational pamphlet.
Marín-Navarrete (2016)	Mexico	To evaluate the efficacy of incorporating Motivational Enhancement Treatment for Spanish Speakers (METS) to reduce alcohol and substance use in outpatient addiction treatment centers.	n= 120 participants; n= 54 in METS group and n= 66 in usual treatment group.	METS consisted of three individual counseling sessions that utilized strategies like open questions, affirmations and summary statements. In addition, counselor and patient developed a change plan to be followed during treatment. Usual treatment consisted of three individual, non-structured counseling sessions delivered in the therapeutic style.	There were no differences between METS and usual treatment; although the authors suggest that brief interventions at treatment initiation may improve patient outcomes.
Marín-Navarrete (2016)	Mexico	To describe the prevalence of co-occurring disorders in individuals in residential centers and assess whether the presence of co-occurring disorders is associated with other health risks.	n= 601 individuals receiving treatment for substance use disorders	----	The prevalence of co-occurring disorders was 62.6%. The presence of any co-occurring disorder was associated with higher severity of psychiatric symptomatology, more days of substance use, suicidal ideation, more sexual risk behaviors and more contact with professional services.
Donatti et al. (2016)	Brazil	To determinate the characteristics of users of the Psycho-Social Care Center for Alcohol and Drugs (CAPS-AD).	n= 143 users of CAPS-AD in Brasilia.	----	Participants were male, middle-aged, married, and had a middle school education. Alcohol and cocaine were the most used drugs. The reasons for discontinuation of treatment were lack of interest in the center activities, logistical barriers and lack of family support.

Table 3

Public health resources related to substance use in Latin American countries [20]

Resource	Countries																	Total		
	ARG	BOL	BRA	CHI	COL	COS	CUB	DOR	ECU	ELS	GUA	HON	MEX	NIC	PAN	PAR	PER		URU	VEN
Information systems on substance use	X	--	--	X	--	X	X	X	--	X	X	X	X	--	X	X	X	X	--	13
Plans and programs to reduce demand	X	X	X	X	X	X	--	--	--	--	X	X	--	X	X	--	--	--	X	11
Prevention programs	X	X	X	X	--	X	X	X	X	X	X	X	X	--	X	X	X	X	--	16
Prevention program evaluation	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--	X	--	--	--	2
Interventions in primary care*	X	--	X	X	--	X	X	X	X	X	X	--	X	--	X	--	X	X	--	13
Approved methadone registry	--	--	X	--	--	X	--	--	--	--	X	--	X	--	--	--	--	X	--	5
Available methadone	--	--	--	--	--	X	--	--	--	--	--	--	X	--	--	--	--	--	--	2
Approved naloxone registry	--	--	X	--	--	X	--	X	--	X	X	--	X	--	--	--	--	X	--	7
Available naloxone	--	--	X	--	--	X	--	X	--	--	X	--	X	--	--	--	--	--	--	5
Training programs for health professionals	X	--	X	X	--	X	X	X	X	--	X	--	X	--	--	--	X	X	--	11
National standards for treatment programs	X	--	X	X	X	X	X	X	X	X	X	X	X	--	X	X	X	X	X	17
Treatment program evaluation	--	--	--	X	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	2
Drug observatories	X	X	X	X	X	X	--	X	X	X	X	X	X	X	X	X	X	X	X	18
Data on the magnitude of substance use in the population	--	--	X	X	X	X	--	--	X	--	--	--	X	--	--	--	X	X	X	9

ARG= Argentina; BOL= Bolivia; BRA= Brazil; CHI= Chile; COL= Colombia; COS= Costa Rica; CUB= Cuba; DOR= Dominican Republic; ECU= Ecuador; ELS= El Salvador; GUA= Guatemala; HON= Honduras; MEX= Mexico; NIC= Nicaragua; PAN= Panama; PAR= Paraguay; PER= Peru; URU= Uruguay; VEN= Venezuela.

^{*} Using the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) and Mental Health Gap Action Program (mhGAP).