

Mental Health Services and Primary Care Integration – A Case for Costa Rica

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Abstract

More research is needed to identify the best mechanisms to combat the existing treatment gap in global mental healthcare. Low- and middle-income countries are beginning to experience increasing disease burden related to neurologic, mental, and substance use disorders, but these countries are exponentially more susceptible to their toll on health systems than are more economically advantaged nations. Costa Rica has long been hailed as a model nation with respect to its sanitation, public education, and public health systems. This paper outlines the progression of the global health movement, and the development of the Costa Rican healthcare system in the context of mental health services and mental health research. Costa Rica is used as a prime example of responsive and effective policy changes in relation to both peer countries in Latin America and developed countries including the United States and Canada. After exploring health systems that have initiated efforts to combat the treatment gap in mental health care, integration with primary care will be examined as an alternative to targeted interventions.

Public Health Relevance

The field of global health has evolved throughout the last few centuries, paralleling transitions in political power, health priorities, and international values. Initially developed as a distinct medical practice, tropical medicine was intended to study primarily non-Western populations with the intention of identifying those inherent factors that distinguish one population from another (1). This then grew into the field of international health after several key parties recognized that this practice epitomized the foundations of scientific racism and colonial medicine. Since then, international health has grown into the field of global health in an effort to create an inclusive field of study and to monitor the epidemiologic transitions made in both the developed and developing world (2). However, as global health has shifted its focus from communicable diseases to the burden of non-communicable disease, it has also progressed without inclusion of mental health and substance use disorders in its priorities (2,3). While the argument can be made that chronic diseases like obesity or diabetes comprise a large proportion of international disease burden across the lifespan, the primary aim of this paper is to highlight the sizable burden of mental health and substance use disorders seen across cultures. The movement for Global Mental Health has only recently gained momentum on the international

stage, and the subsequent arguments will be made in an attempt to: 1) outline the rationale behind the movement, 2) describe treatment gaps seen in both developed and developing nations, 3) identify current solutions for addressing mental health internationally, and 4) counter current critiques of the movement by 5) proposing interventions for combatting the disparities in mental health and substances use disorders seen throughout the world by using Costa Rica as a model for success.

Introduction

Global Mental Health

Psychology and the subsequent medical practice of psychiatry did not emerge as distinct fields until the early 19th century at which point several noteworthy individuals had begun to lay foundations for future practice. It was also at this time that “tropical medicine” created a novel opportunity to study populations outside of central colonial powers (1,2). However, this also served to permeate sentiments of authority that would ultimately define models of “imperial medicine” that are looked down upon today. For example, many notable psychologists and psychiatrists of the 19th and 20th centuries began to publish works describing mental health disorders endured by non-Western populations exclusively (1). These included disorders such as “drapetomania,” which described a mentality held by African American slaves fleeing from captivity. Additionally, the early accounts of psychiatrists within the context of tropical medicine erroneously classified a “psychic underdevelopment” that prevented non-Western groups from experiencing symptoms related to depression or anxiety (1). As the preliminary reports of psychiatrists were continuously perpetuated with demeaning and patronizing language, several individuals made efforts to contest scientific racism and colonial medicine by endorsing the retitling of tropical medicine to international health.

Once a more complete and culturally competent agenda was created for the field of international health, psychiatry was pushed to the periphery of medicine outside of developed nations. High-profile areas of health received attention including prevention of communicable disease, economic development, and promotion of family planning services (2). Numerous studies were conducted to identify modes of disease transmission, methods for increasing family planning resource access, and many other intervention-based studies. Towards the end of the 20th century, international health sought to reduce disease transmission and decrease infant and maternal mortality in the developing world. It was not long after that the field agreed a more comprehensive and inclusive agenda was needed, and “global health” became the new title (2,3).

One of the most common definitions of global health refers to “an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide.” Health equity has become the driving component of public health both locally and globally, and has justifiably instigated intersectoral approaches to health and wellbeing (2). Government institutions, foreign aid agencies, and non-governmental organizations lead efforts to reduce the burden of communicable diseases in the developed and developing world, and stress the historical context in which previous research and interventions had been conducted (4). As global health networks continue to expand, many countries have undergone the epidemiologic transition from communicable to non-communicable disease serving as the primary burden of disease. Again, mental health has taken a backseat to more high-profile areas of health, which now include obesity, heart disease, and diabetes; that is until individuals like Vikram Patel published several articles in *The Lancet* on the topic of global mental health (5). The researchers behind the initial movement prioritized the improvement of services dedicated to individuals living with mental health problems and psychosocial disabilities

with particular attention paid to low- and middle-income countries (2). Reasoning behind this mission was an attempt to make the field more inclusive and distinct from prior work in cultural psychiatry and medical anthropology, which sought to understand the context in which mental distress and healing was perceived across cultures. The nomenclature of “global mental health” has been applied to acknowledge all factors that influence an individual’s health, and to allow for a more operational justification of this movement’s priorities (1).

In large part due to the demanding pressures of war, natural disaster, infectious disease, famine, and drought, mental health policies and procedures have remained stagnant since the post-colonial era of medicine. Even after many developing countries began to make the epidemiologic shift to burden of non-communicable disease, mental health and substance use disorders were secondary to the needs individuals suffering from diabetes, heart disease, and other chronic illnesses (1,2). Though the global mental health movement seeks to address both current mental health priorities and historic injustices in the developing world, its neglect has continued into recent years. As key institutions begin to develop valuable metrics in assessing total disease burden both within single nations and internationally, however, the rationale behind the global mental health movement has gained new momentum.

At the University of Washington in particular, several studies have been conducted and numerous reports reviewed in order to gain a comprehensive understanding of where global disease burden falls in relation to age, location, and other demographics (6). Considering the metric of disability-adjusted life-years (DALYs), recent measurements attribute approximately 13.0 percent of total DALYs to mental health and substance use disorders. When looking at years lived with disability (YLDs), around 32.4 percent of total YLDs are the result of mental health or substance use disorders (6,7). That is to say approximately 13.0 percent of all years of

potential life lost due to premature mortality worldwide, and approximately 32.4 percent of all years of productive life lost to disability worldwide, are now attributed to neurologic, mental, and substance use disorders. Other important measures related to global mental health include life expectancy, mortality, and healthcare expenditures. For example, the life expectancy for those living with mental health disorders can be as much as 20 years shorter than those living without (2,5). This can be attributed to poorer overall health status or other factors like suicide, which now constitutes one of the leading causes of death among young adults in all countries. Ultimately, the rationale for the global mental health movement can be linked to the proportion of healthcare expenditures dedicated to provision of mental health services. This number has historically not surpassed more than 5 percent of all healthcare expenditures worldwide or even within individual countries, which is not reflective of mental health disease burden (8). In fact, this is what lead Vikram Patel – one of the primary instigators of the movement – to describe “the treatment gap” within mental healthcare.

Defined in the seminal global mental health report as “the estimate of the proportion of individuals with a supposed mental illness who are actually receiving formal mental health treatment,” the treatment gap has been used to justify increases in healthcare expenditures and subsequent improvements in mental health services (2,3). Internationally, the prevalence of mental health and substance use disorders has been estimated to fall between 4.6 and 6.4 percent of individuals dependent on age, race, and ethnicity at a single point in time; this estimate increases to between 22.3 and 26.4 percent over the lifetime (9,10, 11). General estimates of the treatment gap suggest that only 10 to 25 percent of those individuals that will suffer from a mental health or substance use disorder in their lifetime will receive formal mental health treatment worldwide, but this number does not distinguish between severity of disorders or other

distinguishing factors, and is skewed by disproportionate data collection between developed and developing nations (2).

An international survey conducted in 2010 sought to elucidate the disparities in the treatment gap for mental health and substance use disorders based on the severity of symptoms or disability-related to symptoms. Those conditions included in the study were limited to depression, anxiety, and schizophrenia or related psychoses, and then distributed into groups based on mild, moderate, or serious disability (9). One of the hallmarks of this survey was the inclusion of both developed and developing nations. The study was conducted in such a fashion that eased the process of identifying individuals with a mental health disorder with special attention paid to access of formal mental health services (9). Results were initially reported as the proportion of individuals with a mental health disorder that were receiving formal services, but later analyzed as the proportion of individuals with mental health problems that were not receiving services. This analysis was used in an effort to underline the additional disparities in treatment that exist between individuals of varying levels of disability related to their condition. Of those individuals in developed countries identified to have current serious disability resulting from a mental health disorder, between 35.5 to 50.3 percent had received no formal mental health services in the last 18 months. When the results from developing countries were analyzed, these estimates increased to between 76.3 and 85.4 percent of individuals with serious disability having received no formal treatment within the last 18 months (7,9). So, while the treatment gap in global mental healthcare is most commonly reported as 10 to 25 percent of individuals requiring treatment actually receiving treatment, the majority of studies fail to highlight the treatment gap seen in those with serious disability, and those living in the developing world.

Much like other areas of public health, global mental health has since used similar studies to raise awareness of the treatment gap in mental health services and to foster collaboration on the development of solutions. Several case studies have since outlined the effective implementation of some of these interventions, most commonly conducted in West Africa or Latin America. Costa Rica in particular has served as a model for primary healthcare systems in both the developed and developing world, and has continued to outperform its peer nations and the United States in measures of various health outcomes including mental health service access and utilization.

Costa Rica

With a population of nearly 5 million distributed across approximately 50,000 square kilometers (*See Figure 1*), Costa Rica is known for its relative stability in a region that has been plagued by political unrest and interpersonal violence. The nation has been praised by various international organizations – including the World Health Organization and World Bank – for its prioritization of public healthcare, sanitation, and public education (12). Though Costa Rica was initially dependent on agriculture for economic development, it has since established ecotourism, finance, and medicine as additional sources of income. As Costa Rica continues to rank favorably among indices of human development, quality of life and environmental stability, it is important to understand the historical context in which its government was established – particularly when addressing the health system (13).

After establishing independence from the Spanish Empire in 1821, Costa Rica was absorbed by the United Provinces of Central America until 1838 at which point the government declared itself a sovereign nation. As Costa Rica began its evolution into an autonomous entity, those individuals remaining embraced democratic ideals and benefited from a lack of aristocracy

(14). Relative to other nations in the region, Costa Rica was relatively neglected by the Spanish Empire consequently allowing for progression as a liberal and democratic society. Additionally, the nation was sparsely inhabited by indigenous populations prior to colonization and ultimately resulted in a population majority of European descent. These factors contributed to an early commitment to human development and equality that has withstood civil unrest, economic hardship, and political turnover over the past two centuries (13). Today Costa Rica continues to serve as a benchmark democracy by international standards despite recent global economic downturns, and its health system has continued maintain positive health outcomes highlighting the government's responsiveness.

In relation to the development of the social security administration and subsequent social health insurance, Costa Rica made substantial progress in terms of several health outcomes. However, this was in large part due to multiple factors. Following a brief civil war in 1948, the Constitution of 1949 prohibited formation of a standing army in addition to requiring neutrality in international conflict (14). In combination with the establishment of *Caja Costarricense de Seguro Social* (CCSS) in 1941 – the nation's social security administration – the abolishing of its armed forces unified the country under ideals of human development and social equality. The health system itself underwent several reforms following the formation of CCSS with each marked by unique elements: a national labor movement, universalization of social security, and integration of primary care services (14). Ultimately, this resulted in considerable advances in public education and sanitation in addition to maintenance of a public universal healthcare system.

Despite social commitments and public policies targeting equity, the health system of Costa Rica ultimately does fall short in measures of mental health outcomes. Violent deaths

including traffic deaths, homicides and suicides comprise the third highest cause of mortality among the entire population; these deaths constitute the leading cause of mortality among young adults. Additional measures indicating inadequate consideration of mental health services show that mental illness accounts for 30 percent of years lost to disability (YLDs), and most recent estimates attribute approximately 26.3 percent of disease burden to neurologic, mental, and substance use disorders (16). While Costa Rica may outperform other low- and middle-income countries in outcomes of communicable disease and systemic illness, numerous factors warrant further investigation of its health system and mental health service development throughout the region.

Methods

This systematic review is conducted in accordance with the Cochrane Collaboration Guidelines and Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines (17,18).

The author independently searched the following electronic databases: PubMed, Ovid MEDLINE, PSYCinfo, Scopus, Elsevier, and Embase. Results were restricted to randomized controls trials, qualitative reviews, epidemiologic surveys, and position papers. Additionally, results were limited to full text articles published in English between the years of 2008 and 2018. Key search terms included the following: “global mental health”, “mental health services”, “primary healthcare”, “Costa Rica”, “Latin America”, “health system”, “primary care integration”, “mental healthcare”, “mental health resources”, and “universal healthcare”. The electronic search was also complemented by review of bibliographies and relevant articles. All citations were downloaded into EndNote and written in APA format.

The screening process was conducted by the author with discrepancies resolved by consultation with additional relevant parties. Inclusion criteria included the following: 1) mental health outcomes, 2) low- and middle-income countries, 3) health systems analysis, and 4) full-text article. Studies were excluded solely by language in which published, date of publication, relevance to mental health services as subject to reviewer, and comparisons between developed and developing nations or Costa Rica and peer nations.

Results

Search Yields

Initial searches yielded 493 articles of which 302 were duplicates. 129 were excluded based upon the title, abstract, study design, unsupported positions for mental health reorganization, and/or reference to Latin American development. A total of 44 articles were selected for review, and summarized within the paper. These articles included 12 qualitative studies of mental health services offered, 11 epidemiologic surveys, 10 position papers, 12 policy analyses, and 1 randomized control trial.

The Costa Rican Health System

Costa Rica is a middle-income country with a gross domestic product (GDP) upwards of 50 billion USD that continues to serve as a model nation for indicators of health and education. The government boasts a strong commitment to human development and social equity, and has been labeled a benchmark democracy by international standards (13,14). Though other countries have successfully implemented equitable and sustainable democratic institutions, Costa Rica has been praised for its exportable administration meaning that larger international powers have encouraged other developing nations to model their government after Costa Rica's. Key indicators of success within the health system lie in comparison to both peer nations and

developed nations around the world. Often paralleled with the United States, Costa Rica not only boasts a higher life expectancy but also lower rates of morbidity and mortality. Mortality in the United States is 18 percent higher among males and 10 percent higher among females; overall life expectancy in Costa Rica is 79.6 years compared with 77.8 years in the United States (19). As a comprehensive indicator of quality of life, knowledge and standard of living, Costa Rica has preserved high scores in the Human Development Index. While some attribute this ranking to rapid economic growth in the 20th century, relative success on these scales are more accurately the result of functional health services provided by public universal healthcare system (13).

Beginning in the 1940s, healthcare in Costa Rica was limited to hospitals, public charities, and facilities established by the Ministry of Health. Costa Rica created the *Caja Costarricense de Seguro Social* (CCSS) in 1941 as a functional social security administration, which initially provided services for wage-earning workers and their dependents (14). Eventually the CCSS came to control both Ministry of Health and charitable health facilities, and provided a unified approach to healthcare that avoided social insurance stratification and promoted a high degree of system integration by expanding insurance access to all citizens; system integration was achieved by facilitating referral networks and mandating all public hospitals to provide a comprehensive set of services. With this transition beginning in 1973, approximately 23.9 percent of health expenditures were allocated for public hospitals and the rest for the remaining charitable organizations and private institutions working with the CCSS (13). This quasi-monopolistic organization of the health system was in large part contradictory to the agenda recognized by international aid organizations involving multiple, competing providers. Despite uninterrupted external pressures to promote private service utilization, Costa Rica maintained its heterodox health policy and launched initiatives to improve primary care access (13,20). Rather

than caving to the agenda set by the World Bank and other donor organizations that is, the CCSS preserved its unique approach to providing healthcare by increasing health system integration and maintaining majority control over the distribution of government health expenditures. As this funding was continuously funneled to public institutions and those private facilities contracting with larger public hospitals, more individuals were encouraged to utilize these public services and more private providers were encouraged to link themselves to the CCSS.

Following the Alma Ata Declaration of 1978, Costa Rica placed community participation at the center of its political agenda (14). Government officials and CCSS administrators continued to promote comprehensive primary care services as international aid organizations encouraged selective primary care services; comprehensive care was to provide several services within one location at one time whereas selective care separated which services were offered where and at what time. However, individuals working within the CCSS began to recognize the lack of democratization in the health system given CCSS control and called for change. In an attempt to increase community participation in the health system, Costa Rica passed the Deconcentration Law in 1993, which established a representative health board elected by users, social security representatives, employers, and local social organizations (13). Immediately following, the CCSS generated performance agreements with the World Bank outlining 5 priority programs in chronic and preventive care. The CCSS also increased the number of primary care clinics placed throughout the country while incorporating other first-line services into its primary care system. Throughout the 1990s, Costa Rica maintained health expenditures averaging 7 percent of the nation's GDP of which 70 percent was allocated for public facilities and the remaining 30 percent distributed across private services. At the time, Costa Rica was

assigning similar proportions of its GDP to public health services as was Canada; New Zealand and Sweden allocated more funds, and the United States allocated significantly less (13).

Much of the success of the Costa Rican health system stems from a strong national identity and active middle class (14). This is perhaps most evident in a motivated health workforce that identifies intensely with its health system on several fronts: adequate compensation and social prestige afforded by their work, creative decision-making endorsed by organizational structure, managerial positions selected on the basis of technical merit, and equity and solidarity explicitly forming the foundation of the health system. As a result, Costa Ricans are afforded healthcare that has become a destination for medical tourism (13,20). Between 2000 and 2010, there were 0.58 new general practitioner and 0.33 specialty consultations per capita with an 8 percent hospital admission rate. For women, approximately 96 percent utilized contraceptive services and 87 percent received antenatal care during pregnancy. Infant mortality has been steadily decreasing over the last several decades, and immunizations rates are estimated at 91 percent. Furthermore, approximately 73 percent of first-line hypertensive services and 61 percent of first-line diabetic services were covered within the health system (13). Though these health outcomes serve as a conventional measure of healthcare, Costa Rica also boasts significant achievements in relation to human development including a low prevalence of poverty, high literacy rates, and an adequate rating on the Gini index – an indicator of income inequality – that can be traced back to the CCSS and a heterodox health policy (13,21).

To provide a more complete understanding of the success of *Caja Costarricense de Seguro Social* (CCSS) and the Costa Rican health system, several policy features must be understood: 1) integration facilitated by the unified public health system, 2) predominantly publicly-oriented care delivery, 3) user and community participation in management of health

services, 4) government expenditures comprising majority of all healthcare costs, 5) largely absent provider-purchaser splits, and 6) public social health insurance (13).

Current Status of Costa Rican Healthcare

At present, Costa Rica continues to function as a global model for health systems in the developed and developing world. Ranking 69 out of 188 countries on the United Nation's Human Development Index, Costa Rica also ranks 66 out of 155 countries on the Gender Inequality Index and approximately 3 percent of its population lives on less than 1.25 USD per day – a poverty rate much lower than Colombia or Mexico with poverty rates of 22.6 and 26.3 percent, respectively (13,22). Other indicators of human development place Costa Rica as an upper middle-income country including literacy rates and access to clean drinking water and sanitation with rates of 95.8 and 97.8 percent, respectively; other Latin American countries continue to experience much poorer outcomes including Mexico with a literacy rate of 90.5 percent and Colombia with only 86 percent of its population having access to clean drinking water and sanitation (13,22). Ultimately, Costa Rica and its relative success in human development compared to peer nations can be attributed to economic expansion in the latter half of the 20th century. Rapid growth in ecotourism and medical tourism – in addition to continuous cultivation and export of coffee – has given Costa Rica a gross domestic product (GDP) of approximately 57.44 billion USD and a GDP per capita of 11,824.64 USD (22). The Office for Economic Cooperation and Development has assigned Costa Rica a Gini coefficient of 48.2, which shows increasing inequality with increasing coefficients and describes a disposable income inequality approximately 50 percent higher than the international average; however, Costa Rica continues to fair better than peer nations like Colombia and Mexico with Gini coefficients of 57.6 and 54.6, respectively (*See Figure 2*) (13,22).

In spite of relatively high income inequality attributed to labor market conditions and weak redistribution of wealth through taxation, Costa Rica and its health system maintain consistent and exemplary health outcomes across economic downturns. The overall life expectancy in Costa Rica is 79.6 years compared with 77.8 years in the United States, 82.1 years in Canada, and 76.9 and 74.1 years in Mexico and Colombia, respectively (13,22). The infant mortality rate is 6.2 per 1,000 live births and the maternal mortality rate is 25 per 100,000 live births, which is directly linked to a 99.2 percent rate of live births attended by skilled health workers. In relation to indicators of maternal and child health, Costa Rica often performs at levels similar to that of the United States. Costa Rica has also consistently outperformed peer nations in terms of communicable disease with child immunization rates exceeding 90 percent, and a prevalence of tuberculosis at 19 per 100,000 population compared with 69 per 100,000 in Colombia and 44 per 100,000 in Mexico (22). In terms of the health system as a functional government entity, Costa Rica boasts a physician density of 1.113 per 1,000 population and total health expenditures comprising 9.3 percent of its GDP. The nation has consistently shown its dedication to development of efficient health and education systems, and continuously outpaces development in peer nations (*See Figure 3*) (22). However, Costa Rica faces similar challenges in mental health as seen in prevalence of mental and substance use disorders, human resource shortages, and poor utilization of health expenditures for mental health care.

Beginning with specific indicators of the mental health burden in Costa Rica, the nation suffers from affective disorders – including depression and anxiety – at an estimated prevalence of 4.2 to 6.7 percent (23). Additionally, the age-standardized suicide rate is approximately 7.3 per 100,000 population. In terms of systems indicators, there are 2.33 and 1.79 trained psychiatrists and psychologists per 100,000 population, and 1.64 trained social workers in the

mental health sector per 100,000 population (24). Colombia, which has poorer health outcomes across traditional measures of communicable disease and maternal child health, actually outperforms Costa Rica in these areas with approximately 2.53 and 10.74 trained psychiatrists and psychologists per 100,000 population, respectively. Though Costa Rica has not enacted formal legislation detailing mental health efforts, the health system has implemented a mental health policy heavily reliant on a mental health plan drafted from the WHO's Mental Health Gap Action Programme (24). However, this has not resulted in an increase of health expenditures dedicated to mental health services nor an increase in primary care physicians maintaining adequate training for mental health services. In fact, most recent estimates indicate that only 3 percent of primary care physicians reported receiving a refresher training for mental health services in the last year, and only 2.91 percent of total health expenditures were allocated specifically for mental health care (*See Figure 4*) (24). In an attempt to improve upon existing mental health services and implement new interventions within existing referral systems, Costa Rica has initiated changes with national policies.

Discussion

In Latin America and the Caribbean, Costa Rica again serves as a model nation. In response to the Mental Health Action Plan (2013-2020) published by the World Health Organization, Costa Rica underwent efforts to improve the services offered at both primary care and specialty facilities. Beginning with a mental health workshop in 2011, policymakers, physicians, researchers, and patient organizations identified the following barriers to improving mental health services offered by the CCSS: limited specialty facilities dedicated to psychiatric care, limited time per patient, difficult to obtain referrals, and limited access to new drug protocols and non-pharmacologic treatment including cognitive behavioral therapy (16,25). The

two most common reasons for ineffective mental health services ultimately came to be a lack of trained community-level, non-specialized health professionals and minimal interventions directed at promotion, prevention, and rehabilitation. As a result, Costa Rica and the CCSS established the National Policy on Mental Health in 2012 (16).

The mental health policy implemented by Costa Rica hinged primarily on a shift in funding and research priorities from focusing on comprehensive primary care to addressing the lack of epidemiologic data about mental health burden. Though there are data available outlining morbidity, mortality and disability related to mental health and substance use disorders, there has been no epidemiologic mental health studies conducted in the country over the last 35 years (16,26). This is commonplace among not only Latin America but also most low- and middle-income countries. If interventions are to be produced and mental health services are to be integrated into primary care, it is vital to characterize the prevalence and incidence of these disorders. Additionally, there is a large gap in funding for mental health care in Costa Rica. Despite having one of the highest health expenditures in the region, only 3 percent of those funds are allocated for mental health care of which 70 percent is dedicated to inpatient services. The National Policy on Mental Health seeks to reverse these trends in such a way that allows them to leverage the relatively high concentration of psychiatrists and psychologists; Costa Rica boasts 3.7 mental health professionals per 100,000 population compared to an average of less than 1.0 per 100,00 in other Latin American countries (16,27,28).

Mental Health Services in Latin America

Within the last several decades, countries in Latin America and the Caribbean have followed developed nations in a transition from psychiatric hospitals to community-based models of mental healthcare. However, disability adjusted life years (DALYs) attributed to

mental and substance use disorders has increased from 8.8 percent to 24 percent since 2004, and there still exists a treatment gap exceeding 60 percent throughout the region (16,29). While several organizations and providers continue to support the scale-up of mental health services, this care is accorded relatively low priority compared to other chronic illness for myriad reasons. At present, there is a well-documented scarcity of human and financial resources. In a survey of 58 low- and middle-income countries, it was estimated that the mental health workforce would need to be increased by approximately 239,000 full-time equivalents in order to provide sufficient care for those suffering from neurologic, mental, and substance abuse disorders (30).

Secondary to the lack of resources lies poorly organized services at both the primary care and specialty level. Within Latin American in particular, there is little to no consensus among stakeholders regarding acceptable mental health interventions such as task-shifting to community mental health workers, which indirectly has created resistance among providers when proposing systematic changes to primary care (29, 31). Further exacerbating the problem of poor organization is agreement upon acceptable tools for evaluation of collaborative mental health services (32). In combination with concerns of feasibility and information technology systems, mental health services have been granted a relatively low priority despite mounting evidence about morbidity, mortality, and disability (33).

Outside of Costa Rica, multiple entities are seeking to develop more effective mental health services and reduce the treatment gap for those suffering from neurologic, mental, and substance use disorders. The PanAmerican Health Organization – a subset of WHO – continues to bolster its technical coordination with countries in the region and has approved the Strategy and Plan of Action for Mental Health. This historic agreement marks the first time that every constituent member studied and approved programming to improve mental health care based on

provider experiences in addition to expressing strong technical and political commitment (34,35). At the clinical level, RedeAmericas serves an organization focused on training future providers to facilitate community mental health care. Funded by the National Institute of Mental Health (NIMH), RedeAmericas serves both Central and South America with regional hubs in Chile, Argentina, Colombia and Brazil. The primary goal of this initiative is not only to train future clinicians, but also increase capacity for mental health research in the region as the NIMH recognizes ongoing research as a key component of improving mental health services (36).

As social determinants of health continue to worsen already disparate inequities in access to health services, building capacity for mental health services at both the primary care and systems levels is paramount (37). In Nicaragua, the Center for Addiction and Mental Health (CAMH) has partnered with local universities to address key gaps in mental health services. By working within an established collaborative mental health care framework, CAMH and Nicaragua have seen success in ongoing knowledge sharing, networking, and educational opportunities (38,39). Similar to the partnerships fostered by the NIMH with universities throughout Central and South America, CAMH and other large research institutions are recognizing the growing need for mental health research, mental health interventions, and mental health care at large.

Mental Health and Primary Care Integration

One of the most successful examples of social health insurance implementation ultimately leading to a public universal healthcare system, the CCSS competes with developed nations like the United States. For instance, in measures of preventive service utilization by socioeconomic status, Costa Rica shows higher utilization of preventive services for those with the highest education when compared to the most educated in the United States (40). This

dedication to human development and social equity has most recently become apparent in the National Policy on Mental Health. With increased resources and amplified dedication to conducting the necessary research, Costa Rica is on the road to becoming another model of responsive and excellent healthcare (41).

Though there is a general consensus that many countries – including Costa Rica – lack the resources and interventions necessary to combat the burden of mental and substance use disorders, that is not to say that primary care integration has not seen occasional success. Intervention guidelines for treatment of neurologic, mental, and substance use disorders have been published by the World Health Organization and various mental health-primary care integration models have been studied in Nigeria, the Philippines, and India (42). Additionally, research conducted in the United States and Canada has highlighted the importance of on-site mental health services at primary care clinics. These studies have shown not only increased staff and provider satisfaction in treatment access and coordination of care after expansion of on-site services, but also increased rates of diagnosis and early initiation of treatment for mental health disorders (43). Stigma surrounding mental illness and access to adequate services still provide barriers to mental health care, and the growing burden on larger health systems in the developed and developing world warrant scaling of services and shifting of tasks (44,45).

The World Health Organization has developed a variety of tools that are now in use to study access to, quality of, and utilization of mental health services. One in particular, the Assessment Instrument for Mental Health Systems (AIMS), is being embraced by a diverse set of countries to examine the capacity of mental health services that have been integrated into the primary care setting (23). Other institutions have identified potential opportunities for implementation of mental health interventions including democratic transitions and natural

disasters in Latin America and the Caribbean (24). These programs are also being facilitated by the human rights defense movement and international cooperation with institutions like the NIMH and CAMH.

World Health Organization – Mental Health Gap Action Programme

Though the empirical evidence related to global mental health interventions pales in comparison to the general psychiatric research base, the work that has been conducted has sought to develop and evaluate systems, interventions, or institutions that can address the treatment gap. These interventions have most commonly taken two forms: 1) scaling-up of evidence-based practices and services in developing countries, and 2) task-shifting to train locally based non-specialists to deliver mental health services (1,42). The World Health Organization became a leader in global mental health intervention development in 2010 with its Mental Health Gap Programme. This particular program sought to find cost-effective evidence-based practices that could be easily integrated into already existing health services in developing countries. Like all public health interventions, one of the primary dilemmas faced in implementation or scale-up is the feasibility of making services more widely available (1,8). However, since its principal installment, the Mental Health Gap Programme has been utilized in several developing countries.

One of the most successful instances of implementation occurred in Nigeria where mental health services were integrated into the primary care network. The Mental Health Gap Action Programme Intervention Guide (mhGAP-IG) was contextualized for 8 local government areas in the Osun state (46). Over the course of 18 months, this intervention was used in the form of a supervised cascade training model with the ultimate goal of training frontline primary healthcare workers. A number of primary care workers were trained in detection and management of mental, neurological, or substance use disorders and the program saw a marked improvement in

the knowledge and skills of these particular health workers. The intervention also saw a significant increase in the number of mental health and substance use disorders identified with subsequent increases in the number of referrals with the ultimate conclusion that scale-up of these particular services were feasible and cost-effective (46).

Another keystone study was conducted with mental health workers and law enforcement in Liberia. Using a similar model, researchers aimed to develop a curriculum and collaboration model for police officers and mental health services following a set of key informant interviews (42). Discussions were had with law enforcement officials, mental health clinicians, and mental health service users in an effort to better understand areas of disconnect between mental health services and detainment of those with mental health problems. Ultimately a three-day curriculum was developed based on the Crisis Intervention Team (CIT) model and provided to both law enforcement officials and mental health clinicians. This particular curriculum resulted in increased knowledge of mental health among law enforcement and improved attitudes of the police force among mental health clinicians, which then resulted in improved interaction between the two parties six months later (42). These and other studies highlight the effective implementation of such global mental health interventions with relation to scaling-up and task-shifting, but do not negate the criticism the movement has received from multiple parties.

The global mental health movement is based on a number of studies that have touched on similar conclusions: 1) the burden of mental illness in developed and developing countries is relatively equal, 2) there is a significant gap that exists in the treatment of these disorders, 3) many individuals pursue traditional methods of healing in response to mental distress, 4) health outcomes of mental health problems can be dangerous without proper treatment, and 5) the availability and accessibility of effective mental health services remains inadequate (2,3,7). In

order to address each of these components ultimately contributing to the treatment gap in mental healthcare, several strategies must be employed. Some of these may include integration of screening and other mental health services into primary healthcare systems, or reducing the cost and improving the supply of effective treatment methods – including both medication and psychosocial intervention (5).

Another strategy that deserves pursuit include improving children's access to evidence-based interventions as a means to combat later development of mental health problems. Furthermore, provision of effective and affordable community-based care or rehabilitation would serve as means to provide culturally competent care that is so dependent on individual settings (5). What has shown to be the most effective at this point in time is the strengthening of mental health education for all healthcare personnel. Similar to the integration of mental health screening and other services into the primary care setting, by increasing overall awareness of mental health and substance use disorders in healthcare systems individuals are more likely to be recognized as suffering from these chronic conditions (4,5). Several countries including Brazil, Chile, and South Korea have already taken on efforts to increase the proportion of healthcare expenditures dedicated specifically to mental health services (8). These efforts have focused on maintaining a multidisciplinary approach to mental healthcare – including input from cultural psychiatry and medical anthropology – and have made substantial gains in combatting the scarcity of trained mental health works in developing countries (5). Though the movement itself continues to face a number of critics, global mental health has made substantial steps in increasing international awareness of mental health problems and will continue to function as an opportunity for individuals interested in this area of public health.

Summary

Mental health services and primary care integration has been shown to be effective in terms of clinical, functional, and caregivers outcomes across a variety of settings, but ultimately require country-specific – if not locality-specific – policies. As the global mental health movement continues to gain momentum on the international stage it is apparent that its prioritization is shifting upward. Despite an underestimation of the global burden of disease due to mental and substance use disorders, in part due to coding of death to physical cause or self-injurious behaviors, both developed and developing nations are beginning to dedicate more energy into study of these services. Of utmost importance in the development of global mental health services lies the practice of cultural competency and ethical research. The majority of interventions conducted within the last decade have responded adequately to inquiries of objectives and methods in addition to recognizing previous unethical patterns (47). With Costa Rica as an example, it is apparent that the future of mental health services lies in the following: 1) increasing funding and resources dedicated to mental health research, 2) reorganization of health systems to ease referrals and coordination of care, 3) training of non-specialist and community-based health workers to increase mental health workforce, 4) improving information technology systems to better identify mental health outcomes, and 5) integrating mental health services at the primary care level.

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Appendix



Figure 1: Topographical Map of Costa Rica. Costa Rica is bordered by Nicaragua to the north and Panama to the south with the Caribbean Sea and Pacific Ocean maintaining eastern and western borders, respectively. Costa Rica is known for its ecology and medical tourism (13).

Indicator	Relative Measure	Year
<i>Population (thousands)</i>	4807.9	2016
<i>UN Human Development Index Ranking</i>	69 of 188	2014
<i>Gini Index</i>	48.2	2015
<i>Gender Inequality Index</i>	66 of 155	2014
<i>Drinking Water, Sanitation Coverage (%)</i>	97.8	2015
<i>Poverty Rate (% living under USD 1.25 per day)</i>	3.1	2009
<i>Gross National Income (PPP billions)</i>	76.51	2016
<i>Gross Domestic Product (USD billions)</i>	57.44	2016
<i>GDP per capita (USD)</i>	11,824.64	2016
<i>Literacy Rate (total)</i>	95.8	2012

Figure 2: Basic Socioeconomic and Demographic Indicators in Costa Rica. Costa Rica is an upper middle-income country in Central America known for its rapid economic growth in the late 20th century and model democratic state. The nation also demonstrates significantly higher socioeconomic and demographic indicators of health and well-being relative to peer nations in Latin America and around the world (22).

Indicator	Relative Measure	Year
<i>Life expectancy at birth (total, male, female)</i>	79.6, 77.1, 82.2	2015
<i>Neonatal mortality (per 1,000 live births)</i>	6.2 [4.6-8.1]	2015
<i>Under-five mortality (per 1,000 live births)</i>	9.7 [7.7-12.2]	2015
<i>Maternal mortality ratio (per 100,000 live births)</i>	25 [20-29]	2015
<i>% births attended by skilled health workers</i>	99.2	2014
<i>% DTP3 immunization coverage among one-year-olds</i>	91	2014
<i>Prevalence of tuberculosis (per 100,000 population)</i>	19	2014
<i>Density of physicians (per 1,000 population)</i>	1.113	2013
<i>Total expenditure on health (% of GDP)</i>	9.3	2014
<i>General government expenditure on health (% of total government expenditure)</i>	23.3	2014
<i>Private expenditure on health (% of total expenditure on health)</i>	27.3	2014

Figure 3: Health System and Epidemiologic Indicators. Costa Rica has been praised for its heterodox health policy insofar as the nation's social security administration has allowed for upwards of 80 percent of its population to be covered by its social public health insurance. Stemming from near universal coverage, Costa Rica has witnessed rapid improvements across various health outcomes including life expectancy, infant and maternal mortality, and immunization coverage among nearly all children among others (22).

Indicator	Relative Measure	Year
Suicide rate per 100,000 population (total, male, female)	7.3, 12.6, 2.0	2015
<i>Estimated prevalence of affective disorders (% of total population)</i>	4.7	2017
<i>Percent of primary care physicians w/ at least 2-day refresher mental health training in last year</i>	3.0	2008
<i>Psychiatrists working in mental health sector (per 100,000 population)</i>	2.33	2011
<i>Psychologists working in mental health sector (per 100,000 population)</i>	1.79	2011
<i>Social workers working in mental health sector (per 100,000 population)</i>	1.64	2011
<i>Nurses working in mental health sector (per 100,000 population)</i>	3.92	2011
<i>Government expenditure on mental health (% of total gov't health expenditure)</i>	2.91	2011
<i>Government expenditure on mental hospitals (% of total gov't mental health expenditure)</i>	0.67	2011
<i>Stand-alone mental health legislation</i>	No	2011
<i>Mental health plan</i>	Yes	2011
<i>Mental health policy</i>	Yes	2011
<i>Mental health hospitals (per 100,000 population)</i>	0.04	2011
<i>Mental health units in general hospitals (per 100,000 population)</i>	108	2009
<i>Mental health outpatient facilities (per 100,000 population)</i>	0.82	2011
<i>Mental health day treatment facilities (per 100,000 population)</i>	0.04	2011
<i>Community residential facilities (per 100,000 population)</i>	0.05	2011

Figure 4: Mental Health System and Epidemiologic Indicators. Despite noted success in domains of communicable disease and maternal and child health, Costa Rica has fallen victim to gaps in mental healthcare. Similar to peer nations in Latin America and developed nations like the United States, Costa Rica allocates only a small proportion of its total health expenditures for mental health services and subsequently suffers from a shortage in human resources (23,24).